

Codata

0.6.0

Generated by Doxygen 1.9.6



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# Chapter 1

## Introduction

`codata` provides, automatically generated, source files for the latest codata constants (2018). The raw codata from <http://physics.nist.gov/constants> are parsed line by line and converted into declarations as constants for different languages:

- Fortran module named `fcodata.f90`
- C header named `ccodata.h`
- Python module named `pycodata.py`
- CPython extension named `cpycodata.c`

The sources can be directly included in projects where they are needed.

Links:

- Sources: <https://github.com/MilanSkocic/codata>.
- Online documentation: <https://milanskocic.github.io/codata/index.html>.
- PDF documentation: <https://milanskocic.github.io/codata/refman.pdf>.

### 1.1 Installation

See the file `INSTALL`.

### 1.2 Dependencies

See the file `REQUIREMENTS`.

### 1.3 License information

See the file `LICENSE`.



## Chapter 2

# install

Copy and paste the source code for the language of your choice.



# Chapter 3

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Version 3, 29 June 2007

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## Chapter 4

# requirements

`gcc`  $\geq 4.6$  or `msvc`  $\geq 14$

`gfortran`  $\geq 4.6$  or `ifort`  $\geq 18$

`cmake`  $\geq 3.10$





## Chapter 5

# Codata 0.1.0 Release Note

### 5.1 Changes

Implementation of:

- the parser of the codata raw data
- the generator of the Fortran modules
- the C API and C header
- the python wrapper (will be moved to its repository next release).

### 5.2 Download

[Codata Releases](#)

### 5.3 Contributors

Milan Skocic

### 5.4 Commits

Full Changelog: <https://github.com/MilanSkocic/codata/compare/....0.1.0>



## Chapter 6

# Codata 0.2.0 Release Note

### 6.1 Changes

- Bug fixes for the codata 2010.
- Bug fixes in the tests linked to the codata 2010.
- Add python wrapper for the number of constants method.

### 6.2 Download

[Codata Releases](#)

### 6.3 Contributors

Milan Skocic

### 6.4 Commits

Full Changelog: <https://github.com/MilanSkocic/codata/compare/0.1.0...0.2.0>



## Chapter 7

# Codata 0.2.1 Release Note

### 7.1 Changes

- Integration of Intel Fortran compiler and MSVC in cmake scripts.
- Add specifications and instructions for compiling on Windows

### 7.2 Download

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### 7.3 Contributors

Milan Skocic

### 7.4 Commits

Full Changelog: <https://github.com/MilanSkocic/codata/compare/0.2.0...0.2.1>



## Chapter 8

# Codata 0.3.0 Release Note

### 8.1 Changes

- Only last codata constants.

### 8.2 Download

[Codata Releases](#)

### 8.3 Contributors

Milan Skocic

### 8.4 Commits

Full Changelog: <https://github.com/MilanSkocic/codata/compare/0.2.1...0.3.0>





## Chapter 9

# Codata 0.4.0 Release Note

### 9.1 Changes

- Bring back pywrapper in the codata repository to sync versions.
- Improvements of the documentation.

### 9.2 Download

[Codata Releases](#)

### 9.3 Contributors

Milan Skocic

### 9.4 Commits

Full Changelog: <https://github.com/MilanSkocic/codata/compare/0.3.0...0.4.0>



## Chapter 10

# Codata 0.5.0 Release Note

### 10.1 Changes

- Changed the complete approach by not generating a library but only source files for different languages.
- Available languages: Fortran, C, python, CPython

### 10.2 Download

[Codata Releases](#)

### 10.3 Contributors

Milan Skocic

### 10.4 Commits

**Full Changelog:** <https://github.com/MilanSkocic/codata/compare/0.4.0...0.5.0>



## Chapter 11

# Codata 0.6.0 Release Note

### 11.1 Changes

- Created documentation.
- Fixed missing uncertainties for Cpython.

### 11.2 Download

[Codata Releases](#)

### 11.3 Contributors

Milan Skocic

### 11.4 Commits

**Full Changelog:** <https://github.com/MilanSkocic/codata/compare/0.4.0...0.5.0>



## Chapter 12

# Modules Index

### 12.1 Modules List

Here is a list of all modules with brief descriptions:

<a href="#">codata</a>	Codata constants - autogenerated . . . . .	<a href="#">37</a>
<a href="#">pycodata</a>	. . . . .	<a href="#">197</a>





## Chapter 13

# Data Type Index

### 13.1 Data Types List

Here are the data types with brief descriptions:

<a href="#">codata_file_props</a>	
Properties of the file for the codata raw data . . . . .	<a href="#">329</a>



## Chapter 14

# File Index

### 14.1 File List

Here is a list of all files with brief descriptions:

/Users/milan/programs/codata/src/ <a href="#">ccodata.h</a>	
Codata module - autogenerated	331
/Users/milan/programs/codata/src/ <a href="#">cpycodata.c</a>	488
/Users/milan/programs/codata/src/ <a href="#">fcodata.f90</a>	
Codata module - autogenerated	518
/Users/milan/programs/codata/src/ <a href="#">generator.c</a>	
Generator	563
/Users/milan/programs/codata/src/ <a href="#">pycodata.py</a>	578



## Chapter 15

# Module Documentation

### 15.1 codata Module Reference

Codata constants - autogenerated.

#### Variables

- `real(real64)`, parameter `alpha_particle_electron_mass_ratio` = 7294.29954142d0
- `real(real64)`, parameter `u_alpha_particle_electron_mass_ratio` = 0.00000024d0
- `real(real64)`, parameter `alpha_particle_mass` = 6.6446573357d-27  
*kg*
- `real(real64)`, parameter `u_alpha_particle_mass` = 0.0000000020d-27  
*kg*
- `real(real64)`, parameter `alpha_particle_mass_energy_equivalent` = 5.9719201914d-10  
*J.*
- `real(real64)`, parameter `u_alpha_particle_mass_energy_equivalent` = 0.0000000018d-10  
*J.*
- `real(real64)`, parameter `alpha_particle_mass_energy_equivalent_in_mev` = 3727.3794066d0  
*MeV.*
- `real(real64)`, parameter `u_alpha_particle_mass_energy_equivalent_in_mev` = 0.0000011d0  
*MeV.*
- `real(real64)`, parameter `alpha_particle_mass_in_u` = 4.001506179127d0  
*u*
- `real(real64)`, parameter `u_alpha_particle_mass_in_u` = 0.000000000063d0  
*u*
- `real(real64)`, parameter `alpha_particle_molar_mass` = 4.0015061777d-3  
*kg mol<sup>-1</sup>*
- `real(real64)`, parameter `u_alpha_particle_molar_mass` = 0.0000000012d-3  
*kg mol<sup>-1</sup>*
- `real(real64)`, parameter `alpha_particle_proton_mass_ratio` = 3.97259969009d0
- `real(real64)`, parameter `u_alpha_particle_proton_mass_ratio` = 0.00000000022d0
- `real(real64)`, parameter `alpha_particle_relative_atomic_mass` = 4.001506179127d0
- `real(real64)`, parameter `u_alpha_particle_relative_atomic_mass` = 0.000000000063d0
- `real(real64)`, parameter `angstrom_star` = 1.00001495d-10  
*m*

- `real(real64)`, parameter `u_angstrom_star` = 0.00000090d-10  
*m*
- `real(real64)`, parameter `atomic_mass_constant` = 1.66053906660d-27  
*kg*
- `real(real64)`, parameter `u_atomic_mass_constant` = 0.00000000050d-27  
*kg*
- `real(real64)`, parameter `atomic_mass_constant_energy_equivalent` = 1.49241808560d-10  
*J.*
- `real(real64)`, parameter `u_atomic_mass_constant_energy_equivalent` = 0.00000000045d-10  
*J.*
- `real(real64)`, parameter `atomic_mass_constant_energy_equivalent_in_mev` = 931.49410242d0  
*MeV.*
- `real(real64)`, parameter `u_atomic_mass_constant_energy_equivalent_in_mev` = 0.00000028d0  
*MeV.*
- `real(real64)`, parameter `atomic_mass_unit_electron_volt_relationship` = 9.3149410242d8  
*eV*
- `real(real64)`, parameter `u_atomic_mass_unit_electron_volt_relationship` = 0.000000028d8  
*eV*
- `real(real64)`, parameter `atomic_mass_unit_hartree_relationship` = 3.4231776874d7  
*E<sub>h</sub>.*
- `real(real64)`, parameter `u_atomic_mass_unit_hartree_relationship` = 0.000000010d7  
*E<sub>h</sub>.*
- `real(real64)`, parameter `atomic_mass_unit_hertz_relationship` = 2.25234271871d23  
*Hz.*
- `real(real64)`, parameter `u_atomic_mass_unit_hertz_relationship` = 0.0000000068d23  
*Hz.*
- `real(real64)`, parameter `atomic_mass_unit_inverse_meter_relationship` = 7.5130066104d14  
*m<sup>-1</sup>*
- `real(real64)`, parameter `u_atomic_mass_unit_inverse_meter_relationship` = 0.0000000023d14  
*m<sup>-1</sup>*
- `real(real64)`, parameter `atomic_mass_unit_joule_relationship` = 1.49241808560d-10  
*J.*
- `real(real64)`, parameter `u_atomic_mass_unit_joule_relationship` = 0.00000000045d-10  
*J.*
- `real(real64)`, parameter `atomic_mass_unit_kelvin_relationship` = 1.08095401916d13  
*K.*
- `real(real64)`, parameter `u_atomic_mass_unit_kelvin_relationship` = 0.00000000033d13  
*K.*
- `real(real64)`, parameter `atomic_mass_unit_kilogram_relationship` = 1.66053906660d-27  
*kg*
- `real(real64)`, parameter `u_atomic_mass_unit_kilogram_relationship` = 0.00000000050d-27  
*kg*
- `real(real64)`, parameter `atomic_unit_of_1st_hyperpolarizability` = 3.2063613061d-53  
*C<sup>3</sup> m<sup>3</sup> J<sup>-2</sup>.*
- `real(real64)`, parameter `u_atomic_unit_of_1st_hyperpolarizability` = 0.0000000015d-53  
*C<sup>3</sup> m<sup>3</sup> J<sup>-2</sup>.*
- `real(real64)`, parameter `atomic_unit_of_2nd_hyperpolarizability` = 6.2353799905d-65  
*C<sup>4</sup> m<sup>4</sup> J<sup>-3</sup>.*
- `real(real64)`, parameter `u_atomic_unit_of_2nd_hyperpolarizability` = 0.0000000038d-65  
*C<sup>4</sup> m<sup>4</sup> J<sup>-3</sup>.*
- `real(real64)`, parameter `atomic_unit_of_action` = 1.054571817d-34

- $J\ s.$
- `real(real64)`, parameter `u_atomic_unit_of_action` = 0.0d0
- $J\ s.$
- `real(real64)`, parameter `atomic_unit_of_charge` = 1.602176634d-19
- $C.$
- `real(real64)`, parameter `u_atomic_unit_of_charge` = 0.0d0
- $C.$
- `real(real64)`, parameter `atomic_unit_of_charge_density` = 1.08120238457d12
- $C\ m^{-3}.$
- `real(real64)`, parameter `u_atomic_unit_of_charge_density` = 0.00000000049d12
- $C\ m^{-3}.$
- `real(real64)`, parameter `atomic_unit_of_current` = 6.623618237510d-3
- $A.$
- `real(real64)`, parameter `u_atomic_unit_of_current` = 0.00000000013d-3
- $A.$
- `real(real64)`, parameter `atomic_unit_of_electric_dipole_mom` = 8.4783536255d-30
- $C\ m.$
- `real(real64)`, parameter `u_atomic_unit_of_electric_dipole_mom` = 0.000000013d-30
- $C\ m.$
- `real(real64)`, parameter `atomic_unit_of_electric_field` = 5.14220674763d11
- $V\ m^{-1}.$
- `real(real64)`, parameter `u_atomic_unit_of_electric_field` = 0.0000000078d11
- $V\ m^{-1}.$
- `real(real64)`, parameter `atomic_unit_of_electric_field_gradient` = 9.7173624292d21
- $V\ m^{-2}.$
- `real(real64)`, parameter `u_atomic_unit_of_electric_field_gradient` = 0.000000029d21
- $V\ m^{-2}.$
- `real(real64)`, parameter `atomic_unit_of_electric_polarizability` = 1.64877727436d-41
- $C^2\ m^2\ J^{-1}.$
- `real(real64)`, parameter `u_atomic_unit_of_electric_polarizability` = 0.0000000050d-41
- $C^2\ m^2\ J^{-1}.$
- `real(real64)`, parameter `atomic_unit_of_electric_potential` = 27.211386245988d0
- $V.$
- `real(real64)`, parameter `u_atomic_unit_of_electric_potential` = 0.00000000053d0
- $V.$
- `real(real64)`, parameter `atomic_unit_of_electric_quadrupole_mom` = 4.4865515246d-40
- $C\ m^2.$
- `real(real64)`, parameter `u_atomic_unit_of_electric_quadrupole_mom` = 0.000000014d-40
- $C\ m^2.$
- `real(real64)`, parameter `atomic_unit_of_energy` = 4.3597447222071d-18
- $J.$
- `real(real64)`, parameter `u_atomic_unit_of_energy` = 0.000000000085d-18
- $J.$
- `real(real64)`, parameter `atomic_unit_of_force` = 8.2387234983d-8
- $N.$
- `real(real64)`, parameter `u_atomic_unit_of_force` = 0.000000012d-8
- $N.$
- `real(real64)`, parameter `atomic_unit_of_length` = 5.29177210903d-11
- $m$
- `real(real64)`, parameter `u_atomic_unit_of_length` = 0.00000000080d-11
- $m$

- `real(real64)`, parameter `atomic_unit_of_mag__dipole_mom` =1.85480201566d-23  
 $J T^{-1}$ .
- `real(real64)`, parameter `u_atomic_unit_of_mag__dipole_mom` =0.00000000056d-23  
 $J T^{-1}$ .
- `real(real64)`, parameter `atomic_unit_of_mag__flux_density` =2.35051756758d5  
 $T$ .
- `real(real64)`, parameter `u_atomic_unit_of_mag__flux_density` =0.00000000071d5  
 $T$ .
- `real(real64)`, parameter `atomic_unit_of_magnetizability` =7.8910366008d-29  
 $J T^{-2}$ .
- `real(real64)`, parameter `u_atomic_unit_of_magnetizability` =0.0000000048d-29  
 $J T^{-2}$ .
- `real(real64)`, parameter `atomic_unit_of_mass` =9.1093837015d-31  
 $kg$
- `real(real64)`, parameter `u_atomic_unit_of_mass` =0.0000000028d-31  
 $kg$
- `real(real64)`, parameter `atomic_unit_of_momentum` =1.99285191410d-24  
 $kg m s^{-1}$
- `real(real64)`, parameter `u_atomic_unit_of_momentum` =0.00000000030d-24  
 $kg m s^{-1}$
- `real(real64)`, parameter `atomic_unit_of_permittivity` =1.11265005545d-10  
 $F m^{-1}$ .
- `real(real64)`, parameter `u_atomic_unit_of_permittivity` =0.00000000017d-10  
 $F m^{-1}$ .
- `real(real64)`, parameter `atomic_unit_of_time` =2.4188843265857d-17  
 $s$
- `real(real64)`, parameter `u_atomic_unit_of_time` =0.000000000047d-17  
 $s$
- `real(real64)`, parameter `atomic_unit_of_velocity` =2.18769126364d6  
 $m s^{-1}$
- `real(real64)`, parameter `u_atomic_unit_of_velocity` =0.00000000033d6  
 $m s^{-1}$
- `real(real64)`, parameter `avogadro_constant` =6.02214076d23  
 $mol^{-1}$
- `real(real64)`, parameter `u_avogadro_constant` =0.0d0  
 $mol^{-1}$
- `real(real64)`, parameter `bohr_magneton` =9.2740100783d-24  
 $J T^{-1}$ .
- `real(real64)`, parameter `u_bohr_magneton` =0.0000000028d-24  
 $J T^{-1}$ .
- `real(real64)`, parameter `bohr_magneton_in_ev_t` =5.7883818060d-5  
 $eV T^{-1}$
- `real(real64)`, parameter `u_bohr_magneton_in_ev_t` =0.0000000017d-5  
 $eV T^{-1}$
- `real(real64)`, parameter `bohr_magneton_in_hz_t` =1.39962449361d10  
 $Hz T^{-1}$ .
- `real(real64)`, parameter `u_bohr_magneton_in_hz_t` =0.00000000042d10  
 $Hz T^{-1}$ .
- `real(real64)`, parameter `bohr_magneton_in_inverse_meter_per_tesla` =46.686447783d0  
 $m^{-1} T^{-1}$
- `real(real64)`, parameter `u_bohr_magneton_in_inverse_meter_per_tesla` =0.000000014d0



- $m^{-1} T^{-1}$ 
  - `real(real64)`, parameter `bohr_magneton_in_k_t` = 0.67171381563d0
- $K T^{-1}$ .
  - `real(real64)`, parameter `u_bohr_magneton_in_k_t` = 0.00000000020d0
- $K T^{-1}$ .
  - `real(real64)`, parameter `bohr_radius` = 5.29177210903d-11
- $m$ 
  - `real(real64)`, parameter `u_bohr_radius` = 0.00000000080d-11
- $m$ 
  - `real(real64)`, parameter `boltzmann_constant` = 1.380649d-23
- $J K^{-1}$ .
  - `real(real64)`, parameter `u_boltzmann_constant` = 0.0d0
- $J K^{-1}$ .
  - `real(real64)`, parameter `boltzmann_constant_in_ev_k` = 8.617333262d-5
- $eV K^{-1}$ 
  - `real(real64)`, parameter `u_boltzmann_constant_in_ev_k` = 0.0d0
- $eV K^{-1}$ 
  - `real(real64)`, parameter `boltzmann_constant_in_hz_k` = 2.083661912d10
- $Hz K^{-1}$ .
  - `real(real64)`, parameter `u_boltzmann_constant_in_hz_k` = 0.0d0
- $Hz K^{-1}$ .
  - `real(real64)`, parameter `boltzmann_constant_in_inverse_meter_per_kelvin` = 69.50348004d0
- $m^{-1} K^{-1}$ 
  - `real(real64)`, parameter `u_boltzmann_constant_in_inverse_meter_per_kelvin` = 0.0d0
- $m^{-1} K^{-1}$ 
  - `real(real64)`, parameter `characteristic_impedance_of_vacuum` = 376.730313668d0
- $ohm$ 
  - `real(real64)`, parameter `u_characteristic_impedance_of_vacuum` = 0.000000057d0
- $ohm$ 
  - `real(real64)`, parameter `classical_electron_radius` = 2.8179403262d-15
- $m$ 
  - `real(real64)`, parameter `u_classical_electron_radius` = 0.0000000013d-15
- $m$ 
  - `real(real64)`, parameter `compton_wavelength` = 2.42631023867d-12
- $m$ 
  - `real(real64)`, parameter `u_compton_wavelength` = 0.00000000073d-12
- $m$ 
  - `real(real64)`, parameter `conductance_quantum` = 7.748091729d-5
- $S$ .
  - `real(real64)`, parameter `u_conductance_quantum` = 0.0d0
- $S$ .
  - `real(real64)`, parameter `conventional_value_of_ampere_90` = 1.00000008887d0
- $A$ .
  - `real(real64)`, parameter `u_conventional_value_of_ampere_90` = 0.0d0
- $A$ .
  - `real(real64)`, parameter `conventional_value_of_coulomb_90` = 1.00000008887d0
- $C$ .
  - `real(real64)`, parameter `u_conventional_value_of_coulomb_90` = 0.0d0
- $C$ .
  - `real(real64)`, parameter `conventional_value_of_farad_90` = 0.99999998220d0
- $F$ .
  -

- `real(real64)`, parameter `u_conventional_value_of_farad_90` =0.0d0  
*F.*
- `real(real64)`, parameter `conventional_value_of_henry_90` =1.00000001779d0  
*H.*
- `real(real64)`, parameter `u_conventional_value_of_henry_90` =0.0d0  
*H.*
- `real(real64)`, parameter `conventional_value_of_josephson_constant` =483597.9d9  
*Hz V<sup>-1</sup>.*
- `real(real64)`, parameter `u_conventional_value_of_josephson_constant` =0.0d0  
*Hz V<sup>-1</sup>.*
- `real(real64)`, parameter `conventional_value_of_ohm_90` =1.00000001779d0  
*ohm*
- `real(real64)`, parameter `u_conventional_value_of_ohm_90` =0.0d0  
*ohm*
- `real(real64)`, parameter `conventional_value_of_volt_90` =1.00000010666d0  
*V.*
- `real(real64)`, parameter `u_conventional_value_of_volt_90` =0.0d0  
*V.*
- `real(real64)`, parameter `conventional_value_of_von_klitzing_constant` =25812.807d0  
*ohm*
- `real(real64)`, parameter `u_conventional_value_of_von_klitzing_constant` =0.0d0  
*ohm*
- `real(real64)`, parameter `conventional_value_of_watt_90` =1.00000019553d0  
*W.*
- `real(real64)`, parameter `u_conventional_value_of_watt_90` =0.0d0  
*W.*
- `real(real64)`, parameter `copper_x_unit` =1.00207697d-13  
*m*
- `real(real64)`, parameter `u_copper_x_unit` =0.00000028d-13  
*m*
- `real(real64)`, parameter `deuteron_electron_mag__mom__ratio` =-4.664345551d-4
- `real(real64)`, parameter `u_deuteron_electron_mag__mom__ratio` =0.000000012d-4
- `real(real64)`, parameter `deuteron_electron_mass_ratio` =3670.48296788d0
- `real(real64)`, parameter `u_deuteron_electron_mass_ratio` =0.00000013d0
- `real(real64)`, parameter `deuteron_g_factor` =0.8574382338d0
- `real(real64)`, parameter `u_deuteron_g_factor` =0.0000000022d0
- `real(real64)`, parameter `deuteron_mag__mom` =4.330735094d-27  
*J T<sup>-1</sup>.*
- `real(real64)`, parameter `u_deuteron_mag__mom` =0.000000011d-27  
*J T<sup>-1</sup>.*
- `real(real64)`, parameter `deuteron_mag__mom__to_bohr_magneton_ratio` =4.669754570d-4
- `real(real64)`, parameter `u_deuteron_mag__mom__to_bohr_magneton_ratio` =0.000000012d-4
- `real(real64)`, parameter `deuteron_mag__mom__to_nuclear_magneton_ratio` =0.8574382338d0
- `real(real64)`, parameter `u_deuteron_mag__mom__to_nuclear_magneton_ratio` =0.0000000022d0
- `real(real64)`, parameter `deuteron_mass` =3.3435837724d-27  
*kg*
- `real(real64)`, parameter `u_deuteron_mass` =0.0000000010d-27  
*kg*
- `real(real64)`, parameter `deuteron_mass_energy_equivalent` =3.00506323102d-10  
*J.*
- `real(real64)`, parameter `u_deuteron_mass_energy_equivalent` =0.00000000091d-10

- $J$ .
- `real(real64)`, parameter `deuteron_mass_energy_equivalent_in_mev` =1875.61294257d0  
 $MeV$ .
- `real(real64)`, parameter `u_deuteron_mass_energy_equivalent_in_mev` =0.00000057d0  
 $MeV$ .
- `real(real64)`, parameter `deuteron_mass_in_u` =2.013553212745d0  
 $u$
- `real(real64)`, parameter `u_deuteron_mass_in_u` =0.000000000040d0  
 $u$
- `real(real64)`, parameter `deuteron_molar_mass` =2.01355321205d-3  
 $kg\ mol^{-1}$
- `real(real64)`, parameter `u_deuteron_molar_mass` =0.00000000061d-3  
 $kg\ mol^{-1}$
- `real(real64)`, parameter `deuteron_neutron_mag__mom__ratio` =-0.44820653d0
- `real(real64)`, parameter `u_deuteron_neutron_mag__mom__ratio` =0.00000011d0
- `real(real64)`, parameter `deuteron_proton_mag__mom__ratio` =0.30701220939d0
- `real(real64)`, parameter `u_deuteron_proton_mag__mom__ratio` =0.00000000079d0
- `real(real64)`, parameter `deuteron_proton_mass_ratio` =1.99900750139d0
- `real(real64)`, parameter `u_deuteron_proton_mass_ratio` =0.00000000011d0
- `real(real64)`, parameter `deuteron_relative_atomic_mass` =2.013553212745d0
- `real(real64)`, parameter `u_deuteron_relative_atomic_mass` =0.000000000040d0
- `real(real64)`, parameter `deuteron_rms_charge_radius` =2.12799d-15  
 $m$
- `real(real64)`, parameter `u_deuteron_rms_charge_radius` =0.00074d-15  
 $m$
- `real(real64)`, parameter `electron_charge_to_mass_quotient` =-1.75882001076d11  
 $C\ kg^{-1}$ .
- `real(real64)`, parameter `u_electron_charge_to_mass_quotient` =0.00000000053d11  
 $C\ kg^{-1}$ .
- `real(real64)`, parameter `electron_deuteron_mag__mom__ratio` =-2143.9234915d0
- `real(real64)`, parameter `u_electron_deuteron_mag__mom__ratio` =0.0000056d0
- `real(real64)`, parameter `electron_deuteron_mass_ratio` =2.724437107462d-4
- `real(real64)`, parameter `u_electron_deuteron_mass_ratio` =0.000000000096d-4
- `real(real64)`, parameter `electron_g_factor` =-2.00231930436256d0
- `real(real64)`, parameter `u_electron_g_factor` =0.0000000000035d0
- `real(real64)`, parameter `electron_gyromag__ratio` =1.76085963023d11  
 $s^{-1}\ T^{-1}$
- `real(real64)`, parameter `u_electron_gyromag__ratio` =0.00000000053d11  
 $s^{-1}\ T^{-1}$
- `real(real64)`, parameter `electron_gyromag__ratio_in_mhz_t` =28024.9514242d0  
 $MHz\ T^{-1}$ .
- `real(real64)`, parameter `u_electron_gyromag__ratio_in_mhz_t` =0.0000085d0  
 $MHz\ T^{-1}$ .
- `real(real64)`, parameter `electron_helion_mass_ratio` =1.819543074573d-4
- `real(real64)`, parameter `u_electron_helion_mass_ratio` =0.000000000079d-4
- `real(real64)`, parameter `electron_mag__mom` =-9.2847647043d-24  
 $J\ T^{-1}$ .
- `real(real64)`, parameter `u_electron_mag__mom` =0.0000000028d-24  
 $J\ T^{-1}$ .
- `real(real64)`, parameter `electron_mag__mom__anomaly` =1.15965218128d-3
- `real(real64)`, parameter `u_electron_mag__mom__anomaly` =0.00000000018d-3
- `real(real64)`, parameter `electron_mag__mom__to_bohr_magneton_ratio` =-1.00115965218128d0

- real(real64), parameter `u_electron_mag_mom_to_bohr_magneton_ratio` =0.00000000000018d0
- real(real64), parameter `electron_mag_mom_to_nuclear_magneton_ratio` =-1838.28197188d0
- real(real64), parameter `u_electron_mag_mom_to_nuclear_magneton_ratio` =0.00000011d0
- real(real64), parameter `electron_mass` =9.1093837015d-31  
*kg*
- real(real64), parameter `u_electron_mass` =0.0000000028d-31  
*kg*
- real(real64), parameter `electron_mass_energy_equivalent` =8.1871057769d-14  
*J.*
- real(real64), parameter `u_electron_mass_energy_equivalent` =0.0000000025d-14  
*J.*
- real(real64), parameter `electron_mass_energy_equivalent_in_mev` =0.51099895000d0  
*MeV.*
- real(real64), parameter `u_electron_mass_energy_equivalent_in_mev` =0.00000000015d0  
*MeV.*
- real(real64), parameter `electron_mass_in_u` =5.48579909065d-4  
*u*
- real(real64), parameter `u_electron_mass_in_u` =0.00000000016d-4  
*u*
- real(real64), parameter `electron_molar_mass` =5.4857990888d-7  
*kg mol<sup>-1</sup>*
- real(real64), parameter `u_electron_molar_mass` =0.0000000017d-7  
*kg mol<sup>-1</sup>*
- real(real64), parameter `electron_muon_mag_mom_ratio` =206.7669883d0
- real(real64), parameter `u_electron_muon_mag_mom_ratio` =0.0000046d0
- real(real64), parameter `electron_muon_mass_ratio` =4.83633169d-3
- real(real64), parameter `u_electron_muon_mass_ratio` =0.00000011d-3
- real(real64), parameter `electron_neutron_mag_mom_ratio` =960.92050d0
- real(real64), parameter `u_electron_neutron_mag_mom_ratio` =0.00023d0
- real(real64), parameter `electron_neutron_mass_ratio` =5.4386734424d-4
- real(real64), parameter `u_electron_neutron_mass_ratio` =0.0000000026d-4
- real(real64), parameter `electron_proton_mag_mom_ratio` =-658.21068789d0
- real(real64), parameter `u_electron_proton_mag_mom_ratio` =0.00000020d0
- real(real64), parameter `electron_proton_mass_ratio` =5.44617021487d-4
- real(real64), parameter `u_electron_proton_mass_ratio` =0.00000000033d-4
- real(real64), parameter `electron_relative_atomic_mass` =5.48579909065d-4
- real(real64), parameter `u_electron_relative_atomic_mass` =0.00000000016d-4
- real(real64), parameter `electron_tau_mass_ratio` =2.87585d-4
- real(real64), parameter `u_electron_tau_mass_ratio` =0.00019d-4
- real(real64), parameter `electron_to_alpha_particle_mass_ratio` =1.370933554787d-4
- real(real64), parameter `u_electron_to_alpha_particle_mass_ratio` =0.00000000045d-4
- real(real64), parameter `electron_to_shielded_helion_mag_mom_ratio` =864.058257d0
- real(real64), parameter `u_electron_to_shielded_helion_mag_mom_ratio` =0.000010d0
- real(real64), parameter `electron_to_shielded_proton_mag_mom_ratio` =-658.2275971d0
- real(real64), parameter `u_electron_to_shielded_proton_mag_mom_ratio` =0.0000072d0
- real(real64), parameter `electron_triton_mass_ratio` =1.819200062251d-4
- real(real64), parameter `u_electron_triton_mass_ratio` =0.000000000090d-4
- real(real64), parameter `electron_volt` =1.602176634d-19  
*J.*
- real(real64), parameter `u_electron_volt` =0.0d0  
*J.*
- real(real64), parameter `electron_volt_atomic_mass_unit_relationship` =1.07354410233d-9

- $u$
- `real(real64)`, parameter `u_electron_volt_atomic_mass_unit_relationship` = 0.00000000032d-9
- $u$
- `real(real64)`, parameter `electron_volt_hartree_relationship` = 3.6749322175655d-2
- $E_h$ .
- `real(real64)`, parameter `u_electron_volt_hartree_relationship` = 0.000000000071d-2
- $E_h$ .
- `real(real64)`, parameter `electron_volt_hertz_relationship` = 2.417989242d14
- $Hz$ .
- `real(real64)`, parameter `u_electron_volt_hertz_relationship` = 0.0d0
- $Hz$ .
- `real(real64)`, parameter `electron_volt_inverse_meter_relationship` = 8.065543937d5
- $m^{-1}$
- `real(real64)`, parameter `u_electron_volt_inverse_meter_relationship` = 0.0d0
- $m^{-1}$
- `real(real64)`, parameter `electron_volt_joule_relationship` = 1.602176634d-19
- $J$ .
- `real(real64)`, parameter `u_electron_volt_joule_relationship` = 0.0d0
- $J$ .
- `real(real64)`, parameter `electron_volt_kelvin_relationship` = 1.160451812d4
- $K$ .
- `real(real64)`, parameter `u_electron_volt_kelvin_relationship` = 0.0d0
- $K$ .
- `real(real64)`, parameter `electron_volt_kilogram_relationship` = 1.782661921d-36
- $kg$
- `real(real64)`, parameter `u_electron_volt_kilogram_relationship` = 0.0d0
- $kg$
- `real(real64)`, parameter `elementary_charge` = 1.602176634d-19
- $C$ .
- `real(real64)`, parameter `u_elementary_charge` = 0.0d0
- $C$ .
- `real(real64)`, parameter `elementary_charge_over_h_bar` = 1.519267447d15
- $A J^{-1}$ .
- `real(real64)`, parameter `u_elementary_charge_over_h_bar` = 0.0d0
- $A J^{-1}$ .
- `real(real64)`, parameter `faraday_constant` = 96485.33212d0
- $C mol^{-1}$ .
- `real(real64)`, parameter `u_faraday_constant` = 0.0d0
- $C mol^{-1}$ .
- `real(real64)`, parameter `fermi_coupling_constant` = 1.1663787d-5
- $GeV^{-2}$ .
- `real(real64)`, parameter `u_fermi_coupling_constant` = 0.0000006d-5
- $GeV^{-2}$ .
- `real(real64)`, parameter `fine_structure_constant` = 7.2973525693d-3
- `real(real64)`, parameter `u_fine_structure_constant` = 0.0000000011d-3
- `real(real64)`, parameter `first_radiation_constant` = 3.741771852d-16
- $W m^2$ .
- `real(real64)`, parameter `u_first_radiation_constant` = 0.0d0
- $W m^2$ .
- `real(real64)`, parameter `first_radiation_constant_for_spectral_radiance` = 1.191042972d-16
- $W m^2 sr^{-1}$ .

- real(real64), parameter `u_first_radiation_constant_for_spectral_radiance` =0.0d0  
 $W m^{-2} sr^{-1}$ .
- real(real64), parameter `hartree_atomic_mass_unit_relationship` =2.92126232205d-8  
 $u$
- real(real64), parameter `u_hartree_atomic_mass_unit_relationship` =0.00000000088d-8  
 $u$
- real(real64), parameter `hartree_electron_volt_relationship` =27.211386245988d0  
 $eV$
- real(real64), parameter `u_hartree_electron_volt_relationship` =0.00000000053d0  
 $eV$
- real(real64), parameter `hartree_energy` =4.3597447222071d-18  
 $J$ .
- real(real64), parameter `u_hartree_energy` =0.000000000085d-18  
 $J$ .
- real(real64), parameter `hartree_energy_in_ev` =27.211386245988d0  
 $eV$
- real(real64), parameter `u_hartree_energy_in_ev` =0.00000000053d0  
 $eV$
- real(real64), parameter `hartree_hertz_relationship` =6.579683920502d15  
 $Hz$ .
- real(real64), parameter `u_hartree_hertz_relationship` =0.00000000013d15  
 $Hz$ .
- real(real64), parameter `hartree_inverse_meter_relationship` =2.1947463136320d7  
 $m^{-1}$
- real(real64), parameter `u_hartree_inverse_meter_relationship` =0.000000000043d7  
 $m^{-1}$
- real(real64), parameter `hartree_joule_relationship` =4.3597447222071d-18  
 $J$ .
- real(real64), parameter `u_hartree_joule_relationship` =0.000000000085d-18  
 $J$ .
- real(real64), parameter `hartree_kelvin_relationship` =3.1577502480407d5  
 $K$ .
- real(real64), parameter `u_hartree_kelvin_relationship` =0.000000000061d5  
 $K$ .
- real(real64), parameter `hartree_kilogram_relationship` =4.8508702095432d-35  
 $kg$
- real(real64), parameter `u_hartree_kilogram_relationship` =0.000000000094d-35  
 $kg$
- real(real64), parameter `helion_electron_mass_ratio` =5495.88528007d0
- real(real64), parameter `u_helion_electron_mass_ratio` =0.00000024d0
- real(real64), parameter `helion_g_factor` =-4.255250615d0
- real(real64), parameter `u_helion_g_factor` =0.000000050d0
- real(real64), parameter `helion_mag__mom` =-1.074617532d-26  
 $J T^{-1}$ .
- real(real64), parameter `u_helion_mag__mom` =0.000000013d-26  
 $J T^{-1}$ .
- real(real64), parameter `helion_mag__mom__to_bohr_magneton_ratio` =-1.158740958d-3
- real(real64), parameter `u_helion_mag__mom__to_bohr_magneton_ratio` =0.000000014d-3
- real(real64), parameter `helion_mag__mom__to_nuclear_magneton_ratio` =-2.127625307d0
- real(real64), parameter `u_helion_mag__mom__to_nuclear_magneton_ratio` =0.000000025d0
- real(real64), parameter `helion_mass` =5.0064127796d-27

- kg*
- `real(real64)`, parameter `u_helion_mass` = 0.0000000015d-27
- kg*
- `real(real64)`, parameter `helion_mass_energy_equivalent` = 4.4995394125d-10
- J.*
- `real(real64)`, parameter `u_helion_mass_energy_equivalent` = 0.0000000014d-10
- J.*
- `real(real64)`, parameter `helion_mass_energy_equivalent_in_mev` = 2808.39160743d0
- MeV.*
- `real(real64)`, parameter `u_helion_mass_energy_equivalent_in_mev` = 0.00000085d0
- MeV.*
- `real(real64)`, parameter `helion_mass_in_u` = 3.014932247175d0
- u*
- `real(real64)`, parameter `u_helion_mass_in_u` = 0.000000000097d0
- u*
- `real(real64)`, parameter `helion_molar_mass` = 3.01493224613d-3
- kg mol<sup>-1</sup>*
- `real(real64)`, parameter `u_helion_molar_mass` = 0.00000000091d-3
- kg mol<sup>-1</sup>*
- `real(real64)`, parameter `helion_proton_mass_ratio` = 2.99315267167d0
- `real(real64)`, parameter `u_helion_proton_mass_ratio` = 0.00000000013d0
- `real(real64)`, parameter `helion_relative_atomic_mass` = 3.014932247175d0
- `real(real64)`, parameter `u_helion_relative_atomic_mass` = 0.000000000097d0
- `real(real64)`, parameter `helion_shielding_shift` = 5.996743d-5
- `real(real64)`, parameter `u_helion_shielding_shift` = 0.000010d-5
- `real(real64)`, parameter `hertz_atomic_mass_unit_relationship` = 4.4398216652d-24
- u*
- `real(real64)`, parameter `u_hertz_atomic_mass_unit_relationship` = 0.0000000013d-24
- u*
- `real(real64)`, parameter `hertz_electron_volt_relationship` = 4.135667696d-15
- eV*
- `real(real64)`, parameter `u_hertz_electron_volt_relationship` = 0.0d0
- eV*
- `real(real64)`, parameter `hertz_hartree_relationship` = 1.5198298460570d-16
- E<sub>h</sub>.*
- `real(real64)`, parameter `u_hertz_hartree_relationship` = 0.0000000000029d-16
- E<sub>h</sub>.*
- `real(real64)`, parameter `hertz_inverse_meter_relationship` = 3.335640951d-9
- m<sup>-1</sup>*
- `real(real64)`, parameter `u_hertz_inverse_meter_relationship` = 0.0d0
- m<sup>-1</sup>*
- `real(real64)`, parameter `hertz_joule_relationship` = 6.62607015d-34
- J.*
- `real(real64)`, parameter `u_hertz_joule_relationship` = 0.0d0
- J.*
- `real(real64)`, parameter `hertz_kelvin_relationship` = 4.799243073d-11
- K.*
- `real(real64)`, parameter `u_hertz_kelvin_relationship` = 0.0d0
- K.*
- `real(real64)`, parameter `hertz_kilogram_relationship` = 7.372497323d-51
- kg*

- `real(real64)`, parameter `u_hertz_kilogram_relationship` =0.0d0  
*kg*
- `real(real64)`, parameter `hyperfine_transition_frequency_of_cs_133` =9192631770.0d0  
*Hz.*
- `real(real64)`, parameter `u_hyperfine_transition_frequency_of_cs_133` =0.0d0  
*Hz.*
- `real(real64)`, parameter `inverse_fine_structure_constant` =137.035999084d0
- `real(real64)`, parameter `u_inverse_fine_structure_constant` =0.000000021d0
- `real(real64)`, parameter `inverse_meter_atomic_mass_unit_relationship` =1.33102505010d-15  
*u*
- `real(real64)`, parameter `u_inverse_meter_atomic_mass_unit_relationship` =0.00000000040d-15  
*u*
- `real(real64)`, parameter `inverse_meter_electron_volt_relationship` =1.239841984d-6  
*eV*
- `real(real64)`, parameter `u_inverse_meter_electron_volt_relationship` =0.0d0  
*eV*
- `real(real64)`, parameter `inverse_meter_hartree_relationship` =4.5563352529120d-8  
*E\_h.*
- `real(real64)`, parameter `u_inverse_meter_hartree_relationship` =0.0000000000088d-8  
*E\_h.*
- `real(real64)`, parameter `inverse_meter_hertz_relationship` =299792458.0d0  
*Hz.*
- `real(real64)`, parameter `u_inverse_meter_hertz_relationship` =0.0d0  
*Hz.*
- `real(real64)`, parameter `inverse_meter_joule_relationship` =1.986445857d-25  
*J.*
- `real(real64)`, parameter `u_inverse_meter_joule_relationship` =0.0d0  
*J.*
- `real(real64)`, parameter `inverse_meter_kelvin_relationship` =1.438776877d-2  
*K.*
- `real(real64)`, parameter `u_inverse_meter_kelvin_relationship` =0.0d0  
*K.*
- `real(real64)`, parameter `inverse_meter_kilogram_relationship` =2.210219094d-42  
*kg*
- `real(real64)`, parameter `u_inverse_meter_kilogram_relationship` =0.0d0  
*kg*
- `real(real64)`, parameter `inverse_of_conductance_quantum` =12906.40372d0  
*ohm*
- `real(real64)`, parameter `u_inverse_of_conductance_quantum` =0.0d0  
*ohm*
- `real(real64)`, parameter `josephson_constant` =483597.8484d9  
*Hz V<sup>-1</sup>.*
- `real(real64)`, parameter `u_josephson_constant` =0.0d0  
*Hz V<sup>-1</sup>.*
- `real(real64)`, parameter `joule_atomic_mass_unit_relationship` =6.7005352565d9  
*u*
- `real(real64)`, parameter `u_joule_atomic_mass_unit_relationship` =0.0000000020d9  
*u*
- `real(real64)`, parameter `joule_electron_volt_relationship` =6.241509074d18  
*eV*
- `real(real64)`, parameter `u_joule_electron_volt_relationship` =0.0d0



- $eV$
- `real(real64), parameter joule_hartree_relationship = 2.2937122783963d17`
- $E_h$ .
- `real(real64), parameter u_joule_hartree_relationship = 0.0000000000045d17`
- $E_h$ .
- `real(real64), parameter joule_hertz_relationship = 1.509190179d33`
- $Hz$ .
- `real(real64), parameter u_joule_hertz_relationship = 0.0d0`
- $Hz$ .
- `real(real64), parameter joule_inverse_meter_relationship = 5.034116567d24`
- $m^{-1}$
- `real(real64), parameter u_joule_inverse_meter_relationship = 0.0d0`
- $m^{-1}$
- `real(real64), parameter joule_kelvin_relationship = 7.242970516d22`
- $K$ .
- `real(real64), parameter u_joule_kelvin_relationship = 0.0d0`
- $K$ .
- `real(real64), parameter joule_kilogram_relationship = 1.112650056d-17`
- $kg$
- `real(real64), parameter u_joule_kilogram_relationship = 0.0d0`
- $kg$
- `real(real64), parameter kelvin_atomic_mass_unit_relationship = 9.2510873014d-14`
- $u$
- `real(real64), parameter u_kelvin_atomic_mass_unit_relationship = 0.0000000028d-14`
- $u$
- `real(real64), parameter kelvin_electron_volt_relationship = 8.617333262d-5`
- $eV$
- `real(real64), parameter u_kelvin_electron_volt_relationship = 0.0d0`
- $eV$
- `real(real64), parameter kelvin_hartree_relationship = 3.1668115634556d-6`
- $E_h$ .
- `real(real64), parameter u_kelvin_hartree_relationship = 0.0000000000061d-6`
- $E_h$ .
- `real(real64), parameter kelvin_hertz_relationship = 2.083661912d10`
- $Hz$ .
- `real(real64), parameter u_kelvin_hertz_relationship = 0.0d0`
- $Hz$ .
- `real(real64), parameter kelvin_inverse_meter_relationship = 69.50348004d0`
- $m^{-1}$
- `real(real64), parameter u_kelvin_inverse_meter_relationship = 0.0d0`
- $m^{-1}$
- `real(real64), parameter kelvin_joule_relationship = 1.380649d-23`
- $J$ .
- `real(real64), parameter u_kelvin_joule_relationship = 0.0d0`
- $J$ .
- `real(real64), parameter kelvin_kilogram_relationship = 1.536179187d-40`
- $kg$
- `real(real64), parameter u_kelvin_kilogram_relationship = 0.0d0`
- $kg$
- `real(real64), parameter kilogram_atomic_mass_unit_relationship = 6.0221407621d26`
- $u$

- `real(real64)`, parameter `u_kilogram_atomic_mass_unit_relationship` = 0.0000000018d26  
*u*
- `real(real64)`, parameter `kilogram_electron_volt_relationship` = 5.609588603d35  
*eV*
- `real(real64)`, parameter `u_kilogram_electron_volt_relationship` = 0.0d0  
*eV*
- `real(real64)`, parameter `kilogram_hartree_relationship` = 2.0614857887409d34  
*E<sub>h</sub>*
- `real(real64)`, parameter `u_kilogram_hartree_relationship` = 0.000000000040d34  
*E<sub>h</sub>*
- `real(real64)`, parameter `kilogram_hertz_relationship` = 1.356392489d50  
*Hz*
- `real(real64)`, parameter `u_kilogram_hertz_relationship` = 0.0d0  
*Hz*
- `real(real64)`, parameter `kilogram_inverse_meter_relationship` = 4.524438335d41  
*m<sup>-1</sup>*
- `real(real64)`, parameter `u_kilogram_inverse_meter_relationship` = 0.0d0  
*m<sup>-1</sup>*
- `real(real64)`, parameter `kilogram_joule_relationship` = 8.987551787d16  
*J*
- `real(real64)`, parameter `u_kilogram_joule_relationship` = 0.0d0  
*J*
- `real(real64)`, parameter `kilogram_kelvin_relationship` = 6.509657260d39  
*K*
- `real(real64)`, parameter `u_kilogram_kelvin_relationship` = 0.0d0  
*K*
- `real(real64)`, parameter `lattice_parameter_of_silicon` = 5.431020511d-10  
*m*
- `real(real64)`, parameter `u_lattice_parameter_of_silicon` = 0.000000089d-10  
*m*
- `real(real64)`, parameter `lattice_spacing_of_ideal_si__220` = 1.920155716d-10  
*m*
- `real(real64)`, parameter `u_lattice_spacing_of_ideal_si__220` = 0.000000032d-10  
*m*
- `real(real64)`, parameter `loschmidt_constant__273_15_k__100_kpa` = 2.651645804d25  
*m<sup>-3</sup>*
- `real(real64)`, parameter `u_loschmidt_constant__273_15_k__100_kpa` = 0.0d0  
*m<sup>-3</sup>*
- `real(real64)`, parameter `loschmidt_constant__273_15_k__101_325_kpa` = 2.686780111d25  
*m<sup>-3</sup>*
- `real(real64)`, parameter `u_loschmidt_constant__273_15_k__101_325_kpa` = 0.0d0  
*m<sup>-3</sup>*
- `real(real64)`, parameter `luminous_efficacy` = 683.0d0  
*lm W<sup>-1</sup>*
- `real(real64)`, parameter `u_luminous_efficacy` = 0.0d0  
*lm W<sup>-1</sup>*
- `real(real64)`, parameter `mag_flux_quantum` = 2.067833848d-15  
*Wb*
- `real(real64)`, parameter `u_mag_flux_quantum` = 0.0d0  
*Wb*
- `real(real64)`, parameter `molar_gas_constant` = 8.314462618d0

- $J\ mol^{-1}\ K^{-1}$ .
- `real(real64)`, parameter `u_molar_gas_constant` = 0.0d0
- $J\ mol^{-1}\ K^{-1}$ .
- `real(real64)`, parameter `molar_mass_constant` = 0.99999999965d-3
- $kg\ mol^{-1}$
- `real(real64)`, parameter `u_molar_mass_constant` = 0.00000000030d-3
- $kg\ mol^{-1}$
- `real(real64)`, parameter `molar_mass_of_carbon_12` = 11.9999999958d-3
- $kg\ mol^{-1}$
- `real(real64)`, parameter `u_molar_mass_of_carbon_12` = 0.0000000036d-3
- $kg\ mol^{-1}$
- `real(real64)`, parameter `molar_planck_constant` = 3.990312712d-10
- $J\ Hz^{-1}\ mol^{-1}$ .
- `real(real64)`, parameter `u_molar_planck_constant` = 0.0d0
- $J\ Hz^{-1}\ mol^{-1}$ .
- `real(real64)`, parameter `molar_volume_of_ideal_gas_273_15_k_100_kpa` = 22.71095464d-3
- $m^3\ mol^{-1}$
- `real(real64)`, parameter `u_molar_volume_of_ideal_gas_273_15_k_100_kpa` = 0.0d0
- $m^3\ mol^{-1}$
- `real(real64)`, parameter `molar_volume_of_ideal_gas_273_15_k_101_325_kpa` = 22.41396954d-3
- $m^3\ mol^{-1}$
- `real(real64)`, parameter `u_molar_volume_of_ideal_gas_273_15_k_101_325_kpa` = 0.0d0
- $m^3\ mol^{-1}$
- `real(real64)`, parameter `molar_volume_of_silicon` = 1.205883199d-5
- $m^3\ mol^{-1}$
- `real(real64)`, parameter `u_molar_volume_of_silicon` = 0.000000060d-5
- $m^3\ mol^{-1}$
- `real(real64)`, parameter `molybdenum_x_unit` = 1.00209952d-13
- $m$
- `real(real64)`, parameter `u_molybdenum_x_unit` = 0.00000053d-13
- $m$
- `real(real64)`, parameter `muon_compton_wavelength` = 1.173444110d-14
- $m$
- `real(real64)`, parameter `u_muon_compton_wavelength` = 0.000000026d-14
- $m$
- `real(real64)`, parameter `muon_electron_mass_ratio` = 206.7682830d0
- `real(real64)`, parameter `u_muon_electron_mass_ratio` = 0.0000046d0
- `real(real64)`, parameter `muon_g_factor` = -2.0023318418d0
- `real(real64)`, parameter `u_muon_g_factor` = 0.000000013d0
- `real(real64)`, parameter `muon_mag__mom` = -4.49044830d-26
- $J\ T^{-1}$ .
- `real(real64)`, parameter `u_muon_mag__mom` = 0.00000010d-26
- $J\ T^{-1}$ .
- `real(real64)`, parameter `muon_mag__mom__anomaly` = 1.16592089d-3
- `real(real64)`, parameter `u_muon_mag__mom__anomaly` = 0.00000063d-3
- `real(real64)`, parameter `muon_mag__mom__to_bohr_magneton_ratio` = -4.84197047d-3
- `real(real64)`, parameter `u_muon_mag__mom__to_bohr_magneton_ratio` = 0.00000011d-3
- `real(real64)`, parameter `muon_mag__mom__to_nuclear_magneton_ratio` = -8.89059703d0
- `real(real64)`, parameter `u_muon_mag__mom__to_nuclear_magneton_ratio` = 0.00000020d0
- `real(real64)`, parameter `muon_mass` = 1.883531627d-28
- $kg$

- real(real64), parameter `u_muon_mass` =0.000000042d-28  
*kg*
- real(real64), parameter `muon_mass_energy_equivalent` =1.692833804d-11  
*J.*
- real(real64), parameter `u_muon_mass_energy_equivalent` =0.000000038d-11  
*J.*
- real(real64), parameter `muon_mass_energy_equivalent_in_mev` =105.6583755d0  
*MeV.*
- real(real64), parameter `u_muon_mass_energy_equivalent_in_mev` =0.0000023d0  
*MeV.*
- real(real64), parameter `muon_mass_in_u` =0.1134289259d0  
*u*
- real(real64), parameter `u_muon_mass_in_u` =0.0000000025d0  
*u*
- real(real64), parameter `muon_molar_mass` =1.134289259d-4  
*kg mol<sup>-1</sup>*
- real(real64), parameter `u_muon_molar_mass` =0.000000025d-4  
*kg mol<sup>-1</sup>*
- real(real64), parameter `muon_neutron_mass_ratio` =0.1124545170d0
- real(real64), parameter `u_muon_neutron_mass_ratio` =0.0000000025d0
- real(real64), parameter `muon_proton_mag_mom_ratio` =-3.183345142d0
- real(real64), parameter `u_muon_proton_mag_mom_ratio` =0.000000071d0
- real(real64), parameter `muon_proton_mass_ratio` =0.1126095264d0
- real(real64), parameter `u_muon_proton_mass_ratio` =0.0000000025d0
- real(real64), parameter `muon_tau_mass_ratio` =5.94635d-2
- real(real64), parameter `u_muon_tau_mass_ratio` =0.00040d-2
- real(real64), parameter `natural_unit_of_action` =1.054571817d-34  
*J s.*
- real(real64), parameter `u_natural_unit_of_action` =0.0d0  
*J s.*
- real(real64), parameter `natural_unit_of_action_in_ev_s` =6.582119569d-16  
*eV s*
- real(real64), parameter `u_natural_unit_of_action_in_ev_s` =0.0d0  
*eV s*
- real(real64), parameter `natural_unit_of_energy` =8.1871057769d-14  
*J.*
- real(real64), parameter `u_natural_unit_of_energy` =0.0000000025d-14  
*J.*
- real(real64), parameter `natural_unit_of_energy_in_mev` =0.51099895000d0  
*MeV.*
- real(real64), parameter `u_natural_unit_of_energy_in_mev` =0.00000000015d0  
*MeV.*
- real(real64), parameter `natural_unit_of_length` =3.8615926796d-13  
*m*
- real(real64), parameter `u_natural_unit_of_length` =0.0000000012d-13  
*m*
- real(real64), parameter `natural_unit_of_mass` =9.1093837015d-31  
*kg*
- real(real64), parameter `u_natural_unit_of_mass` =0.0000000028d-31  
*kg*
- real(real64), parameter `natural_unit_of_momentum` =2.73092453075d-22

- $kg\ m\ s^{-1}$
- `real(real64)`, parameter `u_natural_unit_of_momentum` = 0.00000000082d-22
- $kg\ m\ s^{-1}$
- `real(real64)`, parameter `natural_unit_of_momentum_in_mev_c` = 0.51099895000d0
- $MeV/c.$
- `real(real64)`, parameter `u_natural_unit_of_momentum_in_mev_c` = 0.00000000015d0
- $MeV/c.$
- `real(real64)`, parameter `natural_unit_of_time` = 1.28808866819d-21
- $s$
- `real(real64)`, parameter `u_natural_unit_of_time` = 0.00000000039d-21
- $s$
- `real(real64)`, parameter `natural_unit_of_velocity` = 299792458.0d0
- $m\ s^{-1}$
- `real(real64)`, parameter `u_natural_unit_of_velocity` = 0.0d0
- $m\ s^{-1}$
- `real(real64)`, parameter `neutron_compton_wavelength` = 1.31959090581d-15
- $m$
- `real(real64)`, parameter `u_neutron_compton_wavelength` = 0.00000000075d-15
- $m$
- `real(real64)`, parameter `neutron_electron_mag__mom__ratio` = 1.04066882d-3
- `real(real64)`, parameter `u_neutron_electron_mag__mom__ratio` = 0.00000025d-3
- `real(real64)`, parameter `neutron_electron_mass_ratio` = 1838.68366173d0
- `real(real64)`, parameter `u_neutron_electron_mass_ratio` = 0.00000089d0
- `real(real64)`, parameter `neutron_g_factor` = -3.82608545d0
- `real(real64)`, parameter `u_neutron_g_factor` = 0.00000090d0
- `real(real64)`, parameter `neutron_gyromag__ratio` = 1.83247171d8
- $s^{-1}\ T^{-1}$
- `real(real64)`, parameter `u_neutron_gyromag__ratio` = 0.00000043d8
- $s^{-1}\ T^{-1}$
- `real(real64)`, parameter `neutron_gyromag__ratio_in_mhz_t` = 29.1646931d0
- $MHz\ T^{-1}.$
- `real(real64)`, parameter `u_neutron_gyromag__ratio_in_mhz_t` = 0.0000069d0
- $MHz\ T^{-1}.$
- `real(real64)`, parameter `neutron_mag__mom` = -9.6623651d-27
- $J\ T^{-1}.$
- `real(real64)`, parameter `u_neutron_mag__mom` = 0.0000023d-27
- $J\ T^{-1}.$
- `real(real64)`, parameter `neutron_mag__mom__to_bohr_magneton_ratio` = -1.04187563d-3
- `real(real64)`, parameter `u_neutron_mag__mom__to_bohr_magneton_ratio` = 0.00000025d-3
- `real(real64)`, parameter `neutron_mag__mom__to_nuclear_magneton_ratio` = -1.91304273d0
- `real(real64)`, parameter `u_neutron_mag__mom__to_nuclear_magneton_ratio` = 0.00000045d0
- `real(real64)`, parameter `neutron_mass` = 1.67492749804d-27
- $kg$
- `real(real64)`, parameter `u_neutron_mass` = 0.00000000095d-27
- $kg$
- `real(real64)`, parameter `neutron_mass_energy_equivalent` = 1.50534976287d-10
- $J.$
- `real(real64)`, parameter `u_neutron_mass_energy_equivalent` = 0.00000000086d-10
- $J.$
- `real(real64)`, parameter `neutron_mass_energy_equivalent_in_mev` = 939.56542052d0
- $MeV.$

- `real(real64)`, parameter `u_neutron_mass_energy_equivalent_in_mev` = 0.00000054d0  
*MeV.*
- `real(real64)`, parameter `neutron_mass_in_u` = 1.00866491595d0  
*u*
- `real(real64)`, parameter `u_neutron_mass_in_u` = 0.00000000049d0  
*u*
- `real(real64)`, parameter `neutron_molar_mass` = 1.00866491560d-3  
*kg mol<sup>-1</sup>*
- `real(real64)`, parameter `u_neutron_molar_mass` = 0.00000000057d-3  
*kg mol<sup>-1</sup>*
- `real(real64)`, parameter `neutron_muon_mass_ratio` = 8.89248406d0
- `real(real64)`, parameter `u_neutron_muon_mass_ratio` = 0.00000020d0
- `real(real64)`, parameter `neutron_proton_mag__mom__ratio` = -0.68497934d0
- `real(real64)`, parameter `u_neutron_proton_mag__mom__ratio` = 0.00000016d0
- `real(real64)`, parameter `neutron_proton_mass_difference` = 2.30557435d-30  
*kg*
- `real(real64)`, parameter `u_neutron_proton_mass_difference` = 0.00000082d-30  
*kg*
- `real(real64)`, parameter `neutron_proton_mass_difference_energy_equivalent` = 2.07214689d-13  
*J.*
- `real(real64)`, parameter `u_neutron_proton_mass_difference_energy_equivalent` = 0.00000074d-13  
*J.*
- `real(real64)`, parameter `neutron_proton_mass_difference_energy_equivalent_in_mev` = 1.29333236d0  
*MeV.*
- `real(real64)`, parameter `u_neutron_proton_mass_difference_energy_equivalent_in_mev` = 0.00000046d0  
*MeV.*
- `real(real64)`, parameter `neutron_proton_mass_difference_in_u` = 1.38844933d-3  
*u*
- `real(real64)`, parameter `u_neutron_proton_mass_difference_in_u` = 0.00000049d-3  
*u*
- `real(real64)`, parameter `neutron_proton_mass_ratio` = 1.00137841931d0
- `real(real64)`, parameter `u_neutron_proton_mass_ratio` = 0.00000000049d0
- `real(real64)`, parameter `neutron_relative_atomic_mass` = 1.00866491595d0
- `real(real64)`, parameter `u_neutron_relative_atomic_mass` = 0.00000000049d0
- `real(real64)`, parameter `neutron_tau_mass_ratio` = 0.528779d0
- `real(real64)`, parameter `u_neutron_tau_mass_ratio` = 0.000036d0
- `real(real64)`, parameter `neutron_to_shielded_proton_mag__mom__ratio` = -0.68499694d0
- `real(real64)`, parameter `u_neutron_to_shielded_proton_mag__mom__ratio` = 0.00000016d0
- `real(real64)`, parameter `newtonian_constant_of_gravitation` = 6.67430d-11  
*m<sup>3</sup> kg<sup>-1</sup> s<sup>-2</sup>*
- `real(real64)`, parameter `u_newtonian_constant_of_gravitation` = 0.00015d-11  
*m<sup>3</sup> kg<sup>-1</sup> s<sup>-2</sup>*
- `real(real64)`, parameter `newtonian_constant_of_gravitation_over_h_bar_c` = 6.70883d-39  
*(GeV/c<sup>2</sup>)<sup>-2</sup>*
- `real(real64)`, parameter `u_newtonian_constant_of_gravitation_over_h_bar_c` = 0.00015d-39  
*(GeV/c<sup>2</sup>)<sup>-2</sup>*
- `real(real64)`, parameter `nuclear_magneton` = 5.0507837461d-27  
*J T<sup>-1</sup>.*
- `real(real64)`, parameter `u_nuclear_magneton` = 0.0000000015d-27  
*J T<sup>-1</sup>.*
- `real(real64)`, parameter `nuclear_magneton_in_ev_t` = 3.15245125844d-8

- $eV\ T^{-1}$
- `real(real64)`, parameter `u_nuclear_magneton_in_ev_t` = 0.00000000096d-8
- $eV\ T^{-1}$
- `real(real64)`, parameter `nuclear_magneton_in_inverse_meter_per_tesla` = 2.54262341353d-2
- $m^{-1}\ T^{-1}$
- `real(real64)`, parameter `u_nuclear_magneton_in_inverse_meter_per_tesla` = 0.00000000078d-2
- $m^{-1}\ T^{-1}$
- `real(real64)`, parameter `nuclear_magneton_in_k_t` = 3.6582677756d-4
- $K\ T^{-1}$ .
- `real(real64)`, parameter `u_nuclear_magneton_in_k_t` = 0.0000000011d-4
- $K\ T^{-1}$ .
- `real(real64)`, parameter `nuclear_magneton_in_mhz_t` = 7.6225932291d0
- $MHz\ T^{-1}$ .
- `real(real64)`, parameter `u_nuclear_magneton_in_mhz_t` = 0.0000000023d0
- $MHz\ T^{-1}$ .
- `real(real64)`, parameter `planck_constant` = 6.62607015d-34
- $J\ Hz^{-1}$ .
- `real(real64)`, parameter `u_planck_constant` = 0.0d0
- $J\ Hz^{-1}$ .
- `real(real64)`, parameter `planck_constant_in_ev_hz` = 4.135667696d-15
- $eV\ Hz^{-1}$
- `real(real64)`, parameter `u_planck_constant_in_ev_hz` = 0.0d0
- $eV\ Hz^{-1}$
- `real(real64)`, parameter `planck_length` = 1.616255d-35
- $m$
- `real(real64)`, parameter `u_planck_length` = 0.000018d-35
- $m$
- `real(real64)`, parameter `planck_mass` = 2.176434d-8
- $kg$
- `real(real64)`, parameter `u_planck_mass` = 0.000024d-8
- $kg$
- `real(real64)`, parameter `planck_mass_energy_equivalent_in_gev` = 1.220890d19
- $GeV$ .
- `real(real64)`, parameter `u_planck_mass_energy_equivalent_in_gev` = 0.000014d19
- $GeV$ .
- `real(real64)`, parameter `planck_temperature` = 1.416784d32
- $K$ .
- `real(real64)`, parameter `u_planck_temperature` = 0.000016d32
- $K$ .
- `real(real64)`, parameter `planck_time` = 5.391247d-44
- $s$
- `real(real64)`, parameter `u_planck_time` = 0.000060d-44
- $s$
- `real(real64)`, parameter `proton_charge_to_mass_quotient` = 9.5788331560d7
- $C\ kg^{-1}$ .
- `real(real64)`, parameter `u_proton_charge_to_mass_quotient` = 0.0000000029d7
- $C\ kg^{-1}$ .
- `real(real64)`, parameter `proton_compton_wavelength` = 1.32140985539d-15
- $m$
- `real(real64)`, parameter `u_proton_compton_wavelength` = 0.00000000040d-15
- $m$

- real(real64), parameter `proton_electron_mass_ratio` =1836.15267343d0
- real(real64), parameter `u_proton_electron_mass_ratio` =0.00000011d0
- real(real64), parameter `proton_g_factor` =5.5856946893d0
- real(real64), parameter `u_proton_g_factor` =0.0000000016d0
- real(real64), parameter `proton_gyromag_ratio` =2.6752218744d8  
 $s^{-1} T^{-1}$
- real(real64), parameter `u_proton_gyromag_ratio` =0.0000000011d8  
 $s^{-1} T^{-1}$
- real(real64), parameter `proton_gyromag_ratio_in_mhz_t` =42.577478518d0  
 $MHz T^{-1}$ .
- real(real64), parameter `u_proton_gyromag_ratio_in_mhz_t` =0.000000018d0  
 $MHz T^{-1}$ .
- real(real64), parameter `proton_mag_mom` =1.41060679736d-26  
 $J T^{-1}$ .
- real(real64), parameter `u_proton_mag_mom` =0.00000000060d-26  
 $J T^{-1}$ .
- real(real64), parameter `proton_mag_mom_to_bohr_magneton_ratio` =1.52103220230d-3
- real(real64), parameter `u_proton_mag_mom_to_bohr_magneton_ratio` =0.00000000046d-3
- real(real64), parameter `proton_mag_mom_to_nuclear_magneton_ratio` =2.79284734463d0
- real(real64), parameter `u_proton_mag_mom_to_nuclear_magneton_ratio` =0.00000000082d0
- real(real64), parameter `proton_mag_shielding_correction` =2.5689d-5
- real(real64), parameter `u_proton_mag_shielding_correction` =0.0011d-5
- real(real64), parameter `proton_mass` =1.67262192369d-27  
 $kg$
- real(real64), parameter `u_proton_mass` =0.00000000051d-27  
 $kg$
- real(real64), parameter `proton_mass_energy_equivalent` =1.50327761598d-10  
 $J$ .
- real(real64), parameter `u_proton_mass_energy_equivalent` =0.00000000046d-10  
 $J$ .
- real(real64), parameter `proton_mass_energy_equivalent_in_mev` =938.27208816d0  
 $MeV$ .
- real(real64), parameter `u_proton_mass_energy_equivalent_in_mev` =0.00000029d0  
 $MeV$ .
- real(real64), parameter `proton_mass_in_u` =1.007276466621d0  
 $u$
- real(real64), parameter `u_proton_mass_in_u` =0.00000000053d0  
 $u$
- real(real64), parameter `proton_molar_mass` =1.00727646627d-3  
 $kg mol^{-1}$
- real(real64), parameter `u_proton_molar_mass` =0.00000000031d-3  
 $kg mol^{-1}$
- real(real64), parameter `proton_muon_mass_ratio` =8.88024337d0
- real(real64), parameter `u_proton_muon_mass_ratio` =0.00000020d0
- real(real64), parameter `proton_neutron_mag_mom_ratio` =-1.45989805d0
- real(real64), parameter `u_proton_neutron_mag_mom_ratio` =0.00000034d0
- real(real64), parameter `proton_neutron_mass_ratio` =0.99862347812d0
- real(real64), parameter `u_proton_neutron_mass_ratio` =0.0000000049d0
- real(real64), parameter `proton_relative_atomic_mass` =1.007276466621d0
- real(real64), parameter `u_proton_relative_atomic_mass` =0.00000000053d0
- real(real64), parameter `proton_rms_charge_radius` =8.414d-16  
 $m$



- `real(real64), parameter u_proton_rms_charge_radius = 0.019d-16`  
*m*
- `real(real64), parameter proton_tau_mass_ratio = 0.528051d0`
- `real(real64), parameter u_proton_tau_mass_ratio = 0.000036d0`
- `real(real64), parameter quantum_of_circulation = 3.6369475516d-4`  
*m<sup>2</sup> s<sup>-1</sup>*
- `real(real64), parameter u_quantum_of_circulation = 0.0000000011d-4`  
*m<sup>2</sup> s<sup>-1</sup>*
- `real(real64), parameter quantum_of_circulation_times_2 = 7.2738951032d-4`  
*m<sup>2</sup> s<sup>-1</sup>*
- `real(real64), parameter u_quantum_of_circulation_times_2 = 0.0000000022d-4`  
*m<sup>2</sup> s<sup>-1</sup>*
- `real(real64), parameter reduced_compton_wavelength = 3.8615926796d-13`  
*m*
- `real(real64), parameter u_reduced_compton_wavelength = 0.0000000012d-13`  
*m*
- `real(real64), parameter reduced_muon_compton_wavelength = 1.867594306d-15`  
*m*
- `real(real64), parameter u_reduced_muon_compton_wavelength = 0.000000042d-15`  
*m*
- `real(real64), parameter reduced_neutron_compton_wavelength = 2.1001941552d-16`  
*m*
- `real(real64), parameter u_reduced_neutron_compton_wavelength = 0.0000000012d-16`  
*m*
- `real(real64), parameter reduced_planck_constant = 1.054571817d-34`  
*J s.*
- `real(real64), parameter u_reduced_planck_constant = 0.0d0`  
*J s.*
- `real(real64), parameter reduced_planck_constant_in_ev_s = 6.582119569d-16`  
*eV s*
- `real(real64), parameter u_reduced_planck_constant_in_ev_s = 0.0d0`  
*eV s*
- `real(real64), parameter reduced_planck_constant_times_c_in_mev_fm = 197.3269804d0`  
*MeV fm.*
- `real(real64), parameter u_reduced_planck_constant_times_c_in_mev_fm = 0.0d0`  
*MeV fm.*
- `real(real64), parameter reduced_proton_compton_wavelength = 2.10308910336d-16`  
*m*
- `real(real64), parameter u_reduced_proton_compton_wavelength = 0.00000000064d-16`  
*m*
- `real(real64), parameter reduced_tau_compton_wavelength = 1.110538d-16`  
*m*
- `real(real64), parameter u_reduced_tau_compton_wavelength = 0.000075d-16`  
*m*
- `real(real64), parameter rydberg_constant = 10973731.568160d0`  
*m<sup>-1</sup>*
- `real(real64), parameter u_rydberg_constant = 0.000021d0`  
*m<sup>-1</sup>*
- `real(real64), parameter rydberg_constant_times_c_in_hz = 3.2898419602508d15`  
*Hz.*
- `real(real64), parameter u_rydberg_constant_times_c_in_hz = 0.000000000064d15`

- Hz.*
- `real(real64)`, parameter `rydberg_constant_times_hc_in_ev` = 13.605693122994d0
- eV*
- `real(real64)`, parameter `u_rydberg_constant_times_hc_in_ev` = 0.000000000026d0
- eV*
- `real(real64)`, parameter `rydberg_constant_times_hc_in_j` = 2.1798723611035d-18
- J.*
- `real(real64)`, parameter `u_rydberg_constant_times_hc_in_j` = 0.0000000000042d-18
- J.*
- `real(real64)`, parameter `sackur_tetrode_constant_1_k_100_kpa` = -1.15170753706d0
- `real(real64)`, parameter `u_sackur_tetrode_constant_1_k_100_kpa` = 0.00000000045d0
- `real(real64)`, parameter `sackur_tetrode_constant_1_k_101_325_kpa` = -1.16487052358d0
- `real(real64)`, parameter `u_sackur_tetrode_constant_1_k_101_325_kpa` = 0.00000000045d0
- `real(real64)`, parameter `second_radiation_constant` = 1.438776877d-2
- m K*
- `real(real64)`, parameter `u_second_radiation_constant` = 0.0d0
- m K*
- `real(real64)`, parameter `shielded_helion_gyromag_ratio` = 2.037894569d8
- $s^{-1} T^{-1}$
- `real(real64)`, parameter `u_shielded_helion_gyromag_ratio` = 0.000000024d8
- $s^{-1} T^{-1}$
- `real(real64)`, parameter `shielded_helion_gyromag_ratio_in_mhz_t` = 32.43409942d0
- MHz T<sup>-1</sup>.*
- `real(real64)`, parameter `u_shielded_helion_gyromag_ratio_in_mhz_t` = 0.00000038d0
- MHz T<sup>-1</sup>.*
- `real(real64)`, parameter `shielded_helion_mag_mom` = -1.074553090d-26
- J T<sup>-1</sup>.*
- `real(real64)`, parameter `u_shielded_helion_mag_mom` = 0.000000013d-26
- J T<sup>-1</sup>.*
- `real(real64)`, parameter `shielded_helion_mag_mom_to_bohr_magneton_ratio` = -1.158671471d-3
- `real(real64)`, parameter `u_shielded_helion_mag_mom_to_bohr_magneton_ratio` = 0.000000014d-3
- `real(real64)`, parameter `shielded_helion_mag_mom_to_nuclear_magneton_ratio` = -2.127497719d0
- `real(real64)`, parameter `u_shielded_helion_mag_mom_to_nuclear_magneton_ratio` = 0.000000025d0
- `real(real64)`, parameter `shielded_helion_to_proton_mag_mom_ratio` = -0.7617665618d0
- `real(real64)`, parameter `u_shielded_helion_to_proton_mag_mom_ratio` = 0.0000000089d0
- `real(real64)`, parameter `shielded_helion_to_shielded_proton_mag_mom_ratio` = -0.7617861313d0
- `real(real64)`, parameter `u_shielded_helion_to_shielded_proton_mag_mom_ratio` = 0.0000000033d0
- `real(real64)`, parameter `shielded_proton_gyromag_ratio` = 2.675153151d8
- $s^{-1} T^{-1}$
- `real(real64)`, parameter `u_shielded_proton_gyromag_ratio` = 0.000000029d8
- $s^{-1} T^{-1}$
- `real(real64)`, parameter `shielded_proton_gyromag_ratio_in_mhz_t` = 42.57638474d0
- MHz T<sup>-1</sup>.*
- `real(real64)`, parameter `u_shielded_proton_gyromag_ratio_in_mhz_t` = 0.00000046d0
- MHz T<sup>-1</sup>.*
- `real(real64)`, parameter `shielded_proton_mag_mom` = 1.410570560d-26
- J T<sup>-1</sup>.*
- `real(real64)`, parameter `u_shielded_proton_mag_mom` = 0.000000015d-26
- J T<sup>-1</sup>.*
- `real(real64)`, parameter `shielded_proton_mag_mom_to_bohr_magneton_ratio` = 1.520993128d-3
- `real(real64)`, parameter `u_shielded_proton_mag_mom_to_bohr_magneton_ratio` = 0.000000017d-3
- `real(real64)`, parameter `shielded_proton_mag_mom_to_nuclear_magneton_ratio` = 2.792775599d0

- `real(real64)`, parameter `u_shielded_proton_mag_mom_to_nuclear_magneton_ratio` =0.000000030d0
- `real(real64)`, parameter `shielding_difference_of_d_and_p_in_hd` =2.0200d-8
- `real(real64)`, parameter `u_shielding_difference_of_d_and_p_in_hd` =0.0020d-8
- `real(real64)`, parameter `shielding_difference_of_t_and_p_in_ht` =2.4140d-8
- `real(real64)`, parameter `u_shielding_difference_of_t_and_p_in_ht` =0.0020d-8
- `real(real64)`, parameter `speed_of_light_in_vacuum` =299792458.0d0  
 $m\ s^{-1}$
- `real(real64)`, parameter `u_speed_of_light_in_vacuum` =0.0d0  
 $m\ s^{-1}$
- `real(real64)`, parameter `standard_acceleration_of_gravity` =9.80665d0  
 $m\ s^{-2}$
- `real(real64)`, parameter `u_standard_acceleration_of_gravity` =0.0d0  
 $m\ s^{-2}$
- `real(real64)`, parameter `standard_atmosphere` =101325.0d0  
*Pa.*
- `real(real64)`, parameter `u_standard_atmosphere` =0.0d0  
*Pa.*
- `real(real64)`, parameter `standard_state_pressure` =100000.0d0  
*Pa.*
- `real(real64)`, parameter `u_standard_state_pressure` =0.0d0  
*Pa.*
- `real(real64)`, parameter `stefan_boltzmann_constant` =5.670374419d-8  
 $W\ m^{-2}\ K^{-4}$ .
- `real(real64)`, parameter `u_stefan_boltzmann_constant` =0.0d0  
 $W\ m^{-2}\ K^{-4}$ .
- `real(real64)`, parameter `tau_compton_wavelength` =6.97771d-16  
*m*
- `real(real64)`, parameter `u_tau_compton_wavelength` =0.00047d-16  
*m*
- `real(real64)`, parameter `tau_electron_mass_ratio` =3477.23d0
- `real(real64)`, parameter `u_tau_electron_mass_ratio` =0.23d0
- `real(real64)`, parameter `tau_energy_equivalent` =1776.86d0  
*MeV.*
- `real(real64)`, parameter `u_tau_energy_equivalent` =0.12d0  
*MeV.*
- `real(real64)`, parameter `tau_mass` =3.16754d-27  
*kg*
- `real(real64)`, parameter `u_tau_mass` =0.00021d-27  
*kg*
- `real(real64)`, parameter `tau_mass_energy_equivalent` =2.84684d-10  
*J.*
- `real(real64)`, parameter `u_tau_mass_energy_equivalent` =0.00019d-10  
*J.*
- `real(real64)`, parameter `tau_mass_in_u` =1.90754d0  
*u*
- `real(real64)`, parameter `u_tau_mass_in_u` =0.00013d0  
*u*
- `real(real64)`, parameter `tau_molar_mass` =1.90754d-3  
 $kg\ mol^{-1}$
- `real(real64)`, parameter `u_tau_molar_mass` =0.00013d-3  
 $kg\ mol^{-1}$

- real(real64), parameter `tau_muon_mass_ratio` =16.8170d0
- real(real64), parameter `u_tau_muon_mass_ratio` =0.0011d0
- real(real64), parameter `tau_neutron_mass_ratio` =1.89115d0
- real(real64), parameter `u_tau_neutron_mass_ratio` =0.00013d0
- real(real64), parameter `tau_proton_mass_ratio` =1.89376d0
- real(real64), parameter `u_tau_proton_mass_ratio` =0.00013d0
- real(real64), parameter `thomson_cross_section` =6.6524587321d-29  
 $m^2$
- real(real64), parameter `u_thomson_cross_section` =0.0000000060d-29  
 $m^2$
- real(real64), parameter `triton_electron_mass_ratio` =5496.92153573d0
- real(real64), parameter `u_triton_electron_mass_ratio` =0.00000027d0
- real(real64), parameter `triton_g_factor` =5.957924931d0
- real(real64), parameter `u_triton_g_factor` =0.000000012d0
- real(real64), parameter `triton_mag__mom` =1.5046095202d-26  
 $J T^{-1}$ .
- real(real64), parameter `u_triton_mag__mom` =0.0000000030d-26  
 $J T^{-1}$ .
- real(real64), parameter `triton_mag__mom_to_bohr_magneton_ratio` =1.6223936651d-3
- real(real64), parameter `u_triton_mag__mom_to_bohr_magneton_ratio` =0.0000000032d-3
- real(real64), parameter `triton_mag__mom_to_nuclear_magneton_ratio` =2.9789624656d0
- real(real64), parameter `u_triton_mag__mom_to_nuclear_magneton_ratio` =0.0000000059d0
- real(real64), parameter `triton_mass` =5.0073567446d-27  
 $kg$
- real(real64), parameter `u_triton_mass` =0.0000000015d-27  
 $kg$
- real(real64), parameter `triton_mass_energy_equivalent` =4.5003878060d-10  
 $J$ .
- real(real64), parameter `u_triton_mass_energy_equivalent` =0.0000000014d-10  
 $J$ .
- real(real64), parameter `triton_mass_energy_equivalent_in_mev` =2808.92113298d0  
 $MeV$ .
- real(real64), parameter `u_triton_mass_energy_equivalent_in_mev` =0.000000085d0  
 $MeV$ .
- real(real64), parameter `triton_mass_in_u` =3.01550071621d0  
 $u$
- real(real64), parameter `u_triton_mass_in_u` =0.00000000012d0  
 $u$
- real(real64), parameter `triton_molar_mass` =3.01550071517d-3  
 $kg mol^{-1}$
- real(real64), parameter `u_triton_molar_mass` =0.00000000092d-3  
 $kg mol^{-1}$
- real(real64), parameter `triton_proton_mass_ratio` =2.99371703414d0
- real(real64), parameter `u_triton_proton_mass_ratio` =0.00000000015d0
- real(real64), parameter `triton_relative_atomic_mass` =3.01550071621d0
- real(real64), parameter `u_triton_relative_atomic_mass` =0.00000000012d0
- real(real64), parameter `triton_to_proton_mag__mom_ratio` =1.0666399191d0
- real(real64), parameter `u_triton_to_proton_mag__mom_ratio` =0.0000000021d0
- real(real64), parameter `unified_atomic_mass_unit` =1.66053906660d-27  
 $kg$
- real(real64), parameter `u_unified_atomic_mass_unit` =0.00000000050d-27  
 $kg$

- `real(real64)`, parameter `vacuum_electric_permittivity` = 8.8541878128d-12  
 $F m^{-1}$ .
- `real(real64)`, parameter `u_vacuum_electric_permittivity` = 0.0000000013d-12  
 $F m^{-1}$ .
- `real(real64)`, parameter `vacuum_mag__permeability` = 1.25663706212d-6  
 $N A^{-2}$ .
- `real(real64)`, parameter `u_vacuum_mag__permeability` = 0.00000000019d-6  
 $N A^{-2}$ .
- `real(real64)`, parameter `von_klitzing_constant` = 25812.80745d0  
 $ohm$
- `real(real64)`, parameter `u_von_klitzing_constant` = 0.0d0  
 $ohm$
- `real(real64)`, parameter `weak_mixing_angle` = 0.22290d0
- `real(real64)`, parameter `u_weak_mixing_angle` = 0.00030d0
- `real(real64)`, parameter `wien_frequency_displacement_law_constant` = 5.878925757d10  
 $Hz K^{-1}$ .
- `real(real64)`, parameter `u_wien_frequency_displacement_law_constant` = 0.0d0  
 $Hz K^{-1}$ .
- `real(real64)`, parameter `wien_wavelength_displacement_law_constant` = 2.897771955d-3  
 $m K$
- `real(real64)`, parameter `u_wien_wavelength_displacement_law_constant` = 0.0d0  
 $m K$
- `real(real64)`, parameter `w_to_z_mass_ratio` = 0.88153d0
- `real(real64)`, parameter `u_w_to_z_mass_ratio` = 0.00017d0

### 15.1.1 Detailed Description

Codata constants - autogenerated.

### 15.1.2 Variable Documentation

#### 15.1.2.1 `alpha_particle_electron_mass_ratio`

```
real(real64), parameter codata::alpha_particle_electron_mass_ratio = 7294.29954142d0
```

Definition at line 10 of file [fcodata.f90](#).

#### 15.1.2.2 `alpha_particle_mass`

```
real(real64), parameter codata::alpha_particle_mass = 6.6446573357d-27
```

kg

Definition at line 15 of file [fcodata.f90](#).

### 15.1.2.3 alpha\_particle\_mass\_energy\_equivalent

```
real(real64), parameter codata::alpha_particle_mass_energy_equivalent =5.9719201914d-10
```

J.

Definition at line 20 of file [fcodata.f90](#).

### 15.1.2.4 alpha\_particle\_mass\_energy\_equivalent\_in\_mev

```
real(real64), parameter codata::alpha_particle_mass_energy_equivalent_in_mev =3727.3794066d0
```

MeV.

Definition at line 25 of file [fcodata.f90](#).

### 15.1.2.5 alpha\_particle\_mass\_in\_u

```
real(real64), parameter codata::alpha_particle_mass_in_u =4.001506179127d0
```

u

Definition at line 30 of file [fcodata.f90](#).

### 15.1.2.6 alpha\_particle\_molar\_mass

```
real(real64), parameter codata::alpha_particle_molar_mass =4.0015061777d-3
```

kg mol<sup>-1</sup>

Definition at line 35 of file [fcodata.f90](#).

### 15.1.2.7 alpha\_particle\_proton\_mass\_ratio

```
real(real64), parameter codata::alpha_particle_proton_mass_ratio =3.97259969009d0
```

Definition at line 40 of file [fcodata.f90](#).

### 15.1.2.8 alpha\_particle\_relative\_atomic\_mass

```
real(real64), parameter codata::alpha_particle_relative_atomic_mass =4.001506179127d0
```

Definition at line 45 of file [fcodata.f90](#).

### 15.1.2.9 angstrom\_star

```
real(real64), parameter codata::angstrom_star =1.00001495d-10
```

m

Definition at line 50 of file [fcodata.f90](#).

### 15.1.2.10 atomic\_mass\_constant

```
real(real64), parameter codata::atomic_mass_constant =1.66053906660d-27
```

kg

Definition at line 55 of file [fcodata.f90](#).

### 15.1.2.11 atomic\_mass\_constant\_energy\_equivalent

```
real(real64), parameter codata::atomic_mass_constant_energy_equivalent =1.49241808560d-10
```

J.

Definition at line 60 of file [fcodata.f90](#).

### 15.1.2.12 atomic\_mass\_constant\_energy\_equivalent\_in\_mev

```
real(real64), parameter codata::atomic_mass_constant_energy_equivalent_in_mev =931.49410242d0
```

MeV.

Definition at line 65 of file [fcodata.f90](#).

#### 15.1.2.13 atomic\_mass\_unit\_electron\_volt\_relationship

```
real(real64), parameter codata::atomic_mass_unit_electron_volt_relationship =9.3149410242d8
```

eV

Definition at line 70 of file [fcodata.f90](#).

#### 15.1.2.14 atomic\_mass\_unit\_hartree\_relationship

```
real(real64), parameter codata::atomic_mass_unit_hartree_relationship =3.4231776874d7
```

E<sub>h</sub>.

Definition at line 75 of file [fcodata.f90](#).

#### 15.1.2.15 atomic\_mass\_unit\_hertz\_relationship

```
real(real64), parameter codata::atomic_mass_unit_hertz_relationship =2.25234271871d23
```

Hz.

Definition at line 80 of file [fcodata.f90](#).

#### 15.1.2.16 atomic\_mass\_unit\_inverse\_meter\_relationship

```
real(real64), parameter codata::atomic_mass_unit_inverse_meter_relationship =7.5130066104d14
```

m<sup>-1</sup>

Definition at line 85 of file [fcodata.f90](#).

#### 15.1.2.17 atomic\_mass\_unit\_joule\_relationship

```
real(real64), parameter codata::atomic_mass_unit_joule_relationship =1.49241808560d-10
```

J.

Definition at line 90 of file [fcodata.f90](#).



#### 15.1.2.18 atomic\_mass\_unit\_kelvin\_relationship

```
real(real64), parameter codata::atomic_mass_unit_kelvin_relationship =1.08095401916d13
```

K.

Definition at line 95 of file [fcodata.f90](#).

#### 15.1.2.19 atomic\_mass\_unit\_kilogram\_relationship

```
real(real64), parameter codata::atomic_mass_unit_kilogram_relationship =1.66053906660d-27
```

kg

Definition at line 100 of file [fcodata.f90](#).

#### 15.1.2.20 atomic\_unit\_of\_1st\_hyperpolarizability

```
real(real64), parameter codata::atomic_unit_of_1st_hyperpolarizability =3.2063613061d-53
```

$C^3 m^3 J^{-2}$ .

Definition at line 105 of file [fcodata.f90](#).

#### 15.1.2.21 atomic\_unit\_of\_2nd\_hyperpolarizability

```
real(real64), parameter codata::atomic_unit_of_2nd_hyperpolarizability =6.2353799905d-65
```

$C^4 m^4 J^{-3}$ .

Definition at line 110 of file [fcodata.f90](#).

#### 15.1.2.22 atomic\_unit\_of\_action

```
real(real64), parameter codata::atomic_unit_of_action =1.054571817d-34
```

J s.

Definition at line 115 of file [fcodata.f90](#).

#### 15.1.2.23 atomic\_unit\_of\_charge

```
real(real64), parameter codata::atomic_unit_of_charge =1.602176634d-19
```

C.

Definition at line 120 of file [fcodata.f90](#).

#### 15.1.2.24 atomic\_unit\_of\_charge\_density

```
real(real64), parameter codata::atomic_unit_of_charge_density =1.08120238457d12
```

C m<sup>-3</sup>.

Definition at line 125 of file [fcodata.f90](#).

#### 15.1.2.25 atomic\_unit\_of\_current

```
real(real64), parameter codata::atomic_unit_of_current =6.623618237510d-3
```

A.

Definition at line 130 of file [fcodata.f90](#).

#### 15.1.2.26 atomic\_unit\_of\_electric\_dipole\_mom

```
real(real64), parameter codata::atomic_unit_of_electric_dipole_mom =8.4783536255d-30
```

C m.

Definition at line 135 of file [fcodata.f90](#).

#### 15.1.2.27 atomic\_unit\_of\_electric\_field

```
real(real64), parameter codata::atomic_unit_of_electric_field =5.14220674763d11
```

V m<sup>-1</sup>.

Definition at line 140 of file [fcodata.f90](#).

**15.1.2.28 atomic\_unit\_of\_electric\_field\_gradient**

```
real(real64), parameter codata::atomic_unit_of_electric_field_gradient =9.7173624292d21
```

V m<sup>-2</sup>.

Definition at line 145 of file [fcodata.f90](#).

**15.1.2.29 atomic\_unit\_of\_electric\_polarizability**

```
real(real64), parameter codata::atomic_unit_of_electric_polarizability =1.64877727436d-41
```

C<sup>2</sup> m<sup>2</sup> J<sup>-1</sup>.

Definition at line 150 of file [fcodata.f90](#).

**15.1.2.30 atomic\_unit\_of\_electric\_potential**

```
real(real64), parameter codata::atomic_unit_of_electric_potential =27.211386245988d0
```

V.

Definition at line 155 of file [fcodata.f90](#).

**15.1.2.31 atomic\_unit\_of\_electric\_quadrupole\_mom**

```
real(real64), parameter codata::atomic_unit_of_electric_quadrupole_mom =4.4865515246d-40
```

C m<sup>2</sup>.

Definition at line 160 of file [fcodata.f90](#).

**15.1.2.32 atomic\_unit\_of\_energy**

```
real(real64), parameter codata::atomic_unit_of_energy =4.3597447222071d-18
```

J.

Definition at line 165 of file [fcodata.f90](#).

### 15.1.2.33 atomic\_unit\_of\_force

```
real(real64), parameter codata::atomic_unit_of_force =8.2387234983d-8
```

N.

Definition at line 170 of file [fcodata.f90](#).

### 15.1.2.34 atomic\_unit\_of\_length

```
real(real64), parameter codata::atomic_unit_of_length =5.29177210903d-11
```

m

Definition at line 175 of file [fcodata.f90](#).

### 15.1.2.35 atomic\_unit\_of\_mag\_\_dipole\_mom

```
real(real64), parameter codata::atomic_unit_of_mag__dipole_mom =1.85480201566d-23
```

J T<sup>-1</sup>.

Definition at line 180 of file [fcodata.f90](#).

### 15.1.2.36 atomic\_unit\_of\_mag\_\_flux\_density

```
real(real64), parameter codata::atomic_unit_of_mag__flux_density =2.35051756758d5
```

T.

Definition at line 185 of file [fcodata.f90](#).

### 15.1.2.37 atomic\_unit\_of\_magnetizability

```
real(real64), parameter codata::atomic_unit_of_magnetizability =7.8910366008d-29
```

J T<sup>-2</sup>.

Definition at line 190 of file [fcodata.f90](#).

**15.1.2.38 atomic\_unit\_of\_mass**

```
real(real64), parameter codata::atomic_unit_of_mass =9.1093837015d-31
```

kg

Definition at line 195 of file [fcodata.f90](#).

**15.1.2.39 atomic\_unit\_of\_momentum**

```
real(real64), parameter codata::atomic_unit_of_momentum =1.99285191410d-24
```

kg m s<sup>-1</sup>

Definition at line 200 of file [fcodata.f90](#).

**15.1.2.40 atomic\_unit\_of\_permittivity**

```
real(real64), parameter codata::atomic_unit_of_permittivity =1.11265005545d-10
```

F m<sup>-1</sup>.

Definition at line 205 of file [fcodata.f90](#).

**15.1.2.41 atomic\_unit\_of\_time**

```
real(real64), parameter codata::atomic_unit_of_time =2.4188843265857d-17
```

s

Definition at line 210 of file [fcodata.f90](#).

**15.1.2.42 atomic\_unit\_of\_velocity**

```
real(real64), parameter codata::atomic_unit_of_velocity =2.18769126364d6
```

m s<sup>-1</sup>

Definition at line 215 of file [fcodata.f90](#).

#### 15.1.2.43 avogadro\_constant

```
real(real64), parameter codata::avogadro_constant =6.02214076d23
```

$\text{mol}^{-1}$

Definition at line 220 of file [fcodata.f90](#).

#### 15.1.2.44 bohr\_magneton

```
real(real64), parameter codata::bohr_magneton =9.2740100783d-24
```

$\text{J T}^{-1}$ .

Definition at line 225 of file [fcodata.f90](#).

#### 15.1.2.45 bohr\_magneton\_in\_ev\_t

```
real(real64), parameter codata::bohr_magneton_in_ev_t =5.7883818060d-5
```

$\text{eV T}^{-1}$

Definition at line 230 of file [fcodata.f90](#).

#### 15.1.2.46 bohr\_magneton\_in\_hz\_t

```
real(real64), parameter codata::bohr_magneton_in_hz_t =1.39962449361d10
```

$\text{Hz T}^{-1}$ .

Definition at line 235 of file [fcodata.f90](#).

#### 15.1.2.47 bohr\_magneton\_in\_inverse\_meter\_per\_tesla

```
real(real64), parameter codata::bohr_magneton_in_inverse_meter_per_tesla =46.686447783d0
```

$\text{m}^{-1} \text{T}^{-1}$

Definition at line 240 of file [fcodata.f90](#).

#### 15.1.2.48 bohr\_magneton\_in\_k\_t

```
real(real64), parameter codata::bohr_magneton_in_k_t =0.67171381563d0
```

$\text{K T}^{-1}$ .

Definition at line 245 of file [fcodata.f90](#).

#### 15.1.2.49 bohr\_radius

```
real(real64), parameter codata::bohr_radius =5.29177210903d-11
```

m

Definition at line 250 of file [fcodata.f90](#).

#### 15.1.2.50 boltzmann\_constant

```
real(real64), parameter codata::boltzmann_constant =1.380649d-23
```

$\text{J K}^{-1}$ .

Definition at line 255 of file [fcodata.f90](#).

#### 15.1.2.51 boltzmann\_constant\_in\_ev\_k

```
real(real64), parameter codata::boltzmann_constant_in_ev_k =8.617333262d-5
```

$\text{eV K}^{-1}$

Definition at line 260 of file [fcodata.f90](#).

#### 15.1.2.52 boltzmann\_constant\_in\_hz\_k

```
real(real64), parameter codata::boltzmann_constant_in_hz_k =2.083661912d10
```

$\text{Hz K}^{-1}$ .

Definition at line 265 of file [fcodata.f90](#).

#### 15.1.2.53 boltzmann\_constant\_in\_inverse\_meter\_per\_kelvin

```
real(real64), parameter codata::boltzmann_constant_in_inverse_meter_per_kelvin =69.50348004d0
```

$\text{m}^{-1} \text{K}^{-1}$

Definition at line 270 of file [fcodata.f90](#).

#### 15.1.2.54 characteristic\_impedance\_of\_vacuum

```
real(real64), parameter codata::characteristic_impedance_of_vacuum =376.730313668d0
```

ohm

Definition at line 275 of file [fcodata.f90](#).

#### 15.1.2.55 classical\_electron\_radius

```
real(real64), parameter codata::classical_electron_radius =2.8179403262d-15
```

m

Definition at line 280 of file [fcodata.f90](#).

#### 15.1.2.56 compton\_wavelength

```
real(real64), parameter codata::compton_wavelength =2.42631023867d-12
```

m

Definition at line 285 of file [fcodata.f90](#).

#### 15.1.2.57 conductance\_quantum

```
real(real64), parameter codata::conductance_quantum =7.748091729d-5
```

S.

Definition at line 290 of file [fcodata.f90](#).



**15.1.2.58 conventional\_value\_of\_ampere\_90**

```
real(real64), parameter codata::conventional_value_of_ampere_90 =1.00000008887d0
```

A.

Definition at line 295 of file [fcodata.f90](#).

**15.1.2.59 conventional\_value\_of\_coulomb\_90**

```
real(real64), parameter codata::conventional_value_of_coulomb_90 =1.00000008887d0
```

C.

Definition at line 300 of file [fcodata.f90](#).

**15.1.2.60 conventional\_value\_of\_farad\_90**

```
real(real64), parameter codata::conventional_value_of_farad_90 =0.99999998220d0
```

F.

Definition at line 305 of file [fcodata.f90](#).

**15.1.2.61 conventional\_value\_of\_henry\_90**

```
real(real64), parameter codata::conventional_value_of_henry_90 =1.00000001779d0
```

H.

Definition at line 310 of file [fcodata.f90](#).

**15.1.2.62 conventional\_value\_of\_josephson\_constant**

```
real(real64), parameter codata::conventional_value_of_josephson_constant =483597.9d9
```

Hz V<sup>-1</sup>.

Definition at line 315 of file [fcodata.f90](#).

#### 15.1.2.63 conventional\_value\_of\_ohm\_90

```
real(real64), parameter codata::conventional_value_of_ohm_90 =1.00000001779d0
```

ohm

Definition at line 320 of file [fcodata.f90](#).

#### 15.1.2.64 conventional\_value\_of\_volt\_90

```
real(real64), parameter codata::conventional_value_of_volt_90 =1.000000010666d0
```

V.

Definition at line 325 of file [fcodata.f90](#).

#### 15.1.2.65 conventional\_value\_of\_von\_klitzing\_constant

```
real(real64), parameter codata::conventional_value_of_von_klitzing_constant =25812.807d0
```

ohm

Definition at line 330 of file [fcodata.f90](#).

#### 15.1.2.66 conventional\_value\_of\_watt\_90

```
real(real64), parameter codata::conventional_value_of_watt_90 =1.000000019553d0
```

W.

Definition at line 335 of file [fcodata.f90](#).

#### 15.1.2.67 copper\_x\_unit

```
real(real64), parameter codata::copper_x_unit =1.00207697d-13
```

m

Definition at line 340 of file [fcodata.f90](#).

**15.1.2.68 deuteron\_electron\_mag\_\_mom\_\_ratio**

```
real(real64), parameter codata::deuteron_electron_mag__mom__ratio ==-4.664345551d-4
```

Definition at line 345 of file [fcodata.f90](#).

**15.1.2.69 deuteron\_electron\_mass\_ratio**

```
real(real64), parameter codata::deuteron_electron_mass_ratio =3670.48296788d0
```

Definition at line 350 of file [fcodata.f90](#).

**15.1.2.70 deuteron\_g\_factor**

```
real(real64), parameter codata::deuteron_g_factor =0.8574382338d0
```

Definition at line 355 of file [fcodata.f90](#).

**15.1.2.71 deuteron\_mag\_\_mom**

```
real(real64), parameter codata::deuteron_mag__mom =4.330735094d-27
```

$J T^{-1}$ .

Definition at line 360 of file [fcodata.f90](#).

**15.1.2.72 deuteron\_mag\_\_mom\_\_to\_bohr\_magneton\_ratio**

```
real(real64), parameter codata::deuteron_mag__mom__to_bohr_magneton_ratio =4.669754570d-4
```

Definition at line 365 of file [fcodata.f90](#).

**15.1.2.73 deuteron\_mag\_\_mom\_\_to\_nuclear\_magneton\_ratio**

```
real(real64), parameter codata::deuteron_mag__mom__to_nuclear_magneton_ratio =0.8574382338d0
```

Definition at line 370 of file [fcodata.f90](#).

#### 15.1.2.74 `deuteron_mass`

```
real(real64), parameter codata::deuteron_mass =3.3435837724d-27
```

kg

Definition at line 375 of file [fcodata.f90](#).

#### 15.1.2.75 `deuteron_mass_energy_equivalent`

```
real(real64), parameter codata::deuteron_mass_energy_equivalent =3.00506323102d-10
```

J.

Definition at line 380 of file [fcodata.f90](#).

#### 15.1.2.76 `deuteron_mass_energy_equivalent_in_mev`

```
real(real64), parameter codata::deuteron_mass_energy_equivalent_in_mev =1875.61294257d0
```

MeV.

Definition at line 385 of file [fcodata.f90](#).

#### 15.1.2.77 `deuteron_mass_in_u`

```
real(real64), parameter codata::deuteron_mass_in_u =2.013553212745d0
```

u

Definition at line 390 of file [fcodata.f90](#).

#### 15.1.2.78 `deuteron_molar_mass`

```
real(real64), parameter codata::deuteron_molar_mass =2.01355321205d-3
```

kg mol<sup>-1</sup>

Definition at line 395 of file [fcodata.f90](#).

**15.1.2.79 deuteron\_neutron\_mag\_\_mom\_\_ratio**

```
real(real64), parameter codata::deuteron_neutron_mag__mom__ratio =-0.44820653d0
```

Definition at line 400 of file [fcodata.f90](#).

**15.1.2.80 deuteron\_proton\_mag\_\_mom\_\_ratio**

```
real(real64), parameter codata::deuteron_proton_mag__mom__ratio =0.30701220939d0
```

Definition at line 405 of file [fcodata.f90](#).

**15.1.2.81 deuteron\_proton\_mass\_ratio**

```
real(real64), parameter codata::deuteron_proton_mass_ratio =1.99900750139d0
```

Definition at line 410 of file [fcodata.f90](#).

**15.1.2.82 deuteron\_relative\_atomic\_mass**

```
real(real64), parameter codata::deuteron_relative_atomic_mass =2.013553212745d0
```

Definition at line 415 of file [fcodata.f90](#).

**15.1.2.83 deuteron\_rms\_charge\_radius**

```
real(real64), parameter codata::deuteron_rms_charge_radius =2.12799d-15
```

m

Definition at line 420 of file [fcodata.f90](#).

**15.1.2.84 electron\_charge\_to\_mass\_quotient**

```
real(real64), parameter codata::electron_charge_to_mass_quotient =-1.75882001076d11
```

C kg<sup>-1</sup>.

Definition at line 425 of file [fcodata.f90](#).

#### 15.1.2.85 electron\_deuteron\_mag\_\_mom\_\_ratio

```
real(real64), parameter codata::electron_deuteron_mag__mom__ratio =-2143.9234915d0
```

Definition at line 430 of file [fcodata.f90](#).

#### 15.1.2.86 electron\_deuteron\_mass\_ratio

```
real(real64), parameter codata::electron_deuteron_mass_ratio =2.724437107462d-4
```

Definition at line 435 of file [fcodata.f90](#).

#### 15.1.2.87 electron\_g\_factor

```
real(real64), parameter codata::electron_g_factor =-2.00231930436256d0
```

Definition at line 440 of file [fcodata.f90](#).

#### 15.1.2.88 electron\_gyromag\_\_ratio

```
real(real64), parameter codata::electron_gyromag__ratio =1.76085963023d11
```

$\text{s}^{-1} \text{T}^{-1}$

Definition at line 445 of file [fcodata.f90](#).

#### 15.1.2.89 electron\_gyromag\_\_ratio\_in\_mhz\_t

```
real(real64), parameter codata::electron_gyromag__ratio_in_mhz_t =28024.9514242d0
```

$\text{MHz T}^{-1}$ .

Definition at line 450 of file [fcodata.f90](#).

#### 15.1.2.90 electron\_helion\_mass\_ratio

```
real(real64), parameter codata::electron_helion_mass_ratio =1.819543074573d-4
```

Definition at line 455 of file [fcodata.f90](#).

**15.1.2.91 electron\_mag\_\_mom**

```
real(real64), parameter codata::electron_mag__mom =-9.2847647043d-24
```

$J T^{-1}$ .

Definition at line 460 of file [fcodata.f90](#).

**15.1.2.92 electron\_mag\_\_mom\_\_anomaly**

```
real(real64), parameter codata::electron_mag__mom__anomaly =1.15965218128d-3
```

Definition at line 465 of file [fcodata.f90](#).

**15.1.2.93 electron\_mag\_\_mom\_\_to\_bohr\_magneton\_ratio**

```
real(real64), parameter codata::electron_mag__mom__to_bohr_magneton_ratio =-1.00115965218128d0
```

Definition at line 470 of file [fcodata.f90](#).

**15.1.2.94 electron\_mag\_\_mom\_\_to\_nuclear\_magneton\_ratio**

```
real(real64), parameter codata::electron_mag__mom__to_nuclear_magneton_ratio =-1838.28197188d0
```

Definition at line 475 of file [fcodata.f90](#).

**15.1.2.95 electron\_mass**

```
real(real64), parameter codata::electron_mass =9.1093837015d-31
```

kg

Definition at line 480 of file [fcodata.f90](#).

**15.1.2.96 electron\_mass\_energy\_equivalent**

```
real(real64), parameter codata::electron_mass_energy_equivalent =8.1871057769d-14
```

J.

Definition at line 485 of file [fcodata.f90](#).

#### 15.1.2.97 electron\_mass\_energy\_equivalent\_in\_mev

```
real(real64), parameter codata::electron_mass_energy_equivalent_in_mev =0.51099895000d0
```

MeV.

Definition at line 490 of file [fcodata.f90](#).

#### 15.1.2.98 electron\_mass\_in\_u

```
real(real64), parameter codata::electron_mass_in_u =5.48579909065d-4
```

u

Definition at line 495 of file [fcodata.f90](#).

#### 15.1.2.99 electron\_molar\_mass

```
real(real64), parameter codata::electron_molar_mass =5.4857990888d-7
```

kg mol<sup>-1</sup>

Definition at line 500 of file [fcodata.f90](#).

#### 15.1.2.100 electron\_muon\_mag\_\_mom\_\_ratio

```
real(real64), parameter codata::electron_muon_mag__mom__ratio =206.7669883d0
```

Definition at line 505 of file [fcodata.f90](#).

#### 15.1.2.101 electron\_muon\_mass\_ratio

```
real(real64), parameter codata::electron_muon_mass_ratio =4.83633169d-3
```

Definition at line 510 of file [fcodata.f90](#).



**15.1.2.102 electron\_neutron\_mag\_\_mom\_\_ratio**

```
real(real64), parameter codata::electron_neutron_mag__mom__ratio =960.92050d0
```

Definition at line 515 of file [fcodata.f90](#).

**15.1.2.103 electron\_neutron\_mass\_ratio**

```
real(real64), parameter codata::electron_neutron_mass_ratio =5.4386734424d-4
```

Definition at line 520 of file [fcodata.f90](#).

**15.1.2.104 electron\_proton\_mag\_\_mom\_\_ratio**

```
real(real64), parameter codata::electron_proton_mag__mom__ratio =-658.21068789d0
```

Definition at line 525 of file [fcodata.f90](#).

**15.1.2.105 electron\_proton\_mass\_ratio**

```
real(real64), parameter codata::electron_proton_mass_ratio =5.44617021487d-4
```

Definition at line 530 of file [fcodata.f90](#).

**15.1.2.106 electron\_relative\_atomic\_mass**

```
real(real64), parameter codata::electron_relative_atomic_mass =5.48579909065d-4
```

Definition at line 535 of file [fcodata.f90](#).

**15.1.2.107 electron\_tau\_mass\_ratio**

```
real(real64), parameter codata::electron_tau_mass_ratio =2.87585d-4
```

Definition at line 540 of file [fcodata.f90](#).

**15.1.2.108 electron\_to\_alpha\_particle\_mass\_ratio**

```
real(real64), parameter codata::electron_to_alpha_particle_mass_ratio =1.370933554787d-4
```

Definition at line 545 of file [fcodata.f90](#).

**15.1.2.109 electron\_to\_shielded\_helion\_mag\_\_mom\_\_ratio**

```
real(real64), parameter codata::electron_to_shielded_helion_mag__mom__ratio =864.058257d0
```

Definition at line 550 of file [fcodata.f90](#).

**15.1.2.110 electron\_to\_shielded\_proton\_mag\_\_mom\_\_ratio**

```
real(real64), parameter codata::electron_to_shielded_proton_mag__mom__ratio =-658.2275971d0
```

Definition at line 555 of file [fcodata.f90](#).

**15.1.2.111 electron\_triton\_mass\_ratio**

```
real(real64), parameter codata::electron_triton_mass_ratio =1.819200062251d-4
```

Definition at line 560 of file [fcodata.f90](#).

**15.1.2.112 electron\_volt**

```
real(real64), parameter codata::electron_volt =1.602176634d-19
```

J.

Definition at line 565 of file [fcodata.f90](#).

**15.1.2.113 electron\_volt\_atomic\_mass\_unit\_relationship**

```
real(real64), parameter codata::electron_volt_atomic_mass_unit_relationship =1.07354410233d-9
```

u

Definition at line 570 of file [fcodata.f90](#).

**15.1.2.114 electron\_volt\_hartree\_relationship**

```
real(real64), parameter codata::electron_volt_hartree_relationship =3.6749322175655d-2
```

E<sub>h</sub>.

Definition at line 575 of file [fcodata.f90](#).

**15.1.2.115 electron\_volt\_hertz\_relationship**

```
real(real64), parameter codata::electron_volt_hertz_relationship =2.417989242d14
```

Hz.

Definition at line 580 of file [fcodata.f90](#).

**15.1.2.116 electron\_volt\_inverse\_meter\_relationship**

```
real(real64), parameter codata::electron_volt_inverse_meter_relationship =8.065543937d5
```

m<sup>-1</sup>

Definition at line 585 of file [fcodata.f90](#).

**15.1.2.117 electron\_volt\_joule\_relationship**

```
real(real64), parameter codata::electron_volt_joule_relationship =1.602176634d-19
```

J.

Definition at line 590 of file [fcodata.f90](#).

**15.1.2.118 electron\_volt\_kelvin\_relationship**

```
real(real64), parameter codata::electron_volt_kelvin_relationship =1.160451812d4
```

K.

Definition at line 595 of file [fcodata.f90](#).

**15.1.2.119 electron\_volt\_kilogram\_relationship**

```
real(real64), parameter codata::electron_volt_kilogram_relationship =1.782661921d-36
```

kg

Definition at line 600 of file [fcodata.f90](#).

**15.1.2.120 elementary\_charge**

```
real(real64), parameter codata::elementary_charge =1.602176634d-19
```

C.

Definition at line 605 of file [fcodata.f90](#).

**15.1.2.121 elementary\_charge\_over\_h\_bar**

```
real(real64), parameter codata::elementary_charge_over_h_bar =1.519267447d15
```

A J<sup>-1</sup>.

Definition at line 610 of file [fcodata.f90](#).

**15.1.2.122 faraday\_constant**

```
real(real64), parameter codata::faraday_constant =96485.33212d0
```

C mol<sup>-1</sup>.

Definition at line 615 of file [fcodata.f90](#).

**15.1.2.123 fermi\_coupling\_constant**

```
real(real64), parameter codata::fermi_coupling_constant =1.1663787d-5
```

GeV<sup>-2</sup>.

Definition at line 620 of file [fcodata.f90](#).

**15.1.2.124 fine\_structure\_constant**

```
real(real64), parameter codata::fine_structure_constant =7.2973525693d-3
```

Definition at line 625 of file [fcodata.f90](#).

**15.1.2.125 first\_radiation\_constant**

```
real(real64), parameter codata::first_radiation_constant =3.741771852d-16
```

W m<sup>2</sup>.

Definition at line 630 of file [fcodata.f90](#).

**15.1.2.126 first\_radiation\_constant\_for\_spectral\_radiance**

```
real(real64), parameter codata::first_radiation_constant_for_spectral_radiance =1.191042972d-16
```

W m<sup>2</sup> sr<sup>-1</sup>.

Definition at line 635 of file [fcodata.f90](#).

**15.1.2.127 hartree\_atomic\_mass\_unit\_relationship**

```
real(real64), parameter codata::hartree_atomic_mass_unit_relationship =2.92126232205d-8
```

u

Definition at line 640 of file [fcodata.f90](#).

**15.1.2.128 hartree\_electron\_volt\_relationship**

```
real(real64), parameter codata::hartree_electron_volt_relationship =27.211386245988d0
```

eV

Definition at line 645 of file [fcodata.f90](#).

#### 15.1.2.129 hartree\_energy

```
real(real64), parameter codata::hartree_energy =4.3597447222071d-18
```

J.

Definition at line 650 of file [fcodata.f90](#).

#### 15.1.2.130 hartree\_energy\_in\_ev

```
real(real64), parameter codata::hartree_energy_in_ev =27.211386245988d0
```

eV

Definition at line 655 of file [fcodata.f90](#).

#### 15.1.2.131 hartree\_hertz\_relationship

```
real(real64), parameter codata::hartree_hertz_relationship =6.579683920502d15
```

Hz.

Definition at line 660 of file [fcodata.f90](#).

#### 15.1.2.132 hartree\_inverse\_meter\_relationship

```
real(real64), parameter codata::hartree_inverse_meter_relationship =2.1947463136320d7
```

m<sup>-1</sup>

Definition at line 665 of file [fcodata.f90](#).

#### 15.1.2.133 hartree\_joule\_relationship

```
real(real64), parameter codata::hartree_joule_relationship =4.3597447222071d-18
```

J.

Definition at line 670 of file [fcodata.f90](#).

**15.1.2.134 hartree\_kelvin\_relationship**

```
real(real64), parameter codata::hartree_kelvin_relationship =3.1577502480407d5
```

K.

Definition at line 675 of file [fcodata.f90](#).

**15.1.2.135 hartree\_kilogram\_relationship**

```
real(real64), parameter codata::hartree_kilogram_relationship =4.8508702095432d-35
```

kg

Definition at line 680 of file [fcodata.f90](#).

**15.1.2.136 helion\_electron\_mass\_ratio**

```
real(real64), parameter codata::helion_electron_mass_ratio =5495.88528007d0
```

Definition at line 685 of file [fcodata.f90](#).

**15.1.2.137 helion\_g\_factor**

```
real(real64), parameter codata::helion_g_factor =-4.255250615d0
```

Definition at line 690 of file [fcodata.f90](#).

**15.1.2.138 helion\_mag\_\_mom**

```
real(real64), parameter codata::helion_mag__mom =-1.074617532d-26
```

J T<sup>-1</sup>.

Definition at line 695 of file [fcodata.f90](#).

**15.1.2.139 helion\_mag\_\_mom\_\_to\_bohr\_magneton\_ratio**

```
real(real64), parameter codata::helion_mag__mom__to_bohr_magneton_ratio =-1.158740958d-3
```

Definition at line 700 of file [fcodata.f90](#).

**15.1.2.140 helion\_mag\_\_mom\_\_to\_nuclear\_magneton\_ratio**

```
real(real64), parameter codata::helion_mag__mom__to_nuclear_magneton_ratio =-2.127625307d0
```

Definition at line 705 of file [fcodata.f90](#).

**15.1.2.141 helion\_mass**

```
real(real64), parameter codata::helion_mass =5.0064127796d-27
```

kg

Definition at line 710 of file [fcodata.f90](#).

**15.1.2.142 helion\_mass\_energy\_equivalent**

```
real(real64), parameter codata::helion_mass_energy_equivalent =4.4995394125d-10
```

J.

Definition at line 715 of file [fcodata.f90](#).

**15.1.2.143 helion\_mass\_energy\_equivalent\_in\_mev**

```
real(real64), parameter codata::helion_mass_energy_equivalent_in_mev =2808.39160743d0
```

MeV.

Definition at line 720 of file [fcodata.f90](#).



**15.1.2.144 helion\_mass\_in\_u**

```
real(real64), parameter codata::helion_mass_in_u =3.014932247175d0
```

u

Definition at line 725 of file [fcodata.f90](#).

**15.1.2.145 helion\_molar\_mass**

```
real(real64), parameter codata::helion_molar_mass =3.01493224613d-3
```

kg mol<sup>-1</sup>

Definition at line 730 of file [fcodata.f90](#).

**15.1.2.146 helion\_proton\_mass\_ratio**

```
real(real64), parameter codata::helion_proton_mass_ratio =2.99315267167d0
```

Definition at line 735 of file [fcodata.f90](#).

**15.1.2.147 helion\_relative\_atomic\_mass**

```
real(real64), parameter codata::helion_relative_atomic_mass =3.014932247175d0
```

Definition at line 740 of file [fcodata.f90](#).

**15.1.2.148 helion\_shielding\_shift**

```
real(real64), parameter codata::helion_shielding_shift =5.996743d-5
```

Definition at line 745 of file [fcodata.f90](#).

**15.1.2.149 hertz\_atomic\_mass\_unit\_relationship**

```
real(real64), parameter codata::hertz_atomic_mass_unit_relationship =4.4398216652d-24
```

u

Definition at line 750 of file [fcodata.f90](#).

**15.1.2.150 hertz\_electron\_volt\_relationship**

```
real(real64), parameter codata::hertz_electron_volt_relationship =4.135667696d-15
```

eV

Definition at line 755 of file [fcodata.f90](#).

**15.1.2.151 hertz\_hartree\_relationship**

```
real(real64), parameter codata::hertz_hartree_relationship =1.5198298460570d-16
```

E<sub>h</sub>.

Definition at line 760 of file [fcodata.f90](#).

**15.1.2.152 hertz\_inverse\_meter\_relationship**

```
real(real64), parameter codata::hertz_inverse_meter_relationship =3.335640951d-9
```

m<sup>-1</sup>

Definition at line 765 of file [fcodata.f90](#).

**15.1.2.153 hertz\_joule\_relationship**

```
real(real64), parameter codata::hertz_joule_relationship =6.62607015d-34
```

J.

Definition at line 770 of file [fcodata.f90](#).

**15.1.2.154 hertz\_kelvin\_relationship**

```
real(real64), parameter codata::hertz_kelvin_relationship =4.799243073d-11
```

K.

Definition at line 775 of file [fcodata.f90](#).

**15.1.2.155 hertz\_kilogram\_relationship**

```
real(real64), parameter codata::hertz_kilogram_relationship =7.372497323d-51
```

kg

Definition at line 780 of file [fcodata.f90](#).

**15.1.2.156 hyperfine\_transition\_frequency\_of\_cs\_133**

```
real(real64), parameter codata::hyperfine_transition_frequency_of_cs_133 =9192631770.0d0
```

Hz.

Definition at line 785 of file [fcodata.f90](#).

**15.1.2.157 inverse\_fine\_structure\_constant**

```
real(real64), parameter codata::inverse_fine_structure_constant =137.035999084d0
```

Definition at line 790 of file [fcodata.f90](#).

**15.1.2.158 inverse\_meter\_atomic\_mass\_unit\_relationship**

```
real(real64), parameter codata::inverse_meter_atomic_mass_unit_relationship =1.33102505010d-15
```

u

Definition at line 795 of file [fcodata.f90](#).

**15.1.2.159 inverse\_meter\_electron\_volt\_relationship**

```
real(real64), parameter codata::inverse_meter_electron_volt_relationship =1.239841984d-6
```

eV

Definition at line 800 of file [fcodata.f90](#).

**15.1.2.160 inverse\_meter\_hartree\_relationship**

```
real(real64), parameter codata::inverse_meter_hartree_relationship =4.5563352529120d-8
```

E<sub>h</sub>.

Definition at line 805 of file [fcodata.f90](#).

**15.1.2.161 inverse\_meter\_hertz\_relationship**

```
real(real64), parameter codata::inverse_meter_hertz_relationship =299792458.0d0
```

Hz.

Definition at line 810 of file [fcodata.f90](#).

**15.1.2.162 inverse\_meter\_joule\_relationship**

```
real(real64), parameter codata::inverse_meter_joule_relationship =1.986445857d-25
```

J.

Definition at line 815 of file [fcodata.f90](#).

**15.1.2.163 inverse\_meter\_kelvin\_relationship**

```
real(real64), parameter codata::inverse_meter_kelvin_relationship =1.438776877d-2
```

K.

Definition at line 820 of file [fcodata.f90](#).

**15.1.2.164 inverse\_meter\_kilogram\_relationship**

```
real(real64), parameter codata::inverse_meter_kilogram_relationship =2.210219094d-42
```

kg

Definition at line 825 of file [fcodata.f90](#).

**15.1.2.165 inverse\_of\_conductance\_quantum**

```
real(real64), parameter codata::inverse_of_conductance_quantum =12906.40372d0
```

ohm

Definition at line 830 of file [fcodata.f90](#).

**15.1.2.166 josephson\_constant**

```
real(real64), parameter codata::josephson_constant =483597.8484d9
```

Hz V<sup>-1</sup>.

Definition at line 835 of file [fcodata.f90](#).

**15.1.2.167 joule\_atomic\_mass\_unit\_relationship**

```
real(real64), parameter codata::joule_atomic_mass_unit_relationship =6.7005352565d9
```

u

Definition at line 840 of file [fcodata.f90](#).

**15.1.2.168 joule\_electron\_volt\_relationship**

```
real(real64), parameter codata::joule_electron_volt_relationship =6.241509074d18
```

eV

Definition at line 845 of file [fcodata.f90](#).

**15.1.2.169 joule\_hartree\_relationship**

```
real(real64), parameter codata::joule_hartree_relationship =2.2937122783963d17
```

E<sub>h</sub>.

Definition at line 850 of file [fcodata.f90](#).

**15.1.2.170 joule\_hertz\_relationship**

```
real(real64), parameter codata::joule_hertz_relationship =1.509190179d33
```

Hz.

Definition at line 855 of file [fcodata.f90](#).

**15.1.2.171 joule\_inverse\_meter\_relationship**

```
real(real64), parameter codata::joule_inverse_meter_relationship =5.034116567d24
```

$\text{m}^{-1}$

Definition at line 860 of file [fcodata.f90](#).

**15.1.2.172 joule\_kelvin\_relationship**

```
real(real64), parameter codata::joule_kelvin_relationship =7.242970516d22
```

K.

Definition at line 865 of file [fcodata.f90](#).

**15.1.2.173 joule\_kilogram\_relationship**

```
real(real64), parameter codata::joule_kilogram_relationship =1.112650056d-17
```

kg

Definition at line 870 of file [fcodata.f90](#).

**15.1.2.174 kelvin\_atomic\_mass\_unit\_relationship**

```
real(real64), parameter codata::kelvin_atomic_mass_unit_relationship =9.2510873014d-14
```

u

Definition at line 875 of file [fcodata.f90](#).

**15.1.2.175 kelvin\_electron\_volt\_relationship**

```
real(real64), parameter codata::kelvin_electron_volt_relationship =8.617333262d-5
```

eV

Definition at line 880 of file [fcodata.f90](#).

**15.1.2.176 kelvin\_hartree\_relationship**

```
real(real64), parameter codata::kelvin_hartree_relationship =3.1668115634556d-6
```

E<sub>h</sub>.

Definition at line 885 of file [fcodata.f90](#).

**15.1.2.177 kelvin\_hertz\_relationship**

```
real(real64), parameter codata::kelvin_hertz_relationship =2.083661912d10
```

Hz.

Definition at line 890 of file [fcodata.f90](#).

**15.1.2.178 kelvin\_inverse\_meter\_relationship**

```
real(real64), parameter codata::kelvin_inverse_meter_relationship =69.50348004d0
```

m<sup>-1</sup>

Definition at line 895 of file [fcodata.f90](#).

**15.1.2.179 kelvin\_joule\_relationship**

```
real(real64), parameter codata::kelvin_joule_relationship =1.380649d-23
```

J.

Definition at line 900 of file [fcodata.f90](#).

**15.1.2.180 kelvin\_kilogram\_relationship**

```
real(real64), parameter codata::kelvin_kilogram_relationship =1.536179187d-40
```

kg

Definition at line 905 of file [fcodata.f90](#).

**15.1.2.181 kilogram\_atomic\_mass\_unit\_relationship**

```
real(real64), parameter codata::kilogram_atomic_mass_unit_relationship =6.0221407621d26
```

u

Definition at line 910 of file [fcodata.f90](#).

**15.1.2.182 kilogram\_electron\_volt\_relationship**

```
real(real64), parameter codata::kilogram_electron_volt_relationship =5.609588603d35
```

eV

Definition at line 915 of file [fcodata.f90](#).

**15.1.2.183 kilogram\_hartree\_relationship**

```
real(real64), parameter codata::kilogram_hartree_relationship =2.0614857887409d34
```

E<sub>h</sub>.

Definition at line 920 of file [fcodata.f90](#).

**15.1.2.184 kilogram\_hertz\_relationship**

```
real(real64), parameter codata::kilogram_hertz_relationship =1.356392489d50
```

Hz.

Definition at line 925 of file [fcodata.f90](#).



**15.1.2.185 kilogram\_inverse\_meter\_relationship**

```
real(real64), parameter codata::kilogram_inverse_meter_relationship =4.524438335d41
```

$\text{m}^{-1}$

Definition at line 930 of file [fcodata.f90](#).

**15.1.2.186 kilogram\_joule\_relationship**

```
real(real64), parameter codata::kilogram_joule_relationship =8.987551787d16
```

J.

Definition at line 935 of file [fcodata.f90](#).

**15.1.2.187 kilogram\_kelvin\_relationship**

```
real(real64), parameter codata::kilogram_kelvin_relationship =6.509657260d39
```

K.

Definition at line 940 of file [fcodata.f90](#).

**15.1.2.188 lattice\_parameter\_of\_silicon**

```
real(real64), parameter codata::lattice_parameter_of_silicon =5.431020511d-10
```

m

Definition at line 945 of file [fcodata.f90](#).

**15.1.2.189 lattice\_spacing\_of\_ideal\_si\_\_220**

```
real(real64), parameter codata::lattice_spacing_of_ideal_si__220 =1.920155716d-10
```

m

Definition at line 950 of file [fcodata.f90](#).

**15.1.2.190 loschmidt\_constant\_\_273\_15\_k\_\_100\_kpa**

```
real(real64), parameter codata::loschmidt_constant__273_15_k__100_kpa =2.651645804d25
```

$\text{m}^{-3}$

Definition at line 955 of file [fcodata.f90](#).

**15.1.2.191 loschmidt\_constant\_\_273\_15\_k\_\_101\_325\_kpa**

```
real(real64), parameter codata::loschmidt_constant__273_15_k__101_325_kpa =2.686780111d25
```

$\text{m}^{-3}$

Definition at line 960 of file [fcodata.f90](#).

**15.1.2.192 luminous\_efficacy**

```
real(real64), parameter codata::luminous_efficacy =683.0d0
```

$\text{lm W}^{-1}$

Definition at line 965 of file [fcodata.f90](#).

**15.1.2.193 mag\_flux\_quantum**

```
real(real64), parameter codata::mag_flux_quantum =2.067833848d-15
```

$\text{Wb}$ .

Definition at line 970 of file [fcodata.f90](#).

**15.1.2.194 molar\_gas\_constant**

```
real(real64), parameter codata::molar_gas_constant =8.314462618d0
```

$\text{J mol}^{-1} \text{K}^{-1}$ .

Definition at line 975 of file [fcodata.f90](#).

**15.1.2.195 molar\_mass\_constant**

```
real(real64), parameter codata::molar_mass_constant =0.99999999965d-3
```

kg mol<sup>-1</sup>

Definition at line 980 of file [fcodata.f90](#).

**15.1.2.196 molar\_mass\_of\_carbon\_12**

```
real(real64), parameter codata::molar_mass_of_carbon_12 =11.9999999958d-3
```

kg mol<sup>-1</sup>

Definition at line 985 of file [fcodata.f90](#).

**15.1.2.197 molar\_planck\_constant**

```
real(real64), parameter codata::molar_planck_constant =3.990312712d-10
```

J Hz<sup>-1</sup> mol<sup>-1</sup>.

Definition at line 990 of file [fcodata.f90](#).

**15.1.2.198 molar\_volume\_of\_ideal\_gas\_273\_15\_k\_100\_kpa**

```
real(real64), parameter codata::molar_volume_of_ideal_gas_273_15_k_100_kpa =22.71095464d-3
```

m<sup>3</sup> mol<sup>-1</sup>

Definition at line 995 of file [fcodata.f90](#).

**15.1.2.199 molar\_volume\_of\_ideal\_gas\_273\_15\_k\_101\_325\_kpa**

```
real(real64), parameter codata::molar_volume_of_ideal_gas_273_15_k_101_325_kpa =22.41396954d-3
```

m<sup>3</sup> mol<sup>-1</sup>

Definition at line 1000 of file [fcodata.f90](#).

**15.1.2.200 molar\_volume\_of\_silicon**

```
real(real64), parameter codata::molar_volume_of_silicon =1.205883199d-5
```

$\text{m}^3 \text{mol}^{-1}$

Definition at line 1005 of file [fcodata.f90](#).

**15.1.2.201 molybdenum\_x\_unit**

```
real(real64), parameter codata::molybdenum_x_unit =1.00209952d-13
```

m

Definition at line 1010 of file [fcodata.f90](#).

**15.1.2.202 muon\_compton\_wavelength**

```
real(real64), parameter codata::muon_compton_wavelength =1.173444110d-14
```

m

Definition at line 1015 of file [fcodata.f90](#).

**15.1.2.203 muon\_electron\_mass\_ratio**

```
real(real64), parameter codata::muon_electron_mass_ratio =206.7682830d0
```

Definition at line 1020 of file [fcodata.f90](#).

**15.1.2.204 muon\_g\_factor**

```
real(real64), parameter codata::muon_g_factor =-2.0023318418d0
```

Definition at line 1025 of file [fcodata.f90](#).

**15.1.2.205 muon\_mag\_\_mom**

```
real(real64), parameter codata::muon_mag__mom ==-4.49044830d-26
```

$J T^{-1}$ .

Definition at line 1030 of file [fcodata.f90](#).

**15.1.2.206 muon\_mag\_\_mom\_\_anomaly**

```
real(real64), parameter codata::muon_mag__mom__anomaly =1.16592089d-3
```

Definition at line 1035 of file [fcodata.f90](#).

**15.1.2.207 muon\_mag\_\_mom\_\_to\_bohr\_magneton\_ratio**

```
real(real64), parameter codata::muon_mag__mom__to_bohr_magneton_ratio ==-4.84197047d-3
```

Definition at line 1040 of file [fcodata.f90](#).

**15.1.2.208 muon\_mag\_\_mom\_\_to\_nuclear\_magneton\_ratio**

```
real(real64), parameter codata::muon_mag__mom__to_nuclear_magneton_ratio ==-8.89059703d0
```

Definition at line 1045 of file [fcodata.f90](#).

**15.1.2.209 muon\_mass**

```
real(real64), parameter codata::muon_mass =1.883531627d-28
```

kg

Definition at line 1050 of file [fcodata.f90](#).

**15.1.2.210 muon\_mass\_energy\_equivalent**

```
real(real64), parameter codata::muon_mass_energy_equivalent =1.692833804d-11
```

J.

Definition at line 1055 of file [fcodata.f90](#).

**15.1.2.211 muon\_mass\_energy\_equivalent\_in\_mev**

```
real(real64), parameter codata::muon_mass_energy_equivalent_in_mev =105.6583755d0
```

MeV.

Definition at line 1060 of file [fcodata.f90](#).

**15.1.2.212 muon\_mass\_in\_u**

```
real(real64), parameter codata::muon_mass_in_u =0.1134289259d0
```

u

Definition at line 1065 of file [fcodata.f90](#).

**15.1.2.213 muon\_molar\_mass**

```
real(real64), parameter codata::muon_molar_mass =1.134289259d-4
```

kg mol<sup>-1</sup>

Definition at line 1070 of file [fcodata.f90](#).

**15.1.2.214 muon\_neutron\_mass\_ratio**

```
real(real64), parameter codata::muon_neutron_mass_ratio =0.1124545170d0
```

Definition at line 1075 of file [fcodata.f90](#).

**15.1.2.215 muon\_proton\_mag\_\_mom\_\_ratio**

```
real(real64), parameter codata::muon_proton_mag__mom__ratio =-3.183345142d0
```

Definition at line 1080 of file [fcodata.f90](#).

**15.1.2.216 muon\_proton\_mass\_ratio**

```
real(real64), parameter codata::muon_proton_mass_ratio =0.1126095264d0
```

Definition at line 1085 of file [fcodata.f90](#).

**15.1.2.217 muon\_tau\_mass\_ratio**

```
real(real64), parameter codata::muon_tau_mass_ratio =5.94635d-2
```

Definition at line 1090 of file [fcodata.f90](#).

**15.1.2.218 natural\_unit\_of\_action**

```
real(real64), parameter codata::natural_unit_of_action =1.054571817d-34
```

J s.

Definition at line 1095 of file [fcodata.f90](#).

**15.1.2.219 natural\_unit\_of\_action\_in\_ev\_s**

```
real(real64), parameter codata::natural_unit_of_action_in_ev_s =6.582119569d-16
```

eV s

Definition at line 1100 of file [fcodata.f90](#).

**15.1.2.220 natural\_unit\_of\_energy**

```
real(real64), parameter codata::natural_unit_of_energy =8.1871057769d-14
```

J.

Definition at line 1105 of file [fcodata.f90](#).

**15.1.2.221 natural\_unit\_of\_energy\_in\_mev**

```
real(real64), parameter codata::natural_unit_of_energy_in_mev =0.51099895000d0
```

MeV.

Definition at line 1110 of file [fcodata.f90](#).

**15.1.2.222 natural\_unit\_of\_length**

```
real(real64), parameter codata::natural_unit_of_length =3.8615926796d-13
```

m

Definition at line 1115 of file [fcodata.f90](#).

**15.1.2.223 natural\_unit\_of\_mass**

```
real(real64), parameter codata::natural_unit_of_mass =9.1093837015d-31
```

kg

Definition at line 1120 of file [fcodata.f90](#).

**15.1.2.224 natural\_unit\_of\_momentum**

```
real(real64), parameter codata::natural_unit_of_momentum =2.73092453075d-22
```

kg m s<sup>-1</sup>

Definition at line 1125 of file [fcodata.f90](#).

**15.1.2.225 natural\_unit\_of\_momentum\_in\_mev\_c**

```
real(real64), parameter codata::natural_unit_of_momentum_in_mev_c =0.51099895000d0
```

MeV/c.

Definition at line 1130 of file [fcodata.f90](#).



**15.1.2.226 natural\_unit\_of\_time**

```
real(real64), parameter codata::natural_unit_of_time =1.28808866819d-21
```

s

Definition at line 1135 of file [fcodata.f90](#).

**15.1.2.227 natural\_unit\_of\_velocity**

```
real(real64), parameter codata::natural_unit_of_velocity =299792458.0d0
```

m s<sup>-1</sup>

Definition at line 1140 of file [fcodata.f90](#).

**15.1.2.228 neutron\_compton\_wavelength**

```
real(real64), parameter codata::neutron_compton_wavelength =1.31959090581d-15
```

m

Definition at line 1145 of file [fcodata.f90](#).

**15.1.2.229 neutron\_electron\_mag\_mom\_ratio**

```
real(real64), parameter codata::neutron_electron_mag_mom_ratio =1.04066882d-3
```

Definition at line 1150 of file [fcodata.f90](#).

**15.1.2.230 neutron\_electron\_mass\_ratio**

```
real(real64), parameter codata::neutron_electron_mass_ratio =1838.68366173d0
```

Definition at line 1155 of file [fcodata.f90](#).

**15.1.2.231 neutron\_g\_factor**

```
real(real64), parameter codata::neutron_g_factor =-3.82608545d0
```

Definition at line 1160 of file [fcodata.f90](#).

**15.1.2.232 neutron\_gyromag\_\_ratio**

```
real(real64), parameter codata::neutron_gyromag__ratio =1.83247171d8
```

$\text{s}^{-1} \text{T}^{-1}$

Definition at line 1165 of file [fcodata.f90](#).

**15.1.2.233 neutron\_gyromag\_\_ratio\_in\_mhz\_t**

```
real(real64), parameter codata::neutron_gyromag__ratio_in_mhz_t =29.1646931d0
```

$\text{MHz T}^{-1}$ .

Definition at line 1170 of file [fcodata.f90](#).

**15.1.2.234 neutron\_mag\_\_mom**

```
real(real64), parameter codata::neutron_mag__mom =-9.6623651d-27
```

$\text{J T}^{-1}$ .

Definition at line 1175 of file [fcodata.f90](#).

**15.1.2.235 neutron\_mag\_\_mom\_\_to\_bohr\_magneton\_ratio**

```
real(real64), parameter codata::neutron_mag__mom__to_bohr_magneton_ratio =-1.04187563d-3
```

Definition at line 1180 of file [fcodata.f90](#).

**15.1.2.236 neutron\_mag\_mom\_to\_nuclear\_magneton\_ratio**

```
real(real64), parameter codata::neutron_mag_mom_to_nuclear_magneton_ratio ==-1.91304273d0
```

Definition at line 1185 of file [fcodata.f90](#).

**15.1.2.237 neutron\_mass**

```
real(real64), parameter codata::neutron_mass =1.67492749804d-27
```

kg

Definition at line 1190 of file [fcodata.f90](#).

**15.1.2.238 neutron\_mass\_energy\_equivalent**

```
real(real64), parameter codata::neutron_mass_energy_equivalent =1.50534976287d-10
```

J.

Definition at line 1195 of file [fcodata.f90](#).

**15.1.2.239 neutron\_mass\_energy\_equivalent\_in\_mev**

```
real(real64), parameter codata::neutron_mass_energy_equivalent_in_mev =939.56542052d0
```

MeV.

Definition at line 1200 of file [fcodata.f90](#).

**15.1.2.240 neutron\_mass\_in\_u**

```
real(real64), parameter codata::neutron_mass_in_u =1.00866491595d0
```

u

Definition at line 1205 of file [fcodata.f90](#).

**15.1.2.241 neutron\_molar\_mass**

```
real(real64), parameter codata::neutron_molar_mass =1.00866491560d-3
```

kg mol<sup>-1</sup>

Definition at line 1210 of file [fcodata.f90](#).

**15.1.2.242 neutron\_muon\_mass\_ratio**

```
real(real64), parameter codata::neutron_muon_mass_ratio =8.89248406d0
```

Definition at line 1215 of file [fcodata.f90](#).

**15.1.2.243 neutron\_proton\_mag\_\_mom\_\_ratio**

```
real(real64), parameter codata::neutron_proton_mag__mom__ratio =-0.68497934d0
```

Definition at line 1220 of file [fcodata.f90](#).

**15.1.2.244 neutron\_proton\_mass\_difference**

```
real(real64), parameter codata::neutron_proton_mass_difference =2.30557435d-30
```

kg

Definition at line 1225 of file [fcodata.f90](#).

**15.1.2.245 neutron\_proton\_mass\_difference\_energy\_equivalent**

```
real(real64), parameter codata::neutron_proton_mass_difference_energy_equivalent =2.07214689d-13
```

J.

Definition at line 1230 of file [fcodata.f90](#).

**15.1.2.246 neutron\_proton\_mass\_difference\_energy\_equivalent\_in\_mev**

```
real(real64), parameter codata::neutron_proton_mass_difference_energy_equivalent_in_mev =1.↵  
29333236d0
```

MeV.

Definition at line 1235 of file [fcodata.f90](#).

**15.1.2.247 neutron\_proton\_mass\_difference\_in\_u**

```
real(real64), parameter codata::neutron_proton_mass_difference_in_u =1.38844933d-3  
  
u
```

Definition at line 1240 of file [fcodata.f90](#).

**15.1.2.248 neutron\_proton\_mass\_ratio**

```
real(real64), parameter codata::neutron_proton_mass_ratio =1.00137841931d0
```

Definition at line 1245 of file [fcodata.f90](#).

**15.1.2.249 neutron\_relative\_atomic\_mass**

```
real(real64), parameter codata::neutron_relative_atomic_mass =1.00866491595d0
```

Definition at line 1250 of file [fcodata.f90](#).

**15.1.2.250 neutron\_tau\_mass\_ratio**

```
real(real64), parameter codata::neutron_tau_mass_ratio =0.528779d0
```

Definition at line 1255 of file [fcodata.f90](#).

**15.1.2.251 neutron\_to\_shielded\_proton\_mag\_\_mom\_\_ratio**

```
real(real64), parameter codata::neutron_to_shielded_proton_mag__mom__ratio =-0.68499694d0
```

Definition at line 1260 of file [fcodata.f90](#).

**15.1.2.252 newtonian\_constant\_of\_gravitation**

```
real(real64), parameter codata::newtonian_constant_of_gravitation =6.67430d-11
```

$\text{m}^3 \text{kg}^{-1} \text{s}^{-2}$

Definition at line 1265 of file [fcodata.f90](#).

**15.1.2.253 newtonian\_constant\_of\_gravitation\_over\_h\_bar\_c**

```
real(real64), parameter codata::newtonian_constant_of_gravitation_over_h_bar_c =6.70883d-39
```

$(\text{GeV}/c^2)^{-2}$

Definition at line 1270 of file [fcodata.f90](#).

**15.1.2.254 nuclear\_magneton**

```
real(real64), parameter codata::nuclear_magneton =5.0507837461d-27
```

$\text{J T}^{-1}$ .

Definition at line 1275 of file [fcodata.f90](#).

**15.1.2.255 nuclear\_magneton\_in\_ev\_t**

```
real(real64), parameter codata::nuclear_magneton_in_ev_t =3.15245125844d-8
```

$\text{eV T}^{-1}$

Definition at line 1280 of file [fcodata.f90](#).

**15.1.2.256 nuclear\_magneton\_in\_inverse\_meter\_per\_tesla**

```
real(real64), parameter codata::nuclear_magneton_in_inverse_meter_per_tesla =2.54262341353d-2
```

$\text{m}^{-1} \text{T}^{-1}$

Definition at line 1285 of file [fcodata.f90](#).

**15.1.2.257 nuclear\_magneton\_in\_k\_t**

```
real(real64), parameter codata::nuclear_magneton_in_k_t =3.6582677756d-4
```

K T<sup>-1</sup>.

Definition at line 1290 of file [fcodata.f90](#).

**15.1.2.258 nuclear\_magneton\_in\_mhz\_t**

```
real(real64), parameter codata::nuclear_magneton_in_mhz_t =7.6225932291d0
```

MHz T<sup>-1</sup>.

Definition at line 1295 of file [fcodata.f90](#).

**15.1.2.259 planck\_constant**

```
real(real64), parameter codata::planck_constant =6.62607015d-34
```

J Hz<sup>-1</sup>.

Definition at line 1300 of file [fcodata.f90](#).

**15.1.2.260 planck\_constant\_in\_ev\_hz**

```
real(real64), parameter codata::planck_constant_in_ev_hz =4.135667696d-15
```

eV Hz<sup>-1</sup>

Definition at line 1305 of file [fcodata.f90](#).

**15.1.2.261 planck\_length**

```
real(real64), parameter codata::planck_length =1.616255d-35
```

m

Definition at line 1310 of file [fcodata.f90](#).

**15.1.2.262 planck\_mass**

```
real(real64), parameter codata::planck_mass =2.176434d-8
```

kg

Definition at line 1315 of file [fcodata.f90](#).

**15.1.2.263 planck\_mass\_energy\_equivalent\_in\_gev**

```
real(real64), parameter codata::planck_mass_energy_equivalent_in_gev =1.220890d19
```

GeV.

Definition at line 1320 of file [fcodata.f90](#).

**15.1.2.264 planck\_temperature**

```
real(real64), parameter codata::planck_temperature =1.416784d32
```

K.

Definition at line 1325 of file [fcodata.f90](#).

**15.1.2.265 planck\_time**

```
real(real64), parameter codata::planck_time =5.391247d-44
```

s

Definition at line 1330 of file [fcodata.f90](#).

**15.1.2.266 proton\_charge\_to\_mass\_quotient**

```
real(real64), parameter codata::proton_charge_to_mass_quotient =9.5788331560d7
```

C kg<sup>-1</sup>.

Definition at line 1335 of file [fcodata.f90](#).



**15.1.2.267 proton\_compton\_wavelength**

```
real(real64), parameter codata::proton_compton_wavelength =1.32140985539d-15  
m
```

Definition at line 1340 of file [fcodata.f90](#).

**15.1.2.268 proton\_electron\_mass\_ratio**

```
real(real64), parameter codata::proton_electron_mass_ratio =1836.15267343d0
```

Definition at line 1345 of file [fcodata.f90](#).

**15.1.2.269 proton\_g\_factor**

```
real(real64), parameter codata::proton_g_factor =5.5856946893d0
```

Definition at line 1350 of file [fcodata.f90](#).

**15.1.2.270 proton\_gyromag\_\_ratio**

```
real(real64), parameter codata::proton_gyromag__ratio =2.6752218744d8
```

$\text{s}^{-1} \text{T}^{-1}$

Definition at line 1355 of file [fcodata.f90](#).

**15.1.2.271 proton\_gyromag\_\_ratio\_in\_mhz\_t**

```
real(real64), parameter codata::proton_gyromag__ratio_in_mhz_t =42.577478518d0
```

MHz  $\text{T}^{-1}$ .

Definition at line 1360 of file [fcodata.f90](#).

**15.1.2.272 proton\_mag\_\_mom**

```
real(real64), parameter codata::proton_mag__mom =1.41060679736d-26
```

$J T^{-1}$ .

Definition at line 1365 of file [fcodata.f90](#).

**15.1.2.273 proton\_mag\_\_mom\_\_to\_bohr\_magneton\_ratio**

```
real(real64), parameter codata::proton_mag__mom__to_bohr_magneton_ratio =1.52103220230d-3
```

Definition at line 1370 of file [fcodata.f90](#).

**15.1.2.274 proton\_mag\_\_mom\_\_to\_nuclear\_magneton\_ratio**

```
real(real64), parameter codata::proton_mag__mom__to_nuclear_magneton_ratio =2.79284734463d0
```

Definition at line 1375 of file [fcodata.f90](#).

**15.1.2.275 proton\_mag\_\_shielding\_correction**

```
real(real64), parameter codata::proton_mag__shielding_correction =2.5689d-5
```

Definition at line 1380 of file [fcodata.f90](#).

**15.1.2.276 proton\_mass**

```
real(real64), parameter codata::proton_mass =1.67262192369d-27
```

kg

Definition at line 1385 of file [fcodata.f90](#).

**15.1.2.277 proton\_mass\_energy\_equivalent**

```
real(real64), parameter codata::proton_mass_energy_equivalent =1.50327761598d-10
```

J.

Definition at line 1390 of file [fcodata.f90](#).

**15.1.2.278 proton\_mass\_energy\_equivalent\_in\_mev**

```
real(real64), parameter codata::proton_mass_energy_equivalent_in_mev =938.27208816d0
```

MeV.

Definition at line 1395 of file [fcodata.f90](#).

**15.1.2.279 proton\_mass\_in\_u**

```
real(real64), parameter codata::proton_mass_in_u =1.007276466621d0
```

u

Definition at line 1400 of file [fcodata.f90](#).

**15.1.2.280 proton\_molar\_mass**

```
real(real64), parameter codata::proton_molar_mass =1.00727646627d-3
```

kg mol<sup>-1</sup>

Definition at line 1405 of file [fcodata.f90](#).

**15.1.2.281 proton\_muon\_mass\_ratio**

```
real(real64), parameter codata::proton_muon_mass_ratio =8.88024337d0
```

Definition at line 1410 of file [fcodata.f90](#).

**15.1.2.282 proton\_neutron\_mag\_\_mom\_\_ratio**

```
real(real64), parameter codata::proton_neutron_mag__mom__ratio =-1.45989805d0
```

Definition at line 1415 of file [fcodata.f90](#).

**15.1.2.283 proton\_neutron\_mass\_ratio**

```
real(real64), parameter codata::proton_neutron_mass_ratio =0.99862347812d0
```

Definition at line 1420 of file [fcodata.f90](#).

**15.1.2.284 proton\_relative\_atomic\_mass**

```
real(real64), parameter codata::proton_relative_atomic_mass =1.007276466621d0
```

Definition at line 1425 of file [fcodata.f90](#).

**15.1.2.285 proton\_rms\_charge\_radius**

```
real(real64), parameter codata::proton_rms_charge_radius =8.414d-16
```

m

Definition at line 1430 of file [fcodata.f90](#).

**15.1.2.286 proton\_tau\_mass\_ratio**

```
real(real64), parameter codata::proton_tau_mass_ratio =0.528051d0
```

Definition at line 1435 of file [fcodata.f90](#).

**15.1.2.287 quantum\_of\_circulation**

```
real(real64), parameter codata::quantum_of_circulation =3.6369475516d-4
```

$\text{m}^2 \text{s}^{-1}$

Definition at line 1440 of file [fcodata.f90](#).

**15.1.2.288 quantum\_of\_circulation\_times\_2**

```
real(real64), parameter codata::quantum_of_circulation_times_2 =7.2738951032d-4
```

$\text{m}^2 \text{s}^{-1}$

Definition at line 1445 of file [fcodata.f90](#).

**15.1.2.289 reduced\_compton\_wavelength**

```
real(real64), parameter codata::reduced_compton_wavelength =3.8615926796d-13
```

m

Definition at line 1450 of file [fcodata.f90](#).

**15.1.2.290 reduced\_muon\_compton\_wavelength**

```
real(real64), parameter codata::reduced_muon_compton_wavelength =1.867594306d-15
```

m

Definition at line 1455 of file [fcodata.f90](#).

**15.1.2.291 reduced\_neutron\_compton\_wavelength**

```
real(real64), parameter codata::reduced_neutron_compton_wavelength =2.1001941552d-16
```

m

Definition at line 1460 of file [fcodata.f90](#).

**15.1.2.292 reduced\_planck\_constant**

```
real(real64), parameter codata::reduced_planck_constant =1.054571817d-34
```

J s.

Definition at line 1465 of file [fcodata.f90](#).

**15.1.2.293 reduced\_planck\_constant\_in\_ev\_s**

```
real(real64), parameter codata::reduced_planck_constant_in_ev_s =6.582119569d-16
```

eV s

Definition at line 1470 of file [fcodata.f90](#).

**15.1.2.294 reduced\_planck\_constant\_times\_c\_in\_mev\_fm**

```
real(real64), parameter codata::reduced_planck_constant_times_c_in_mev_fm =197.3269804d0
```

MeV fm.

Definition at line 1475 of file [fcodata.f90](#).

**15.1.2.295 reduced\_proton\_compton\_wavelength**

```
real(real64), parameter codata::reduced_proton_compton_wavelength =2.10308910336d-16
```

m

Definition at line 1480 of file [fcodata.f90](#).

**15.1.2.296 reduced\_tau\_compton\_wavelength**

```
real(real64), parameter codata::reduced_tau_compton_wavelength =1.110538d-16
```

m

Definition at line 1485 of file [fcodata.f90](#).

**15.1.2.297 rydberg\_constant**

```
real(real64), parameter codata::rydberg_constant =10973731.568160d0
```

m<sup>-1</sup>

Definition at line 1490 of file [fcodata.f90](#).

**15.1.2.298 rydberg\_constant\_times\_c\_in\_hz**

```
real(real64), parameter codata::rydberg_constant_times_c_in_hz =3.2898419602508d15
```

Hz.

Definition at line 1495 of file [fcodata.f90](#).

**15.1.2.299 rydberg\_constant\_times\_hc\_in\_ev**

```
real(real64), parameter codata::rydberg_constant_times_hc_in_ev =13.605693122994d0
```

eV

Definition at line 1500 of file [fcodata.f90](#).

**15.1.2.300 rydberg\_constant\_times\_hc\_in\_j**

```
real(real64), parameter codata::rydberg_constant_times_hc_in_j =2.1798723611035d-18
```

J.

Definition at line 1505 of file [fcodata.f90](#).

**15.1.2.301 sackur\_tetrode\_constant\_\_1\_k\_\_100\_kpa**

```
real(real64), parameter codata::sackur_tetrode_constant__1_k__100_kpa =-1.15170753706d0
```

Definition at line 1510 of file [fcodata.f90](#).

**15.1.2.302 sackur\_tetrode\_constant\_\_1\_k\_\_101\_325\_kpa**

```
real(real64), parameter codata::sackur_tetrode_constant__1_k__101_325_kpa =-1.16487052358d0
```

Definition at line 1515 of file [fcodata.f90](#).

**15.1.2.303 second\_radiation\_constant**

```
real(real64), parameter codata::second_radiation_constant =1.438776877d-2
```

m K

Definition at line 1520 of file [fcodata.f90](#).

**15.1.2.304 shielded\_helion\_gyromag\_\_ratio**

```
real(real64), parameter codata::shielded_helion_gyromag__ratio =2.037894569d8
```

$\text{s}^{-1} \text{T}^{-1}$

Definition at line 1525 of file [fcodata.f90](#).

**15.1.2.305 shielded\_helion\_gyromag\_\_ratio\_in\_mhz\_t**

```
real(real64), parameter codata::shielded_helion_gyromag__ratio_in_mhz_t =32.43409942d0
```

$\text{MHz T}^{-1}$ .

Definition at line 1530 of file [fcodata.f90](#).

**15.1.2.306 shielded\_helion\_mag\_\_mom**

```
real(real64), parameter codata::shielded_helion_mag__mom =-1.074553090d-26
```

$\text{J T}^{-1}$ .

Definition at line 1535 of file [fcodata.f90](#).

**15.1.2.307 shielded\_helion\_mag\_\_mom\_\_to\_bohr\_magneton\_ratio**

```
real(real64), parameter codata::shielded_helion_mag__mom__to_bohr_magneton_ratio =-1.158671471d-3
```

Definition at line 1540 of file [fcodata.f90](#).

**15.1.2.308 shielded\_helion\_mag\_\_mom\_\_to\_nuclear\_magneton\_ratio**

```
real(real64), parameter codata::shielded_helion_mag__mom__to_nuclear_magneton_ratio =-2.↵  
127497719d0
```

Definition at line 1545 of file [fcodata.f90](#).



**15.1.2.309 shielded\_helion\_to\_proton\_mag\_\_mom\_\_ratio**

```
real(real64), parameter codata::shielded_helion_to_proton_mag__mom__ratio =-0.7617665618d0
```

Definition at line 1550 of file [fcodata.f90](#).

**15.1.2.310 shielded\_helion\_to\_shielded\_proton\_mag\_\_mom\_\_ratio**

```
real(real64), parameter codata::shielded_helion_to_shielded_proton_mag__mom__ratio =-0.↵  
7617861313d0
```

Definition at line 1555 of file [fcodata.f90](#).

**15.1.2.311 shielded\_proton\_gyromag\_\_ratio**

```
real(real64), parameter codata::shielded_proton_gyromag__ratio =2.675153151d8
```

$\text{s}^{-1} \text{T}^{-1}$

Definition at line 1560 of file [fcodata.f90](#).

**15.1.2.312 shielded\_proton\_gyromag\_\_ratio\_in\_mhz\_t**

```
real(real64), parameter codata::shielded_proton_gyromag__ratio_in_mhz_t =42.57638474d0
```

$\text{MHz T}^{-1}$ .

Definition at line 1565 of file [fcodata.f90](#).

**15.1.2.313 shielded\_proton\_mag\_\_mom**

```
real(real64), parameter codata::shielded_proton_mag__mom =1.410570560d-26
```

$\text{J T}^{-1}$ .

Definition at line 1570 of file [fcodata.f90](#).

**15.1.2.314 shielded\_proton\_mag\_\_mom\_\_to\_bohr\_magneton\_ratio**

```
real(real64), parameter codata::shielded_proton_mag__mom__to_bohr_magneton_ratio =1.520993128d-3
```

Definition at line 1575 of file [fcodata.f90](#).

**15.1.2.315 shielded\_proton\_mag\_\_mom\_\_to\_nuclear\_magneton\_ratio**

```
real(real64), parameter codata::shielded_proton_mag__mom__to_nuclear_magneton_ratio =2.↵  
792775599d0
```

Definition at line 1580 of file [fcodata.f90](#).

**15.1.2.316 shielding\_difference\_of\_d\_and\_p\_in\_hd**

```
real(real64), parameter codata::shielding_difference_of_d_and_p_in_hd =2.0200d-8
```

Definition at line 1585 of file [fcodata.f90](#).

**15.1.2.317 shielding\_difference\_of\_t\_and\_p\_in\_ht**

```
real(real64), parameter codata::shielding_difference_of_t_and_p_in_ht =2.4140d-8
```

Definition at line 1590 of file [fcodata.f90](#).

**15.1.2.318 speed\_of\_light\_in\_vacuum**

```
real(real64), parameter codata::speed_of_light_in_vacuum =299792458.0d0
```

$\text{m s}^{-1}$

Definition at line 1595 of file [fcodata.f90](#).

**15.1.2.319 standard\_acceleration\_of\_gravity**

```
real(real64), parameter codata::standard_acceleration_of_gravity =9.80665d0
```

$\text{m s}^{-2}$

Definition at line 1600 of file [fcodata.f90](#).

**15.1.2.320 standard\_atmosphere**

```
real(real64), parameter codata::standard_atmosphere =101325.0d0
```

Pa.

Definition at line 1605 of file [fcodata.f90](#).

**15.1.2.321 standard\_state\_pressure**

```
real(real64), parameter codata::standard_state_pressure =100000.0d0
```

Pa.

Definition at line 1610 of file [fcodata.f90](#).

**15.1.2.322 stefan\_boltzmann\_constant**

```
real(real64), parameter codata::stefan_boltzmann_constant =5.670374419d-8
```

$\text{W m}^{-2} \text{K}^{-4}$ .

Definition at line 1615 of file [fcodata.f90](#).

**15.1.2.323 tau\_compton\_wavelength**

```
real(real64), parameter codata::tau_compton_wavelength =6.97771d-16
```

m

Definition at line 1620 of file [fcodata.f90](#).

**15.1.2.324 tau\_electron\_mass\_ratio**

```
real(real64), parameter codata::tau_electron_mass_ratio =3477.23d0
```

Definition at line 1625 of file [fcodata.f90](#).

**15.1.2.325 tau\_energy\_equivalent**

```
real(real64), parameter codata::tau_energy_equivalent =1776.86d0
```

MeV.

Definition at line 1630 of file [fcodata.f90](#).

**15.1.2.326 tau\_mass**

```
real(real64), parameter codata::tau_mass =3.16754d-27
```

kg

Definition at line 1635 of file [fcodata.f90](#).

**15.1.2.327 tau\_mass\_energy\_equivalent**

```
real(real64), parameter codata::tau_mass_energy_equivalent =2.84684d-10
```

J.

Definition at line 1640 of file [fcodata.f90](#).

**15.1.2.328 tau\_mass\_in\_u**

```
real(real64), parameter codata::tau_mass_in_u =1.90754d0
```

u

Definition at line 1645 of file [fcodata.f90](#).

**15.1.2.329 tau\_molar\_mass**

```
real(real64), parameter codata::tau_molar_mass =1.90754d-3
```

kg mol<sup>-1</sup>

Definition at line 1650 of file [fcodata.f90](#).

**15.1.2.330 tau\_muon\_mass\_ratio**

```
real(real64), parameter codata::tau_muon_mass_ratio =16.8170d0
```

Definition at line 1655 of file [fcodata.f90](#).

**15.1.2.331 tau\_neutron\_mass\_ratio**

```
real(real64), parameter codata::tau_neutron_mass_ratio =1.89115d0
```

Definition at line 1660 of file [fcodata.f90](#).

**15.1.2.332 tau\_proton\_mass\_ratio**

```
real(real64), parameter codata::tau_proton_mass_ratio =1.89376d0
```

Definition at line 1665 of file [fcodata.f90](#).

**15.1.2.333 thomson\_cross\_section**

```
real(real64), parameter codata::thomson_cross_section =6.6524587321d-29
```

$m^2$

Definition at line 1670 of file [fcodata.f90](#).

**15.1.2.334 triton\_electron\_mass\_ratio**

```
real(real64), parameter codata::triton_electron_mass_ratio =5496.92153573d0
```

Definition at line 1675 of file [fcodata.f90](#).

**15.1.2.335 triton\_g\_factor**

```
real(real64), parameter codata::triton_g_factor =5.957924931d0
```

Definition at line 1680 of file [fcodata.f90](#).

**15.1.2.336 triton\_mag\_\_mom**

```
real(real64), parameter codata::triton_mag__mom =1.5046095202d-26
```

$J T^{-1}$ .

Definition at line 1685 of file [fcodata.f90](#).

**15.1.2.337 triton\_mag\_\_mom\_\_to\_bohr\_magneton\_ratio**

```
real(real64), parameter codata::triton_mag__mom__to_bohr_magneton_ratio =1.6223936651d-3
```

Definition at line 1690 of file [fcodata.f90](#).

**15.1.2.338 triton\_mag\_\_mom\_\_to\_nuclear\_magneton\_ratio**

```
real(real64), parameter codata::triton_mag__mom__to_nuclear_magneton_ratio =2.9789624656d0
```

Definition at line 1695 of file [fcodata.f90](#).

**15.1.2.339 triton\_mass**

```
real(real64), parameter codata::triton_mass =5.0073567446d-27
```

kg

Definition at line 1700 of file [fcodata.f90](#).

**15.1.2.340 triton\_mass\_energy\_equivalent**

```
real(real64), parameter codata::triton_mass_energy_equivalent =4.5003878060d-10
```

J.

Definition at line 1705 of file [fcodata.f90](#).

**15.1.2.341 triton\_mass\_energy\_equivalent\_in\_mev**

```
real(real64), parameter codata::triton_mass_energy_equivalent_in_mev =2808.92113298d0
```

MeV.

Definition at line 1710 of file [fcodata.f90](#).

**15.1.2.342 triton\_mass\_in\_u**

```
real(real64), parameter codata::triton_mass_in_u =3.01550071621d0
```

u

Definition at line 1715 of file [fcodata.f90](#).

**15.1.2.343 triton\_molar\_mass**

```
real(real64), parameter codata::triton_molar_mass =3.01550071517d-3
```

kg mol<sup>-1</sup>

Definition at line 1720 of file [fcodata.f90](#).

**15.1.2.344 triton\_proton\_mass\_ratio**

```
real(real64), parameter codata::triton_proton_mass_ratio =2.99371703414d0
```

Definition at line 1725 of file [fcodata.f90](#).

**15.1.2.345 triton\_relative\_atomic\_mass**

```
real(real64), parameter codata::triton_relative_atomic_mass =3.01550071621d0
```

Definition at line 1730 of file [fcodata.f90](#).

**15.1.2.346 triton\_to\_proton\_mag\_mom\_ratio**

```
real(real64), parameter codata::triton_to_proton_mag_mom_ratio =1.0666399191d0
```

Definition at line 1735 of file [fcodata.f90](#).

**15.1.2.347 u\_alpha\_particle\_electron\_mass\_ratio**

```
real(real64), parameter codata::u_alpha_particle_electron_mass_ratio =0.00000024d0
```

Definition at line 12 of file [fcodata.f90](#).

**15.1.2.348 u\_alpha\_particle\_mass**

```
real(real64), parameter codata::u_alpha_particle_mass =0.0000000020d-27
```

kg

Definition at line 17 of file [fcodata.f90](#).

**15.1.2.349 u\_alpha\_particle\_mass\_energy\_equivalent**

```
real(real64), parameter codata::u_alpha_particle_mass_energy_equivalent =0.0000000018d-10
```

J.

Definition at line 22 of file [fcodata.f90](#).

**15.1.2.350 u\_alpha\_particle\_mass\_energy\_equivalent\_in\_mev**

```
real(real64), parameter codata::u_alpha_particle_mass_energy_equivalent_in_mev =0.0000011d0
```

MeV.

Definition at line 27 of file [fcodata.f90](#).



**15.1.2.351 u\_alpha\_particle\_mass\_in\_u**

```
real(real64), parameter codata::u_alpha_particle_mass_in_u =0.00000000063d0
```

u

Definition at line 32 of file [fcodata.f90](#).

**15.1.2.352 u\_alpha\_particle\_molar\_mass**

```
real(real64), parameter codata::u_alpha_particle_molar_mass =0.0000000012d-3
```

kg mol<sup>-1</sup>

Definition at line 37 of file [fcodata.f90](#).

**15.1.2.353 u\_alpha\_particle\_proton\_mass\_ratio**

```
real(real64), parameter codata::u_alpha_particle_proton_mass_ratio =0.00000000022d0
```

Definition at line 42 of file [fcodata.f90](#).

**15.1.2.354 u\_alpha\_particle\_relative\_atomic\_mass**

```
real(real64), parameter codata::u_alpha_particle_relative_atomic_mass =0.00000000063d0
```

Definition at line 47 of file [fcodata.f90](#).

**15.1.2.355 u\_angstrom\_star**

```
real(real64), parameter codata::u_angstrom_star =0.00000090d-10
```

m

Definition at line 52 of file [fcodata.f90](#).

**15.1.2.356 u\_atomic\_mass\_constant**

```
real(real64), parameter codata::u_atomic_mass_constant =0.00000000050d-27
```

kg

Definition at line 57 of file [fcodata.f90](#).

**15.1.2.357 u\_atomic\_mass\_constant\_energy\_equivalent**

```
real(real64), parameter codata::u_atomic_mass_constant_energy_equivalent =0.00000000045d-10
```

J.

Definition at line 62 of file [fcodata.f90](#).

**15.1.2.358 u\_atomic\_mass\_constant\_energy\_equivalent\_in\_mev**

```
real(real64), parameter codata::u_atomic_mass_constant_energy_equivalent_in_mev =0.00000028d0
```

MeV.

Definition at line 67 of file [fcodata.f90](#).

**15.1.2.359 u\_atomic\_mass\_unit\_electron\_volt\_relationship**

```
real(real64), parameter codata::u_atomic_mass_unit_electron_volt_relationship =0.0000000028d8
```

eV

Definition at line 72 of file [fcodata.f90](#).

**15.1.2.360 u\_atomic\_mass\_unit\_hartree\_relationship**

```
real(real64), parameter codata::u_atomic_mass_unit_hartree_relationship =0.0000000010d7
```

E<sub>h</sub>.

Definition at line 77 of file [fcodata.f90](#).

**15.1.2.361 u\_atomic\_mass\_unit\_hertz\_relationship**

```
real(real64), parameter codata::u_atomic_mass_unit_hertz_relationship =0.00000000068d23
```

Hz.

Definition at line 82 of file [fcodata.f90](#).

**15.1.2.362 u\_atomic\_mass\_unit\_inverse\_meter\_relationship**

```
real(real64), parameter codata::u_atomic_mass_unit_inverse_meter_relationship =0.0000000023d14
```

$\text{m}^{-1}$

Definition at line 87 of file [fcodata.f90](#).

**15.1.2.363 u\_atomic\_mass\_unit\_joule\_relationship**

```
real(real64), parameter codata::u_atomic_mass_unit_joule_relationship =0.00000000045d-10
```

J.

Definition at line 92 of file [fcodata.f90](#).

**15.1.2.364 u\_atomic\_mass\_unit\_kelvin\_relationship**

```
real(real64), parameter codata::u_atomic_mass_unit_kelvin_relationship =0.00000000033d13
```

K.

Definition at line 97 of file [fcodata.f90](#).

**15.1.2.365 u\_atomic\_mass\_unit\_kilogram\_relationship**

```
real(real64), parameter codata::u_atomic_mass_unit_kilogram_relationship =0.00000000050d-27
```

kg

Definition at line 102 of file [fcodata.f90](#).

**15.1.2.366 u\_atomic\_unit\_of\_1st\_hyperpolarizability**

```
real(real64), parameter codata::u_atomic_unit_of_1st_hyperpolarizability =0.0000000015d-53
```

$C^3 m^3 J^{-2}$ .

Definition at line 107 of file [fcodata.f90](#).

**15.1.2.367 u\_atomic\_unit\_of\_2nd\_hyperpolarizability**

```
real(real64), parameter codata::u_atomic_unit_of_2nd_hyperpolarizability =0.0000000038d-65
```

$C^4 m^4 J^{-3}$ .

Definition at line 112 of file [fcodata.f90](#).

**15.1.2.368 u\_atomic\_unit\_of\_action**

```
real(real64), parameter codata::u_atomic_unit_of_action =0.0d0
```

J s.

Definition at line 117 of file [fcodata.f90](#).

**15.1.2.369 u\_atomic\_unit\_of\_charge**

```
real(real64), parameter codata::u_atomic_unit_of_charge =0.0d0
```

C.

Definition at line 122 of file [fcodata.f90](#).

**15.1.2.370 u\_atomic\_unit\_of\_charge\_density**

```
real(real64), parameter codata::u_atomic_unit_of_charge_density =0.00000000049d12
```

$C m^{-3}$ .

Definition at line 127 of file [fcodata.f90](#).

**15.1.2.371 u\_atomic\_unit\_of\_current**

```
real(real64), parameter codata::u_atomic_unit_of_current =0.00000000013d-3
```

A.

Definition at line 132 of file [fcodata.f90](#).

**15.1.2.372 u\_atomic\_unit\_of\_electric\_dipole\_mom**

```
real(real64), parameter codata::u_atomic_unit_of_electric_dipole_mom =0.0000000013d-30
```

C m.

Definition at line 137 of file [fcodata.f90](#).

**15.1.2.373 u\_atomic\_unit\_of\_electric\_field**

```
real(real64), parameter codata::u_atomic_unit_of_electric_field =0.00000000078d11
```

V m<sup>-1</sup>.

Definition at line 142 of file [fcodata.f90](#).

**15.1.2.374 u\_atomic\_unit\_of\_electric\_field\_gradient**

```
real(real64), parameter codata::u_atomic_unit_of_electric_field_gradient =0.0000000029d21
```

V m<sup>-2</sup>.

Definition at line 147 of file [fcodata.f90](#).

**15.1.2.375 u\_atomic\_unit\_of\_electric\_polarizability**

```
real(real64), parameter codata::u_atomic_unit_of_electric_polarizability =0.00000000050d-41
```

C<sup>2</sup> m<sup>2</sup> J<sup>-1</sup>.

Definition at line 152 of file [fcodata.f90](#).

**15.1.2.376 u\_atomic\_unit\_of\_electric\_potential**

```
real(real64), parameter codata::u_atomic_unit_of_electric_potential =0.000000000053d0
```

V.

Definition at line 157 of file [fcodata.f90](#).

**15.1.2.377 u\_atomic\_unit\_of\_electric\_quadrupole\_mom**

```
real(real64), parameter codata::u_atomic_unit_of_electric_quadrupole_mom =0.0000000014d-40
```

C m<sup>2</sup>.

Definition at line 162 of file [fcodata.f90](#).

**15.1.2.378 u\_atomic\_unit\_of\_energy**

```
real(real64), parameter codata::u_atomic_unit_of_energy =0.000000000085d-18
```

J.

Definition at line 167 of file [fcodata.f90](#).

**15.1.2.379 u\_atomic\_unit\_of\_force**

```
real(real64), parameter codata::u_atomic_unit_of_force =0.0000000012d-8
```

N.

Definition at line 172 of file [fcodata.f90](#).

**15.1.2.380 u\_atomic\_unit\_of\_length**

```
real(real64), parameter codata::u_atomic_unit_of_length =0.00000000080d-11
```

m

Definition at line 177 of file [fcodata.f90](#).

**15.1.2.381 u\_atomic\_unit\_of\_mag\_\_dipole\_mom**

```
real(real64), parameter codata::u_atomic_unit_of_mag__dipole_mom =0.00000000056d-23
```

$\text{J T}^{-1}$ .

Definition at line 182 of file [fcodata.f90](#).

**15.1.2.382 u\_atomic\_unit\_of\_mag\_\_flux\_density**

```
real(real64), parameter codata::u_atomic_unit_of_mag__flux_density =0.00000000071d5
```

T.

Definition at line 187 of file [fcodata.f90](#).

**15.1.2.383 u\_atomic\_unit\_of\_magnetizability**

```
real(real64), parameter codata::u_atomic_unit_of_magnetizability =0.00000000048d-29
```

$\text{J T}^{-2}$ .

Definition at line 192 of file [fcodata.f90](#).

**15.1.2.384 u\_atomic\_unit\_of\_mass**

```
real(real64), parameter codata::u_atomic_unit_of_mass =0.00000000028d-31
```

kg

Definition at line 197 of file [fcodata.f90](#).

**15.1.2.385 u\_atomic\_unit\_of\_momentum**

```
real(real64), parameter codata::u_atomic_unit_of_momentum =0.00000000030d-24
```

$\text{kg m s}^{-1}$

Definition at line 202 of file [fcodata.f90](#).

**15.1.2.386 u\_atomic\_unit\_of\_permittivity**

```
real(real64), parameter codata::u_atomic_unit_of_permittivity =0.00000000017d-10
```

$\text{F m}^{-1}$ .

Definition at line 207 of file [fcodata.f90](#).

**15.1.2.387 u\_atomic\_unit\_of\_time**

```
real(real64), parameter codata::u_atomic_unit_of_time =0.0000000000047d-17
```

s

Definition at line 212 of file [fcodata.f90](#).

**15.1.2.388 u\_atomic\_unit\_of\_velocity**

```
real(real64), parameter codata::u_atomic_unit_of_velocity =0.00000000033d6
```

$\text{m s}^{-1}$

Definition at line 217 of file [fcodata.f90](#).

**15.1.2.389 u\_avogadro\_constant**

```
real(real64), parameter codata::u_avogadro_constant =0.0d0
```

$\text{mol}^{-1}$

Definition at line 222 of file [fcodata.f90](#).

**15.1.2.390 u\_bohr\_magneton**

```
real(real64), parameter codata::u_bohr_magneton =0.00000000028d-24
```

$\text{J T}^{-1}$ .

Definition at line 227 of file [fcodata.f90](#).



**15.1.2.391 u\_bohr\_magneton\_in\_ev\_t**

```
real(real64), parameter codata::u_bohr_magneton_in_ev_t =0.0000000017d-5
```

eV T<sup>-1</sup>

Definition at line 232 of file [fcodata.f90](#).

**15.1.2.392 u\_bohr\_magneton\_in\_hz\_t**

```
real(real64), parameter codata::u_bohr_magneton_in_hz_t =0.00000000042d10
```

Hz T<sup>-1</sup>.

Definition at line 237 of file [fcodata.f90](#).

**15.1.2.393 u\_bohr\_magneton\_in\_inverse\_meter\_per\_tesla**

```
real(real64), parameter codata::u_bohr_magneton_in_inverse_meter_per_tesla =0.000000014d0
```

m<sup>-1</sup> T<sup>-1</sup>

Definition at line 242 of file [fcodata.f90](#).

**15.1.2.394 u\_bohr\_magneton\_in\_k\_t**

```
real(real64), parameter codata::u_bohr_magneton_in_k_t =0.00000000020d0
```

K T<sup>-1</sup>.

Definition at line 247 of file [fcodata.f90](#).

**15.1.2.395 u\_bohr\_radius**

```
real(real64), parameter codata::u_bohr_radius =0.00000000080d-11
```

m

Definition at line 252 of file [fcodata.f90](#).

**15.1.2.396 u\_boltzmann\_constant**

```
real(real64), parameter codata::u_boltzmann_constant =0.0d0
```

J K<sup>-1</sup>.

Definition at line 257 of file [fcodata.f90](#).

**15.1.2.397 u\_boltzmann\_constant\_in\_ev\_k**

```
real(real64), parameter codata::u_boltzmann_constant_in_ev_k =0.0d0
```

eV K<sup>-1</sup>

Definition at line 262 of file [fcodata.f90](#).

**15.1.2.398 u\_boltzmann\_constant\_in\_hz\_k**

```
real(real64), parameter codata::u_boltzmann_constant_in_hz_k =0.0d0
```

Hz K<sup>-1</sup>.

Definition at line 267 of file [fcodata.f90](#).

**15.1.2.399 u\_boltzmann\_constant\_in\_inverse\_meter\_per\_kelvin**

```
real(real64), parameter codata::u_boltzmann_constant_in_inverse_meter_per_kelvin =0.0d0
```

m<sup>-1</sup> K<sup>-1</sup>

Definition at line 272 of file [fcodata.f90](#).

**15.1.2.400 u\_characteristic\_impedance\_of\_vacuum**

```
real(real64), parameter codata::u_characteristic_impedance_of_vacuum =0.000000057d0
```

ohm

Definition at line 277 of file [fcodata.f90](#).

**15.1.2.401 u\_classical\_electron\_radius**

```
real(real64), parameter codata::u_classical_electron_radius =0.0000000013d-15
```

m

Definition at line 282 of file [fcodata.f90](#).

**15.1.2.402 u\_compton\_wavelength**

```
real(real64), parameter codata::u_compton_wavelength =0.00000000073d-12
```

m

Definition at line 287 of file [fcodata.f90](#).

**15.1.2.403 u\_conductance\_quantum**

```
real(real64), parameter codata::u_conductance_quantum =0.0d0
```

S.

Definition at line 292 of file [fcodata.f90](#).

**15.1.2.404 u\_conventional\_value\_of\_ampere\_90**

```
real(real64), parameter codata::u_conventional_value_of_ampere_90 =0.0d0
```

A.

Definition at line 297 of file [fcodata.f90](#).

**15.1.2.405 u\_conventional\_value\_of\_coulomb\_90**

```
real(real64), parameter codata::u_conventional_value_of_coulomb_90 =0.0d0
```

C.

Definition at line 302 of file [fcodata.f90](#).

**15.1.2.406 u\_conventional\_value\_of\_farad\_90**

```
real(real64), parameter codata::u_conventional_value_of_farad_90 =0.0d0
```

F.

Definition at line 307 of file [fcodata.f90](#).

**15.1.2.407 u\_conventional\_value\_of\_henry\_90**

```
real(real64), parameter codata::u_conventional_value_of_henry_90 =0.0d0
```

H.

Definition at line 312 of file [fcodata.f90](#).

**15.1.2.408 u\_conventional\_value\_of\_josephson\_constant**

```
real(real64), parameter codata::u_conventional_value_of_josephson_constant =0.0d0
```

Hz V<sup>-1</sup>.

Definition at line 317 of file [fcodata.f90](#).

**15.1.2.409 u\_conventional\_value\_of\_ohm\_90**

```
real(real64), parameter codata::u_conventional_value_of_ohm_90 =0.0d0
```

ohm

Definition at line 322 of file [fcodata.f90](#).

**15.1.2.410 u\_conventional\_value\_of\_volt\_90**

```
real(real64), parameter codata::u_conventional_value_of_volt_90 =0.0d0
```

V.

Definition at line 327 of file [fcodata.f90](#).

**15.1.2.411 u\_conventional\_value\_of\_von\_klitzing\_constant**

```
real(real64), parameter codata::u_conventional_value_of_von_klitzing_constant =0.0d0
```

ohm

Definition at line 332 of file [fcodata.f90](#).

**15.1.2.412 u\_conventional\_value\_of\_watt\_90**

```
real(real64), parameter codata::u_conventional_value_of_watt_90 =0.0d0
```

W.

Definition at line 337 of file [fcodata.f90](#).

**15.1.2.413 u\_copper\_x\_unit**

```
real(real64), parameter codata::u_copper_x_unit =0.00000028d-13
```

m

Definition at line 342 of file [fcodata.f90](#).

**15.1.2.414 u\_deuteron\_electron\_mag\_\_mom\_\_ratio**

```
real(real64), parameter codata::u_deuteron_electron_mag__mom__ratio =0.000000012d-4
```

Definition at line 347 of file [fcodata.f90](#).

**15.1.2.415 u\_deuteron\_electron\_mass\_ratio**

```
real(real64), parameter codata::u_deuteron_electron_mass_ratio =0.00000013d0
```

Definition at line 352 of file [fcodata.f90](#).

**15.1.2.416 u\_deuteron\_g\_factor**

```
real(real64), parameter codata::u_deuteron_g_factor =0.0000000022d0
```

Definition at line 357 of file [fcodata.f90](#).

**15.1.2.417 u\_deuteron\_mag\_\_mom**

```
real(real64), parameter codata::u_deuteron_mag__mom =0.000000011d-27
```

$J T^{-1}$ .

Definition at line 362 of file [fcodata.f90](#).

**15.1.2.418 u\_deuteron\_mag\_\_mom\_\_to\_bohr\_magneton\_ratio**

```
real(real64), parameter codata::u_deuteron_mag__mom__to_bohr_magneton_ratio =0.000000012d-4
```

Definition at line 367 of file [fcodata.f90](#).

**15.1.2.419 u\_deuteron\_mag\_\_mom\_\_to\_nuclear\_magneton\_ratio**

```
real(real64), parameter codata::u_deuteron_mag__mom__to_nuclear_magneton_ratio =0.0000000022d0
```

Definition at line 372 of file [fcodata.f90](#).

**15.1.2.420 u\_deuteron\_mass**

```
real(real64), parameter codata::u_deuteron_mass =0.0000000010d-27
```

kg

Definition at line 377 of file [fcodata.f90](#).

**15.1.2.421 u\_deuteron\_mass\_energy\_equivalent**

```
real(real64), parameter codata::u_deuteron_mass_energy_equivalent =0.00000000091d-10
```

J.

Definition at line 382 of file [fcodata.f90](#).

**15.1.2.422 u\_deuteron\_mass\_energy\_equivalent\_in\_mev**

```
real(real64), parameter codata::u_deuteron_mass_energy_equivalent_in_mev =0.00000057d0
```

MeV.

Definition at line 387 of file [fcodata.f90](#).

**15.1.2.423 u\_deuteron\_mass\_in\_u**

```
real(real64), parameter codata::u_deuteron_mass_in_u =0.00000000040d0
```

u

Definition at line 392 of file [fcodata.f90](#).

**15.1.2.424 u\_deuteron\_molar\_mass**

```
real(real64), parameter codata::u_deuteron_molar_mass =0.00000000061d-3
```

kg mol<sup>-1</sup>

Definition at line 397 of file [fcodata.f90](#).

**15.1.2.425 u\_deuteron\_neutron\_mag\_\_mom\_\_ratio**

```
real(real64), parameter codata::u_deuteron_neutron_mag__mom__ratio =0.00000011d0
```

Definition at line 402 of file [fcodata.f90](#).

**15.1.2.426 u\_deuteron\_proton\_mag\_\_mom\_\_ratio**

```
real(real64), parameter codata::u_deuteron_proton_mag__mom__ratio =0.00000000079d0
```

Definition at line 407 of file [fcodata.f90](#).

**15.1.2.427 u\_deuteron\_proton\_mass\_ratio**

```
real(real64), parameter codata::u_deuteron_proton_mass_ratio =0.00000000011d0
```

Definition at line 412 of file [fcodata.f90](#).

**15.1.2.428 u\_deuteron\_relative\_atomic\_mass**

```
real(real64), parameter codata::u_deuteron_relative_atomic_mass =0.000000000040d0
```

Definition at line 417 of file [fcodata.f90](#).

**15.1.2.429 u\_deuteron\_rms\_charge\_radius**

```
real(real64), parameter codata::u_deuteron_rms_charge_radius =0.00074d-15
```

m

Definition at line 422 of file [fcodata.f90](#).

**15.1.2.430 u\_electron\_charge\_to\_mass\_quotient**

```
real(real64), parameter codata::u_electron_charge_to_mass_quotient =0.00000000053d11
```

C kg<sup>-1</sup>.

Definition at line 427 of file [fcodata.f90](#).

**15.1.2.431 u\_electron\_deuteron\_mag\_\_mom\_\_ratio**

```
real(real64), parameter codata::u_electron_deuteron_mag__mom__ratio =0.0000056d0
```

Definition at line 432 of file [fcodata.f90](#).

**15.1.2.432 u\_electron\_deuteron\_mass\_ratio**

```
real(real64), parameter codata::u_electron_deuteron_mass_ratio =0.000000000096d-4
```

Definition at line 437 of file [fcodata.f90](#).



**15.1.2.433 u\_electron\_g\_factor**

```
real(real64), parameter codata::u_electron_g_factor =0.00000000000035d0
```

Definition at line 442 of file [fcodata.f90](#).

**15.1.2.434 u\_electron\_gyromag\_\_ratio**

```
real(real64), parameter codata::u_electron_gyromag__ratio =0.00000000053d11
```

$\text{s}^{-1} \text{T}^{-1}$

Definition at line 447 of file [fcodata.f90](#).

**15.1.2.435 u\_electron\_gyromag\_\_ratio\_in\_mhz\_t**

```
real(real64), parameter codata::u_electron_gyromag__ratio_in_mhz_t =0.0000085d0
```

$\text{MHz T}^{-1}$ .

Definition at line 452 of file [fcodata.f90](#).

**15.1.2.436 u\_electron\_helion\_mass\_ratio**

```
real(real64), parameter codata::u_electron_helion_mass_ratio =0.00000000079d-4
```

Definition at line 457 of file [fcodata.f90](#).

**15.1.2.437 u\_electron\_mag\_\_mom**

```
real(real64), parameter codata::u_electron_mag__mom =0.0000000028d-24
```

$\text{J T}^{-1}$ .

Definition at line 462 of file [fcodata.f90](#).

**15.1.2.438 u\_electron\_mag\_\_mom\_\_anomaly**

```
real(real64), parameter codata::u_electron_mag__mom__anomaly =0.00000000018d-3
```

Definition at line 467 of file [fcodata.f90](#).

**15.1.2.439 u\_electron\_mag\_\_mom\_\_to\_bohr\_magneton\_ratio**

```
real(real64), parameter codata::u_electron_mag__mom__to_bohr_magneton_ratio =0.00000000000018d0
```

Definition at line 472 of file [fcodata.f90](#).

**15.1.2.440 u\_electron\_mag\_\_mom\_\_to\_nuclear\_magneton\_ratio**

```
real(real64), parameter codata::u_electron_mag__mom__to_nuclear_magneton_ratio =0.00000011d0
```

Definition at line 477 of file [fcodata.f90](#).

**15.1.2.441 u\_electron\_mass**

```
real(real64), parameter codata::u_electron_mass =0.00000000028d-31
```

kg

Definition at line 482 of file [fcodata.f90](#).

**15.1.2.442 u\_electron\_mass\_energy\_equivalent**

```
real(real64), parameter codata::u_electron_mass_energy_equivalent =0.0000000025d-14
```

J.

Definition at line 487 of file [fcodata.f90](#).

**15.1.2.443 u\_electron\_mass\_energy\_equivalent\_in\_mev**

```
real(real64), parameter codata::u_electron_mass_energy_equivalent_in_mev =0.00000000015d0
```

MeV.

Definition at line 492 of file [fcodata.f90](#).

**15.1.2.444 u\_electron\_mass\_in\_u**

```
real(real64), parameter codata::u_electron_mass_in_u =0.00000000016d-4
```

u

Definition at line 497 of file [fcodata.f90](#).

**15.1.2.445 u\_electron\_molar\_mass**

```
real(real64), parameter codata::u_electron_molar_mass =0.00000000017d-7
```

kg mol<sup>-1</sup>

Definition at line 502 of file [fcodata.f90](#).

**15.1.2.446 u\_electron\_muon\_mag\_\_mom\_\_ratio**

```
real(real64), parameter codata::u_electron_muon_mag__mom__ratio =0.0000046d0
```

Definition at line 507 of file [fcodata.f90](#).

**15.1.2.447 u\_electron\_muon\_mass\_ratio**

```
real(real64), parameter codata::u_electron_muon_mass_ratio =0.00000011d-3
```

Definition at line 512 of file [fcodata.f90](#).

**15.1.2.448 u\_electron\_neutron\_mag\_\_mom\_\_ratio**

```
real(real64), parameter codata::u_electron_neutron_mag__mom__ratio =0.00023d0
```

Definition at line 517 of file [fcodata.f90](#).

**15.1.2.449 u\_electron\_neutron\_mass\_ratio**

```
real(real64), parameter codata::u_electron_neutron_mass_ratio =0.0000000026d-4
```

Definition at line 522 of file [fcodata.f90](#).

**15.1.2.450 u\_electron\_proton\_mag\_\_mom\_\_ratio**

```
real(real64), parameter codata::u_electron_proton_mag__mom__ratio =0.00000020d0
```

Definition at line 527 of file [fcodata.f90](#).

**15.1.2.451 u\_electron\_proton\_mass\_ratio**

```
real(real64), parameter codata::u_electron_proton_mass_ratio =0.00000000033d-4
```

Definition at line 532 of file [fcodata.f90](#).

**15.1.2.452 u\_electron\_relative\_atomic\_mass**

```
real(real64), parameter codata::u_electron_relative_atomic_mass =0.00000000016d-4
```

Definition at line 537 of file [fcodata.f90](#).

**15.1.2.453 u\_electron\_tau\_mass\_ratio**

```
real(real64), parameter codata::u_electron_tau_mass_ratio =0.00019d-4
```

Definition at line 542 of file [fcodata.f90](#).

**15.1.2.454 u\_electron\_to\_alpha\_particle\_mass\_ratio**

```
real(real64), parameter codata::u_electron_to_alpha_particle_mass_ratio =0.000000000045d-4
```

Definition at line 547 of file [fcodata.f90](#).

**15.1.2.455 u\_electron\_to\_shielded\_helion\_mag\_\_mom\_\_ratio**

```
real(real64), parameter codata::u_electron_to_shielded_helion_mag__mom__ratio =0.000010d0
```

Definition at line 552 of file [fcodata.f90](#).

**15.1.2.456 u\_electron\_to\_shielded\_proton\_mag\_\_mom\_\_ratio**

```
real(real64), parameter codata::u_electron_to_shielded_proton_mag__mom__ratio =0.0000072d0
```

Definition at line 557 of file [fcodata.f90](#).

**15.1.2.457 u\_electron\_triton\_mass\_ratio**

```
real(real64), parameter codata::u_electron_triton_mass_ratio =0.000000000090d-4
```

Definition at line 562 of file [fcodata.f90](#).

**15.1.2.458 u\_electron\_volt**

```
real(real64), parameter codata::u_electron_volt =0.0d0
```

J.

Definition at line 567 of file [fcodata.f90](#).

**15.1.2.459 u\_electron\_volt\_atomic\_mass\_unit\_relationship**

```
real(real64), parameter codata::u_electron_volt_atomic_mass_unit_relationship =0.00000000032d-9
```

u

Definition at line 572 of file [fcodata.f90](#).

**15.1.2.460 u\_electron\_volt\_hartree\_relationship**

```
real(real64), parameter codata::u_electron_volt_hartree_relationship =0.000000000071d-2
```

E<sub>h</sub>.

Definition at line 577 of file [fcodata.f90](#).

**15.1.2.461 u\_electron\_volt\_hertz\_relationship**

```
real(real64), parameter codata::u_electron_volt_hertz_relationship =0.0d0
```

Hz.

Definition at line 582 of file [fcodata.f90](#).

**15.1.2.462 u\_electron\_volt\_inverse\_meter\_relationship**

```
real(real64), parameter codata::u_electron_volt_inverse_meter_relationship =0.0d0
```

$\text{m}^{-1}$

Definition at line 587 of file [fcodata.f90](#).

**15.1.2.463 u\_electron\_volt\_joule\_relationship**

```
real(real64), parameter codata::u_electron_volt_joule_relationship =0.0d0
```

J.

Definition at line 592 of file [fcodata.f90](#).

**15.1.2.464 u\_electron\_volt\_kelvin\_relationship**

```
real(real64), parameter codata::u_electron_volt_kelvin_relationship =0.0d0
```

K.

Definition at line 597 of file [fcodata.f90](#).

**15.1.2.465 u\_electron\_volt\_kilogram\_relationship**

```
real(real64), parameter codata::u_electron_volt_kilogram_relationship =0.0d0
```

kg

Definition at line 602 of file [fcodata.f90](#).

**15.1.2.466 u\_elementary\_charge**

```
real(real64), parameter codata::u_elementary_charge =0.0d0
```

C.

Definition at line 607 of file [fcodata.f90](#).

**15.1.2.467 u\_elementary\_charge\_over\_h\_bar**

```
real(real64), parameter codata::u_elementary_charge_over_h_bar =0.0d0
```

A J<sup>-1</sup>.

Definition at line 612 of file [fcodata.f90](#).

**15.1.2.468 u\_faraday\_constant**

```
real(real64), parameter codata::u_faraday_constant =0.0d0
```

C mol<sup>-1</sup>.

Definition at line 617 of file [fcodata.f90](#).

**15.1.2.469 u\_fermi\_coupling\_constant**

```
real(real64), parameter codata::u_fermi_coupling_constant =0.0000006d-5
```

GeV<sup>-2</sup>.

Definition at line 622 of file [fcodata.f90](#).

**15.1.2.470 u\_fine\_structure\_constant**

```
real(real64), parameter codata::u_fine_structure_constant =0.0000000011d-3
```

Definition at line 627 of file [fcodata.f90](#).

**15.1.2.471 u\_first\_radiation\_constant**

```
real(real64), parameter codata::u_first_radiation_constant =0.0d0
```

W m<sup>2</sup>.

Definition at line 632 of file [fcodata.f90](#).

**15.1.2.472 u\_first\_radiation\_constant\_for\_spectral\_radiance**

```
real(real64), parameter codata::u_first_radiation_constant_for_spectral_radiance =0.0d0
```

W m<sup>2</sup> sr<sup>-1</sup>.

Definition at line 637 of file [fcodata.f90](#).

**15.1.2.473 u\_hartree\_atomic\_mass\_unit\_relationship**

```
real(real64), parameter codata::u_hartree_atomic_mass_unit_relationship =0.00000000088d-8
```

u

Definition at line 642 of file [fcodata.f90](#).

**15.1.2.474 u\_hartree\_electron\_volt\_relationship**

```
real(real64), parameter codata::u_hartree_electron_volt_relationship =0.00000000053d0
```

eV

Definition at line 647 of file [fcodata.f90](#).

**15.1.2.475 u\_hartree\_energy**

```
real(real64), parameter codata::u_hartree_energy =0.000000000085d-18
```

J.

Definition at line 652 of file [fcodata.f90](#).



**15.1.2.476 u\_hartree\_energy\_in\_ev**

```
real(real64), parameter codata::u_hartree_energy_in_ev =0.000000000053d0
```

eV

Definition at line 657 of file [fcodata.f90](#).

**15.1.2.477 u\_hartree\_hertz\_relationship**

```
real(real64), parameter codata::u_hartree_hertz_relationship =0.000000000013d15
```

Hz.

Definition at line 662 of file [fcodata.f90](#).

**15.1.2.478 u\_hartree\_inverse\_meter\_relationship**

```
real(real64), parameter codata::u_hartree_inverse_meter_relationship =0.0000000000043d7
```

m<sup>-1</sup>

Definition at line 667 of file [fcodata.f90](#).

**15.1.2.479 u\_hartree\_joule\_relationship**

```
real(real64), parameter codata::u_hartree_joule_relationship =0.0000000000085d-18
```

J.

Definition at line 672 of file [fcodata.f90](#).

**15.1.2.480 u\_hartree\_kelvin\_relationship**

```
real(real64), parameter codata::u_hartree_kelvin_relationship =0.0000000000061d5
```

K.

Definition at line 677 of file [fcodata.f90](#).

**15.1.2.481 u\_hartree\_kilogram\_relationship**

```
real(real64), parameter codata::u_hartree_kilogram_relationship =0.0000000000094d-35
```

kg

Definition at line 682 of file [fcodata.f90](#).

**15.1.2.482 u\_helion\_electron\_mass\_ratio**

```
real(real64), parameter codata::u_helion_electron_mass_ratio =0.00000024d0
```

Definition at line 687 of file [fcodata.f90](#).

**15.1.2.483 u\_helion\_g\_factor**

```
real(real64), parameter codata::u_helion_g_factor =0.000000050d0
```

Definition at line 692 of file [fcodata.f90](#).

**15.1.2.484 u\_helion\_mag\_\_mom**

```
real(real64), parameter codata::u_helion_mag__mom =0.000000013d-26
```

$J T^{-1}$ .

Definition at line 697 of file [fcodata.f90](#).

**15.1.2.485 u\_helion\_mag\_\_mom\_\_to\_bohr\_magneton\_ratio**

```
real(real64), parameter codata::u_helion_mag__mom__to_bohr_magneton_ratio =0.000000014d-3
```

Definition at line 702 of file [fcodata.f90](#).

**15.1.2.486 u\_helion\_mag\_\_mom\_\_to\_nuclear\_magneton\_ratio**

```
real(real64), parameter codata::u_helion_mag__mom__to_nuclear_magneton_ratio =0.000000025d0
```

Definition at line 707 of file [fcodata.f90](#).

**15.1.2.487 u\_helion\_mass**

```
real(real64), parameter codata::u_helion_mass =0.0000000015d-27
```

kg

Definition at line 712 of file [fcodata.f90](#).

**15.1.2.488 u\_helion\_mass\_energy\_equivalent**

```
real(real64), parameter codata::u_helion_mass_energy_equivalent =0.0000000014d-10
```

J.

Definition at line 717 of file [fcodata.f90](#).

**15.1.2.489 u\_helion\_mass\_energy\_equivalent\_in\_mev**

```
real(real64), parameter codata::u_helion_mass_energy_equivalent_in_mev =0.00000085d0
```

MeV.

Definition at line 722 of file [fcodata.f90](#).

**15.1.2.490 u\_helion\_mass\_in\_u**

```
real(real64), parameter codata::u_helion_mass_in_u =0.000000000097d0
```

u

Definition at line 727 of file [fcodata.f90](#).

**15.1.2.491 u\_helion\_molar\_mass**

```
real(real64), parameter codata::u_helion_molar_mass =0.00000000091d-3
```

kg mol<sup>-1</sup>

Definition at line 732 of file [fcodata.f90](#).

**15.1.2.492 u\_helion\_proton\_mass\_ratio**

```
real(real64), parameter codata::u_helion_proton_mass_ratio =0.00000000013d0
```

Definition at line 737 of file [fcodata.f90](#).

**15.1.2.493 u\_helion\_relative\_atomic\_mass**

```
real(real64), parameter codata::u_helion_relative_atomic_mass =0.000000000097d0
```

Definition at line 742 of file [fcodata.f90](#).

**15.1.2.494 u\_helion\_shielding\_shift**

```
real(real64), parameter codata::u_helion_shielding_shift =0.000010d-5
```

Definition at line 747 of file [fcodata.f90](#).

**15.1.2.495 u\_hertz\_atomic\_mass\_unit\_relationship**

```
real(real64), parameter codata::u_hertz_atomic_mass_unit_relationship =0.0000000013d-24
```

u

Definition at line 752 of file [fcodata.f90](#).

**15.1.2.496 u\_hertz\_electron\_volt\_relationship**

```
real(real64), parameter codata::u_hertz_electron_volt_relationship =0.0d0
```

eV

Definition at line 757 of file [fcodata.f90](#).

**15.1.2.497 u\_hertz\_hartree\_relationship**

```
real(real64), parameter codata::u_hertz_hartree_relationship =0.0000000000029d-16
```

E<sub>h</sub>.

Definition at line 762 of file [fcodata.f90](#).

**15.1.2.498 u\_hertz\_inverse\_meter\_relationship**

```
real(real64), parameter codata::u_hertz_inverse_meter_relationship =0.0d0
```

$\text{m}^{-1}$

Definition at line 767 of file [fcodata.f90](#).

**15.1.2.499 u\_hertz\_joule\_relationship**

```
real(real64), parameter codata::u_hertz_joule_relationship =0.0d0
```

J.

Definition at line 772 of file [fcodata.f90](#).

**15.1.2.500 u\_hertz\_kelvin\_relationship**

```
real(real64), parameter codata::u_hertz_kelvin_relationship =0.0d0
```

K.

Definition at line 777 of file [fcodata.f90](#).

**15.1.2.501 u\_hertz\_kilogram\_relationship**

```
real(real64), parameter codata::u_hertz_kilogram_relationship =0.0d0
```

kg

Definition at line 782 of file [fcodata.f90](#).

**15.1.2.502 u\_hyperfine\_transition\_frequency\_of\_cs\_133**

```
real(real64), parameter codata::u_hyperfine_transition_frequency_of_cs_133 =0.0d0
```

Hz.

Definition at line 787 of file [fcodata.f90](#).

**15.1.2.503 u\_inverse\_fine\_structure\_constant**

```
real(real64), parameter codata::u_inverse_fine_structure_constant =0.000000021d0
```

Definition at line 792 of file [fcodata.f90](#).

**15.1.2.504 u\_inverse\_meter\_atomic\_mass\_unit\_relationship**

```
real(real64), parameter codata::u_inverse_meter_atomic_mass_unit_relationship =0.00000000040d-15
```

u

Definition at line 797 of file [fcodata.f90](#).

**15.1.2.505 u\_inverse\_meter\_electron\_volt\_relationship**

```
real(real64), parameter codata::u_inverse_meter_electron_volt_relationship =0.0d0
```

eV

Definition at line 802 of file [fcodata.f90](#).

**15.1.2.506 u\_inverse\_meter\_hartree\_relationship**

```
real(real64), parameter codata::u_inverse_meter_hartree_relationship =0.0000000000088d-8
```

E<sub>h</sub>.

Definition at line 807 of file [fcodata.f90](#).

**15.1.2.507 u\_inverse\_meter\_hertz\_relationship**

```
real(real64), parameter codata::u_inverse_meter_hertz_relationship =0.0d0
```

Hz.

Definition at line 812 of file [fcodata.f90](#).

**15.1.2.508 u\_inverse\_meter\_joule\_relationship**

```
real(real64), parameter codata::u_inverse_meter_joule_relationship =0.0d0
```

J.

Definition at line 817 of file [fcodata.f90](#).

**15.1.2.509 u\_inverse\_meter\_kelvin\_relationship**

```
real(real64), parameter codata::u_inverse_meter_kelvin_relationship =0.0d0
```

K.

Definition at line 822 of file [fcodata.f90](#).

**15.1.2.510 u\_inverse\_meter\_kilogram\_relationship**

```
real(real64), parameter codata::u_inverse_meter_kilogram_relationship =0.0d0
```

kg

Definition at line 827 of file [fcodata.f90](#).

**15.1.2.511 u\_inverse\_of\_conductance\_quantum**

```
real(real64), parameter codata::u_inverse_of_conductance_quantum =0.0d0
```

ohm

Definition at line 832 of file [fcodata.f90](#).

**15.1.2.512 u\_josephson\_constant**

```
real(real64), parameter codata::u_josephson_constant =0.0d0
```

Hz V<sup>-1</sup>.

Definition at line 837 of file [fcodata.f90](#).

**15.1.2.513 u\_joule\_atomic\_mass\_unit\_relationship**

```
real(real64), parameter codata::u_joule_atomic_mass_unit_relationship =0.0000000020d9
```

u

Definition at line 842 of file [fcodata.f90](#).

**15.1.2.514 u\_joule\_electron\_volt\_relationship**

```
real(real64), parameter codata::u_joule_electron_volt_relationship =0.0d0
```

eV

Definition at line 847 of file [fcodata.f90](#).

**15.1.2.515 u\_joule\_hartree\_relationship**

```
real(real64), parameter codata::u_joule_hartree_relationship =0.0000000000045d17
```

E<sub>h</sub>.

Definition at line 852 of file [fcodata.f90](#).

**15.1.2.516 u\_joule\_hertz\_relationship**

```
real(real64), parameter codata::u_joule_hertz_relationship =0.0d0
```

Hz.

Definition at line 857 of file [fcodata.f90](#).

**15.1.2.517 u\_joule\_inverse\_meter\_relationship**

```
real(real64), parameter codata::u_joule_inverse_meter_relationship =0.0d0
```

m<sup>-1</sup>

Definition at line 862 of file [fcodata.f90](#).



**15.1.2.518 u\_joule\_kelvin\_relationship**

```
real(real64), parameter codata::u_joule_kelvin_relationship =0.0d0
```

K.

Definition at line 867 of file [fcodata.f90](#).

**15.1.2.519 u\_joule\_kilogram\_relationship**

```
real(real64), parameter codata::u_joule_kilogram_relationship =0.0d0
```

kg

Definition at line 872 of file [fcodata.f90](#).

**15.1.2.520 u\_kelvin\_atomic\_mass\_unit\_relationship**

```
real(real64), parameter codata::u_kelvin_atomic_mass_unit_relationship =0.0000000028d-14
```

u

Definition at line 877 of file [fcodata.f90](#).

**15.1.2.521 u\_kelvin\_electron\_volt\_relationship**

```
real(real64), parameter codata::u_kelvin_electron_volt_relationship =0.0d0
```

eV

Definition at line 882 of file [fcodata.f90](#).

**15.1.2.522 u\_kelvin\_hartree\_relationship**

```
real(real64), parameter codata::u_kelvin_hartree_relationship =0.0000000000061d-6
```

E<sub>h</sub>.

Definition at line 887 of file [fcodata.f90](#).

**15.1.2.523 u\_kelvin\_hertz\_relationship**

```
real(real64), parameter codata::u_kelvin_hertz_relationship =0.0d0
```

Hz.

Definition at line 892 of file [fcodata.f90](#).

**15.1.2.524 u\_kelvin\_inverse\_meter\_relationship**

```
real(real64), parameter codata::u_kelvin_inverse_meter_relationship =0.0d0
```

$\text{m}^{-1}$

Definition at line 897 of file [fcodata.f90](#).

**15.1.2.525 u\_kelvin\_joule\_relationship**

```
real(real64), parameter codata::u_kelvin_joule_relationship =0.0d0
```

J.

Definition at line 902 of file [fcodata.f90](#).

**15.1.2.526 u\_kelvin\_kilogram\_relationship**

```
real(real64), parameter codata::u_kelvin_kilogram_relationship =0.0d0
```

kg

Definition at line 907 of file [fcodata.f90](#).

**15.1.2.527 u\_kilogram\_atomic\_mass\_unit\_relationship**

```
real(real64), parameter codata::u_kilogram_atomic_mass_unit_relationship =0.0000000018d26
```

u

Definition at line 912 of file [fcodata.f90](#).

**15.1.2.528 u\_kilogram\_electron\_volt\_relationship**

```
real(real64), parameter codata::u_kilogram_electron_volt_relationship =0.0d0
```

eV

Definition at line 917 of file [fcodata.f90](#).

**15.1.2.529 u\_kilogram\_hartree\_relationship**

```
real(real64), parameter codata::u_kilogram_hartree_relationship =0.0000000000040d34
```

E<sub>h</sub>.

Definition at line 922 of file [fcodata.f90](#).

**15.1.2.530 u\_kilogram\_hertz\_relationship**

```
real(real64), parameter codata::u_kilogram_hertz_relationship =0.0d0
```

Hz.

Definition at line 927 of file [fcodata.f90](#).

**15.1.2.531 u\_kilogram\_inverse\_meter\_relationship**

```
real(real64), parameter codata::u_kilogram_inverse_meter_relationship =0.0d0
```

m<sup>-1</sup>

Definition at line 932 of file [fcodata.f90](#).

**15.1.2.532 u\_kilogram\_joule\_relationship**

```
real(real64), parameter codata::u_kilogram_joule_relationship =0.0d0
```

J.

Definition at line 937 of file [fcodata.f90](#).

**15.1.2.533 u\_kilogram\_kelvin\_relationship**

```
real(real64), parameter codata::u_kilogram_kelvin_relationship =0.0d0
```

K.

Definition at line 942 of file [fcodata.f90](#).

**15.1.2.534 u\_lattice\_parameter\_of\_silicon**

```
real(real64), parameter codata::u_lattice_parameter_of_silicon =0.000000089d-10
```

m

Definition at line 947 of file [fcodata.f90](#).

**15.1.2.535 u\_lattice\_spacing\_of\_ideal\_si\_\_220**

```
real(real64), parameter codata::u_lattice_spacing_of_ideal_si__220 =0.000000032d-10
```

m

Definition at line 952 of file [fcodata.f90](#).

**15.1.2.536 u\_loschmidt\_constant\_\_273\_15\_k\_\_100\_kpa**

```
real(real64), parameter codata::u_loschmidt_constant__273_15_k__100_kpa =0.0d0
```

m<sup>-3</sup>

Definition at line 957 of file [fcodata.f90](#).

**15.1.2.537 u\_loschmidt\_constant\_\_273\_15\_k\_\_101\_325\_kpa**

```
real(real64), parameter codata::u_loschmidt_constant__273_15_k__101_325_kpa =0.0d0
```

m<sup>-3</sup>

Definition at line 962 of file [fcodata.f90](#).

**15.1.2.538 u\_luminous\_efficacy**

```
real(real64), parameter codata::u_luminous_efficacy =0.0d0
```

lm W<sup>-1</sup>

Definition at line 967 of file [fcodata.f90](#).

**15.1.2.539 u\_mag\_\_flux\_quantum**

```
real(real64), parameter codata::u_mag__flux_quantum =0.0d0
```

Wb.

Definition at line 972 of file [fcodata.f90](#).

**15.1.2.540 u\_molar\_gas\_constant**

```
real(real64), parameter codata::u_molar_gas_constant =0.0d0
```

J mol<sup>-1</sup> K<sup>-1</sup>.

Definition at line 977 of file [fcodata.f90](#).

**15.1.2.541 u\_molar\_mass\_constant**

```
real(real64), parameter codata::u_molar_mass_constant =0.00000000030d-3
```

kg mol<sup>-1</sup>

Definition at line 982 of file [fcodata.f90](#).

**15.1.2.542 u\_molar\_mass\_of\_carbon\_12**

```
real(real64), parameter codata::u_molar_mass_of_carbon_12 =0.0000000036d-3
```

kg mol<sup>-1</sup>

Definition at line 987 of file [fcodata.f90](#).

**15.1.2.543 u\_molar\_planck\_constant**

```
real(real64), parameter codata::u_molar_planck_constant =0.0d0
```

$\text{J Hz}^{-1} \text{ mol}^{-1}$ .

Definition at line 992 of file [fcodata.f90](#).

**15.1.2.544 u\_molar\_volume\_of\_ideal\_gas\_\_273\_15\_k\_\_100\_kpa**

```
real(real64), parameter codata::u_molar_volume_of_ideal_gas__273_15_k__100_kpa =0.0d0
```

$\text{m}^3 \text{ mol}^{-1}$

Definition at line 997 of file [fcodata.f90](#).

**15.1.2.545 u\_molar\_volume\_of\_ideal\_gas\_\_273\_15\_k\_\_101\_325\_kpa**

```
real(real64), parameter codata::u_molar_volume_of_ideal_gas__273_15_k__101_325_kpa =0.0d0
```

$\text{m}^3 \text{ mol}^{-1}$

Definition at line 1002 of file [fcodata.f90](#).

**15.1.2.546 u\_molar\_volume\_of\_silicon**

```
real(real64), parameter codata::u_molar_volume_of_silicon =0.000000060d-5
```

$\text{m}^3 \text{ mol}^{-1}$

Definition at line 1007 of file [fcodata.f90](#).

**15.1.2.547 u\_molybdenum\_x\_unit**

```
real(real64), parameter codata::u_molybdenum_x_unit =0.00000053d-13
```

m

Definition at line 1012 of file [fcodata.f90](#).

**15.1.2.548 u\_muon\_compton\_wavelength**

```
real(real64), parameter codata::u_muon_compton_wavelength =0.000000026d-14  
m
```

Definition at line 1017 of file [fcodata.f90](#).

**15.1.2.549 u\_muon\_electron\_mass\_ratio**

```
real(real64), parameter codata::u_muon_electron_mass_ratio =0.0000046d0
```

Definition at line 1022 of file [fcodata.f90](#).

**15.1.2.550 u\_muon\_g\_factor**

```
real(real64), parameter codata::u_muon_g_factor =0.000000013d0
```

Definition at line 1027 of file [fcodata.f90](#).

**15.1.2.551 u\_muon\_mag\_\_mom**

```
real(real64), parameter codata::u_muon_mag__mom =0.00000010d-26
```

$J\ T^{-1}$ .

Definition at line 1032 of file [fcodata.f90](#).

**15.1.2.552 u\_muon\_mag\_\_mom\_\_anomaly**

```
real(real64), parameter codata::u_muon_mag__mom__anomaly =0.00000063d-3
```

Definition at line 1037 of file [fcodata.f90](#).

**15.1.2.553 u\_muon\_mag\_\_mom\_\_to\_bohr\_magneton\_ratio**

```
real(real64), parameter codata::u_muon_mag__mom__to_bohr_magneton_ratio =0.00000011d-3
```

Definition at line 1042 of file [fcodata.f90](#).

**15.1.2.554 u\_muon\_mag\_mom\_to\_nuclear\_magneton\_ratio**

```
real(real64), parameter codata::u_muon_mag_mom_to_nuclear_magneton_ratio =0.00000020d0
```

Definition at line 1047 of file [fcodata.f90](#).

**15.1.2.555 u\_muon\_mass**

```
real(real64), parameter codata::u_muon_mass =0.000000042d-28
```

kg

Definition at line 1052 of file [fcodata.f90](#).

**15.1.2.556 u\_muon\_mass\_energy\_equivalent**

```
real(real64), parameter codata::u_muon_mass_energy_equivalent =0.000000038d-11
```

J.

Definition at line 1057 of file [fcodata.f90](#).

**15.1.2.557 u\_muon\_mass\_energy\_equivalent\_in\_mev**

```
real(real64), parameter codata::u_muon_mass_energy_equivalent_in_mev =0.0000023d0
```

MeV.

Definition at line 1062 of file [fcodata.f90](#).

**15.1.2.558 u\_muon\_mass\_in\_u**

```
real(real64), parameter codata::u_muon_mass_in_u =0.0000000025d0
```

u

Definition at line 1067 of file [fcodata.f90](#).



**15.1.2.559 u\_muon\_molar\_mass**

```
real(real64), parameter codata::u_muon_molar_mass =0.000000025d-4
```

kg mol<sup>-1</sup>

Definition at line 1072 of file [fcodata.f90](#).

**15.1.2.560 u\_muon\_neutron\_mass\_ratio**

```
real(real64), parameter codata::u_muon_neutron_mass_ratio =0.0000000025d0
```

Definition at line 1077 of file [fcodata.f90](#).

**15.1.2.561 u\_muon\_proton\_mag\_\_mom\_\_ratio**

```
real(real64), parameter codata::u_muon_proton_mag__mom__ratio =0.000000071d0
```

Definition at line 1082 of file [fcodata.f90](#).

**15.1.2.562 u\_muon\_proton\_mass\_ratio**

```
real(real64), parameter codata::u_muon_proton_mass_ratio =0.0000000025d0
```

Definition at line 1087 of file [fcodata.f90](#).

**15.1.2.563 u\_muon\_tau\_mass\_ratio**

```
real(real64), parameter codata::u_muon_tau_mass_ratio =0.00040d-2
```

Definition at line 1092 of file [fcodata.f90](#).

**15.1.2.564 u\_natural\_unit\_of\_action**

```
real(real64), parameter codata::u_natural_unit_of_action =0.0d0
```

J s.

Definition at line 1097 of file [fcodata.f90](#).

**15.1.2.565 u\_natural\_unit\_of\_action\_in\_ev\_s**

```
real(real64), parameter codata::u_natural_unit_of_action_in_ev_s =0.0d0
```

eV s

Definition at line 1102 of file [fcodata.f90](#).

**15.1.2.566 u\_natural\_unit\_of\_energy**

```
real(real64), parameter codata::u_natural_unit_of_energy =0.0000000025d-14
```

J.

Definition at line 1107 of file [fcodata.f90](#).

**15.1.2.567 u\_natural\_unit\_of\_energy\_in\_mev**

```
real(real64), parameter codata::u_natural_unit_of_energy_in_mev =0.00000000015d0
```

MeV.

Definition at line 1112 of file [fcodata.f90](#).

**15.1.2.568 u\_natural\_unit\_of\_length**

```
real(real64), parameter codata::u_natural_unit_of_length =0.0000000012d-13
```

m

Definition at line 1117 of file [fcodata.f90](#).

**15.1.2.569 u\_natural\_unit\_of\_mass**

```
real(real64), parameter codata::u_natural_unit_of_mass =0.0000000028d-31
```

kg

Definition at line 1122 of file [fcodata.f90](#).

**15.1.2.570 u\_natural\_unit\_of\_momentum**

```
real(real64), parameter codata::u_natural_unit_of_momentum =0.00000000082d-22
```

kg m s<sup>-1</sup>

Definition at line 1127 of file [fcodata.f90](#).

**15.1.2.571 u\_natural\_unit\_of\_momentum\_in\_mev\_c**

```
real(real64), parameter codata::u_natural_unit_of_momentum_in_mev_c =0.00000000015d0
```

MeV/c.

Definition at line 1132 of file [fcodata.f90](#).

**15.1.2.572 u\_natural\_unit\_of\_time**

```
real(real64), parameter codata::u_natural_unit_of_time =0.00000000039d-21
```

s

Definition at line 1137 of file [fcodata.f90](#).

**15.1.2.573 u\_natural\_unit\_of\_velocity**

```
real(real64), parameter codata::u_natural_unit_of_velocity =0.0d0
```

m s<sup>-1</sup>

Definition at line 1142 of file [fcodata.f90](#).

**15.1.2.574 u\_neutron\_compton\_wavelength**

```
real(real64), parameter codata::u_neutron_compton_wavelength =0.00000000075d-15
```

m

Definition at line 1147 of file [fcodata.f90](#).

**15.1.2.575 u\_neutron\_electron\_mag\_\_mom\_\_ratio**

```
real(real64), parameter codata::u_neutron_electron_mag__mom__ratio =0.00000025d-3
```

Definition at line 1152 of file [fcodata.f90](#).

**15.1.2.576 u\_neutron\_electron\_mass\_ratio**

```
real(real64), parameter codata::u_neutron_electron_mass_ratio =0.00000089d0
```

Definition at line 1157 of file [fcodata.f90](#).

**15.1.2.577 u\_neutron\_g\_factor**

```
real(real64), parameter codata::u_neutron_g_factor =0.00000090d0
```

Definition at line 1162 of file [fcodata.f90](#).

**15.1.2.578 u\_neutron\_gyromag\_\_ratio**

```
real(real64), parameter codata::u_neutron_gyromag__ratio =0.00000043d8
```

$\text{s}^{-1} \text{T}^{-1}$

Definition at line 1167 of file [fcodata.f90](#).

**15.1.2.579 u\_neutron\_gyromag\_\_ratio\_in\_mhz\_t**

```
real(real64), parameter codata::u_neutron_gyromag__ratio_in_mhz_t =0.0000069d0
```

$\text{MHz T}^{-1}$ .

Definition at line 1172 of file [fcodata.f90](#).

**15.1.2.580 u\_neutron\_mag\_\_mom**

```
real(real64), parameter codata::u_neutron_mag__mom =0.0000023d-27
```

$\text{J T}^{-1}$ .

Definition at line 1177 of file [fcodata.f90](#).

**15.1.2.581 u\_neutron\_mag\_mom\_to\_bohr\_magneton\_ratio**

```
real(real64), parameter codata::u_neutron_mag_mom_to_bohr_magneton_ratio =0.00000025d-3
```

Definition at line 1182 of file [fcodata.f90](#).

**15.1.2.582 u\_neutron\_mag\_mom\_to\_nuclear\_magneton\_ratio**

```
real(real64), parameter codata::u_neutron_mag_mom_to_nuclear_magneton_ratio =0.00000045d0
```

Definition at line 1187 of file [fcodata.f90](#).

**15.1.2.583 u\_neutron\_mass**

```
real(real64), parameter codata::u_neutron_mass =0.00000000095d-27
```

kg

Definition at line 1192 of file [fcodata.f90](#).

**15.1.2.584 u\_neutron\_mass\_energy\_equivalent**

```
real(real64), parameter codata::u_neutron_mass_energy_equivalent =0.00000000086d-10
```

J.

Definition at line 1197 of file [fcodata.f90](#).

**15.1.2.585 u\_neutron\_mass\_energy\_equivalent\_in\_mev**

```
real(real64), parameter codata::u_neutron_mass_energy_equivalent_in_mev =0.00000054d0
```

MeV.

Definition at line 1202 of file [fcodata.f90](#).

**15.1.2.586 u\_neutron\_mass\_in\_u**

```
real(real64), parameter codata::u_neutron_mass_in_u =0.00000000049d0
```

u

Definition at line 1207 of file [fcodata.f90](#).

**15.1.2.587 u\_neutron\_molar\_mass**

```
real(real64), parameter codata::u_neutron_molar_mass =0.00000000057d-3
```

kg mol<sup>-1</sup>

Definition at line 1212 of file [fcodata.f90](#).

**15.1.2.588 u\_neutron\_muon\_mass\_ratio**

```
real(real64), parameter codata::u_neutron_muon_mass_ratio =0.00000020d0
```

Definition at line 1217 of file [fcodata.f90](#).

**15.1.2.589 u\_neutron\_proton\_mag\_\_mom\_\_ratio**

```
real(real64), parameter codata::u_neutron_proton_mag__mom__ratio =0.00000016d0
```

Definition at line 1222 of file [fcodata.f90](#).

**15.1.2.590 u\_neutron\_proton\_mass\_difference**

```
real(real64), parameter codata::u_neutron_proton_mass_difference =0.00000082d-30
```

kg

Definition at line 1227 of file [fcodata.f90](#).

**15.1.2.591 u\_neutron\_proton\_mass\_difference\_energy\_equivalent**

```
real(real64), parameter codata::u_neutron_proton_mass_difference_energy_equivalent =0.00000074d-13
```

J.

Definition at line 1232 of file [fcodata.f90](#).

**15.1.2.592 u\_neutron\_proton\_mass\_difference\_energy\_equivalent\_in\_mev**

```
real(real64), parameter codata::u_neutron_proton_mass_difference_energy_equivalent_in_mev  
=0.00000046d0
```

MeV.

Definition at line 1237 of file [fcodata.f90](#).

**15.1.2.593 u\_neutron\_proton\_mass\_difference\_in\_u**

```
real(real64), parameter codata::u_neutron_proton_mass_difference_in_u =0.00000049d-3
```

u

Definition at line 1242 of file [fcodata.f90](#).

**15.1.2.594 u\_neutron\_proton\_mass\_ratio**

```
real(real64), parameter codata::u_neutron_proton_mass_ratio =0.00000000049d0
```

Definition at line 1247 of file [fcodata.f90](#).

**15.1.2.595 u\_neutron\_relative\_atomic\_mass**

```
real(real64), parameter codata::u_neutron_relative_atomic_mass =0.00000000049d0
```

Definition at line 1252 of file [fcodata.f90](#).

**15.1.2.596 u\_neutron\_tau\_mass\_ratio**

```
real(real64), parameter codata::u_neutron_tau_mass_ratio =0.000036d0
```

Definition at line 1257 of file [fcodata.f90](#).

**15.1.2.597 u\_neutron\_to\_shielded\_proton\_mag\_\_mom\_\_ratio**

```
real(real64), parameter codata::u_neutron_to_shielded_proton_mag__mom__ratio =0.00000016d0
```

Definition at line 1262 of file [fcodata.f90](#).

**15.1.2.598 u\_newtonian\_constant\_of\_gravitation**

```
real(real64), parameter codata::u_newtonian_constant_of_gravitation =0.00015d-11
```

$\text{m}^3 \text{kg}^{-1} \text{s}^{-2}$

Definition at line 1267 of file [fcodata.f90](#).

**15.1.2.599 u\_newtonian\_constant\_of\_gravitation\_over\_h\_bar\_c**

```
real(real64), parameter codata::u_newtonian_constant_of_gravitation_over_h_bar_c =0.00015d-39
```

$(\text{GeV}/c^2)^{-2}$

Definition at line 1272 of file [fcodata.f90](#).

**15.1.2.600 u\_nuclear\_magneton**

```
real(real64), parameter codata::u_nuclear_magneton =0.0000000015d-27
```

$\text{J T}^{-1}$ .

Definition at line 1277 of file [fcodata.f90](#).



**15.1.2.601 u\_nuclear\_magneton\_in\_ev\_t**

```
real(real64), parameter codata::u_nuclear_magneton_in_ev_t =0.00000000096d-8
```

eV T<sup>-1</sup>

Definition at line 1282 of file [fcodata.f90](#).

**15.1.2.602 u\_nuclear\_magneton\_in\_inverse\_meter\_per\_tesla**

```
real(real64), parameter codata::u_nuclear_magneton_in_inverse_meter_per_tesla =0.00000000078d-2
```

m<sup>-1</sup> T<sup>-1</sup>

Definition at line 1287 of file [fcodata.f90](#).

**15.1.2.603 u\_nuclear\_magneton\_in\_k\_t**

```
real(real64), parameter codata::u_nuclear_magneton_in_k_t =0.0000000011d-4
```

K T<sup>-1</sup>.

Definition at line 1292 of file [fcodata.f90](#).

**15.1.2.604 u\_nuclear\_magneton\_in\_mhz\_t**

```
real(real64), parameter codata::u_nuclear_magneton_in_mhz_t =0.0000000023d0
```

MHz T<sup>-1</sup>.

Definition at line 1297 of file [fcodata.f90](#).

**15.1.2.605 u\_planck\_constant**

```
real(real64), parameter codata::u_planck_constant =0.0d0
```

J Hz<sup>-1</sup>.

Definition at line 1302 of file [fcodata.f90](#).

**15.1.2.606 u\_planck\_constant\_in\_ev\_hz**

```
real(real64), parameter codata::u_planck_constant_in_ev_hz =0.0d0
```

eV Hz<sup>-1</sup>

Definition at line 1307 of file [fcodata.f90](#).

**15.1.2.607 u\_planck\_length**

```
real(real64), parameter codata::u_planck_length =0.000018d-35
```

m

Definition at line 1312 of file [fcodata.f90](#).

**15.1.2.608 u\_planck\_mass**

```
real(real64), parameter codata::u_planck_mass =0.000024d-8
```

kg

Definition at line 1317 of file [fcodata.f90](#).

**15.1.2.609 u\_planck\_mass\_energy\_equivalent\_in\_gev**

```
real(real64), parameter codata::u_planck_mass_energy_equivalent_in_gev =0.000014d19
```

GeV.

Definition at line 1322 of file [fcodata.f90](#).

**15.1.2.610 u\_planck\_temperature**

```
real(real64), parameter codata::u_planck_temperature =0.000016d32
```

K.

Definition at line 1327 of file [fcodata.f90](#).

**15.1.2.611 u\_planck\_time**

```
real(real64), parameter codata::u_planck_time =0.000060d-44
```

s

Definition at line 1332 of file [fcodata.f90](#).

**15.1.2.612 u\_proton\_charge\_to\_mass\_quotient**

```
real(real64), parameter codata::u_proton_charge_to_mass_quotient =0.0000000029d7
```

C kg<sup>-1</sup>.

Definition at line 1337 of file [fcodata.f90](#).

**15.1.2.613 u\_proton\_compton\_wavelength**

```
real(real64), parameter codata::u_proton_compton_wavelength =0.00000000040d-15
```

m

Definition at line 1342 of file [fcodata.f90](#).

**15.1.2.614 u\_proton\_electron\_mass\_ratio**

```
real(real64), parameter codata::u_proton_electron_mass_ratio =0.00000011d0
```

Definition at line 1347 of file [fcodata.f90](#).

**15.1.2.615 u\_proton\_g\_factor**

```
real(real64), parameter codata::u_proton_g_factor =0.0000000016d0
```

Definition at line 1352 of file [fcodata.f90](#).

**15.1.2.616 u\_proton\_gyromag\_\_ratio**

```
real(real64), parameter codata::u_proton_gyromag__ratio =0.0000000011d8
```

$\text{s}^{-1} \text{T}^{-1}$

Definition at line [1357](#) of file [fcodata.f90](#).

**15.1.2.617 u\_proton\_gyromag\_\_ratio\_in\_mhz\_t**

```
real(real64), parameter codata::u_proton_gyromag__ratio_in_mhz_t =0.000000018d0
```

$\text{MHz T}^{-1}$ .

Definition at line [1362](#) of file [fcodata.f90](#).

**15.1.2.618 u\_proton\_mag\_\_mom**

```
real(real64), parameter codata::u_proton_mag__mom =0.00000000060d-26
```

$\text{J T}^{-1}$ .

Definition at line [1367](#) of file [fcodata.f90](#).

**15.1.2.619 u\_proton\_mag\_\_mom\_\_to\_bohr\_magneton\_ratio**

```
real(real64), parameter codata::u_proton_mag__mom__to_bohr_magneton_ratio =0.00000000046d-3
```

Definition at line [1372](#) of file [fcodata.f90](#).

**15.1.2.620 u\_proton\_mag\_\_mom\_\_to\_nuclear\_magneton\_ratio**

```
real(real64), parameter codata::u_proton_mag__mom__to_nuclear_magneton_ratio =0.00000000082d0
```

Definition at line [1377](#) of file [fcodata.f90](#).

**15.1.2.621 u\_proton\_mag\_shielding\_correction**

```
real(real64), parameter codata::u_proton_mag_shielding_correction =0.0011d-5
```

Definition at line 1382 of file [fcodata.f90](#).

**15.1.2.622 u\_proton\_mass**

```
real(real64), parameter codata::u_proton_mass =0.00000000051d-27
```

kg

Definition at line 1387 of file [fcodata.f90](#).

**15.1.2.623 u\_proton\_mass\_energy\_equivalent**

```
real(real64), parameter codata::u_proton_mass_energy_equivalent =0.00000000046d-10
```

J.

Definition at line 1392 of file [fcodata.f90](#).

**15.1.2.624 u\_proton\_mass\_energy\_equivalent\_in\_mev**

```
real(real64), parameter codata::u_proton_mass_energy_equivalent_in_mev =0.00000029d0
```

MeV.

Definition at line 1397 of file [fcodata.f90](#).

**15.1.2.625 u\_proton\_mass\_in\_u**

```
real(real64), parameter codata::u_proton_mass_in_u =0.00000000053d0
```

u

Definition at line 1402 of file [fcodata.f90](#).

**15.1.2.626 u\_proton\_molar\_mass**

```
real(real64), parameter codata::u_proton_molar_mass =0.00000000031d-3
```

kg mol<sup>-1</sup>

Definition at line 1407 of file [fcodata.f90](#).

**15.1.2.627 u\_proton\_muon\_mass\_ratio**

```
real(real64), parameter codata::u_proton_muon_mass_ratio =0.00000020d0
```

Definition at line 1412 of file [fcodata.f90](#).

**15.1.2.628 u\_proton\_neutron\_mag\_\_mom\_\_ratio**

```
real(real64), parameter codata::u_proton_neutron_mag__mom__ratio =0.00000034d0
```

Definition at line 1417 of file [fcodata.f90](#).

**15.1.2.629 u\_proton\_neutron\_mass\_ratio**

```
real(real64), parameter codata::u_proton_neutron_mass_ratio =0.00000000049d0
```

Definition at line 1422 of file [fcodata.f90](#).

**15.1.2.630 u\_proton\_relative\_atomic\_mass**

```
real(real64), parameter codata::u_proton_relative_atomic_mass =0.000000000053d0
```

Definition at line 1427 of file [fcodata.f90](#).

**15.1.2.631 u\_proton\_rms\_charge\_radius**

```
real(real64), parameter codata::u_proton_rms_charge_radius =0.019d-16
```

m

Definition at line 1432 of file [fcodata.f90](#).

**15.1.2.632 u\_proton\_tau\_mass\_ratio**

```
real(real64), parameter codata::u_proton_tau_mass_ratio =0.000036d0
```

Definition at line 1437 of file [fcodata.f90](#).

**15.1.2.633 u\_quantum\_of\_circulation**

```
real(real64), parameter codata::u_quantum_of_circulation =0.0000000011d-4
```

$m^2 s^{-1}$

Definition at line 1442 of file [fcodata.f90](#).

**15.1.2.634 u\_quantum\_of\_circulation\_times\_2**

```
real(real64), parameter codata::u_quantum_of_circulation_times_2 =0.0000000022d-4
```

$m^2 s^{-1}$

Definition at line 1447 of file [fcodata.f90](#).

**15.1.2.635 u\_reduced\_compton\_wavelength**

```
real(real64), parameter codata::u_reduced_compton_wavelength =0.0000000012d-13
```

m

Definition at line 1452 of file [fcodata.f90](#).

**15.1.2.636 u\_reduced\_muon\_compton\_wavelength**

```
real(real64), parameter codata::u_reduced_muon_compton_wavelength =0.000000042d-15
```

m

Definition at line 1457 of file [fcodata.f90](#).

**15.1.2.637 u\_reduced\_neutron\_compton\_wavelength**

```
real(real64), parameter codata::u_reduced_neutron_compton_wavelength =0.0000000012d-16
```

m

Definition at line 1462 of file [fcodata.f90](#).

**15.1.2.638 u\_reduced\_planck\_constant**

```
real(real64), parameter codata::u_reduced_planck_constant =0.0d0
```

J s.

Definition at line 1467 of file [fcodata.f90](#).

**15.1.2.639 u\_reduced\_planck\_constant\_in\_ev\_s**

```
real(real64), parameter codata::u_reduced_planck_constant_in_ev_s =0.0d0
```

eV s

Definition at line 1472 of file [fcodata.f90](#).

**15.1.2.640 u\_reduced\_planck\_constant\_times\_c\_in\_mev\_fm**

```
real(real64), parameter codata::u_reduced_planck_constant_times_c_in_mev_fm =0.0d0
```

MeV fm.

Definition at line 1477 of file [fcodata.f90](#).

**15.1.2.641 u\_reduced\_proton\_compton\_wavelength**

```
real(real64), parameter codata::u_reduced_proton_compton_wavelength =0.00000000064d-16
```

m

Definition at line 1482 of file [fcodata.f90](#).



**15.1.2.642 u\_reduced\_tau\_compton\_wavelength**

```
real(real64), parameter codata::u_reduced_tau_compton_wavelength =0.000075d-16
```

m

Definition at line 1487 of file [fcodata.f90](#).

**15.1.2.643 u\_rydberg\_constant**

```
real(real64), parameter codata::u_rydberg_constant =0.000021d0
```

m<sup>-1</sup>

Definition at line 1492 of file [fcodata.f90](#).

**15.1.2.644 u\_rydberg\_constant\_times\_c\_in\_hz**

```
real(real64), parameter codata::u_rydberg_constant_times_c_in_hz =0.0000000000064d15
```

Hz.

Definition at line 1497 of file [fcodata.f90](#).

**15.1.2.645 u\_rydberg\_constant\_times\_hc\_in\_ev**

```
real(real64), parameter codata::u_rydberg_constant_times_hc_in_ev =0.000000000026d0
```

eV

Definition at line 1502 of file [fcodata.f90](#).

**15.1.2.646 u\_rydberg\_constant\_times\_hc\_in\_j**

```
real(real64), parameter codata::u_rydberg_constant_times_hc_in_j =0.0000000000042d-18
```

J.

Definition at line 1507 of file [fcodata.f90](#).

**15.1.2.647 u\_sackur\_tetrode\_constant\_\_1\_k\_\_100\_kpa**

```
real(real64), parameter codata::u_sackur_tetrode_constant__1_k__100_kpa =0.00000000045d0
```

Definition at line 1512 of file [fcodata.f90](#).

**15.1.2.648 u\_sackur\_tetrode\_constant\_\_1\_k\_\_101\_325\_kpa**

```
real(real64), parameter codata::u_sackur_tetrode_constant__1_k__101_325_kpa =0.00000000045d0
```

Definition at line 1517 of file [fcodata.f90](#).

**15.1.2.649 u\_second\_radiation\_constant**

```
real(real64), parameter codata::u_second_radiation_constant =0.0d0
```

m K

Definition at line 1522 of file [fcodata.f90](#).

**15.1.2.650 u\_shielded\_helion\_gyromag\_\_ratio**

```
real(real64), parameter codata::u_shielded_helion_gyromag__ratio =0.000000024d8
```

$s^{-1} T^{-1}$

Definition at line 1527 of file [fcodata.f90](#).

**15.1.2.651 u\_shielded\_helion\_gyromag\_\_ratio\_in\_mhz\_t**

```
real(real64), parameter codata::u_shielded_helion_gyromag__ratio_in_mhz_t =0.00000038d0
```

MHz  $T^{-1}$ .

Definition at line 1532 of file [fcodata.f90](#).

**15.1.2.652 u\_shielded\_helion\_mag\_\_mom**

```
real(real64), parameter codata::u_shielded_helion_mag__mom =0.000000013d-26
```

$J T^{-1}$ .

Definition at line 1537 of file [fcodata.f90](#).

**15.1.2.653 u\_shielded\_helion\_mag\_\_mom\_\_to\_bohr\_magneton\_ratio**

```
real(real64), parameter codata::u_shielded_helion_mag__mom__to_bohr_magneton_ratio =0.000000014d-3
```

Definition at line 1542 of file [fcodata.f90](#).

**15.1.2.654 u\_shielded\_helion\_mag\_\_mom\_\_to\_nuclear\_magneton\_ratio**

```
real(real64), parameter codata::u_shielded_helion_mag__mom__to_nuclear_magneton_ratio =0.↵  
0000000025d0
```

Definition at line 1547 of file [fcodata.f90](#).

**15.1.2.655 u\_shielded\_helion\_to\_proton\_mag\_\_mom\_\_ratio**

```
real(real64), parameter codata::u_shielded_helion_to_proton_mag__mom__ratio =0.0000000089d0
```

Definition at line 1552 of file [fcodata.f90](#).

**15.1.2.656 u\_shielded\_helion\_to\_shielded\_proton\_mag\_\_mom\_\_ratio**

```
real(real64), parameter codata::u_shielded_helion_to_shielded_proton_mag__mom__ratio =0.↵  
0000000033d0
```

Definition at line 1557 of file [fcodata.f90](#).

**15.1.2.657 u\_shielded\_proton\_gyromag\_\_ratio**

```
real(real64), parameter codata::u_shielded_proton_gyromag__ratio =0.000000029d8
```

$s^{-1} T^{-1}$

Definition at line 1562 of file [fcodata.f90](#).

**15.1.2.658 u\_shielded\_proton\_gyromag\_\_ratio\_in\_mhz\_t**

```
real(real64), parameter codata::u_shielded_proton_gyromag__ratio_in_mhz_t =0.00000046d0
```

MHz T<sup>-1</sup>.

Definition at line 1567 of file [fcodata.f90](#).

**15.1.2.659 u\_shielded\_proton\_mag\_\_mom**

```
real(real64), parameter codata::u_shielded_proton_mag__mom =0.000000015d-26
```

J T<sup>-1</sup>.

Definition at line 1572 of file [fcodata.f90](#).

**15.1.2.660 u\_shielded\_proton\_mag\_\_mom\_\_to\_bohr\_magneton\_ratio**

```
real(real64), parameter codata::u_shielded_proton_mag__mom__to_bohr_magneton_ratio =0.000000017d-3
```

Definition at line 1577 of file [fcodata.f90](#).

**15.1.2.661 u\_shielded\_proton\_mag\_\_mom\_\_to\_nuclear\_magneton\_ratio**

```
real(real64), parameter codata::u_shielded_proton_mag__mom__to_nuclear_magneton_ratio =0.↵  
000000030d0
```

Definition at line 1582 of file [fcodata.f90](#).

**15.1.2.662 u\_shielding\_difference\_of\_d\_and\_p\_in\_hd**

```
real(real64), parameter codata::u_shielding_difference_of_d_and_p_in_hd =0.0020d-8
```

Definition at line 1587 of file [fcodata.f90](#).

**15.1.2.663 u\_shielding\_difference\_of\_t\_and\_p\_in\_ht**

```
real(real64), parameter codata::u_shielding_difference_of_t_and_p_in_ht =0.0020d-8
```

Definition at line 1592 of file [fcodata.f90](#).

**15.1.2.664 u\_speed\_of\_light\_in\_vacuum**

```
real(real64), parameter codata::u_speed_of_light_in_vacuum =0.0d0
```

$\text{m s}^{-1}$

Definition at line 1597 of file [fcodata.f90](#).

**15.1.2.665 u\_standard\_acceleration\_of\_gravity**

```
real(real64), parameter codata::u_standard_acceleration_of_gravity =0.0d0
```

$\text{m s}^{-2}$

Definition at line 1602 of file [fcodata.f90](#).

**15.1.2.666 u\_standard\_atmosphere**

```
real(real64), parameter codata::u_standard_atmosphere =0.0d0
```

Pa.

Definition at line 1607 of file [fcodata.f90](#).

**15.1.2.667 u\_standard\_state\_pressure**

```
real(real64), parameter codata::u_standard_state_pressure =0.0d0
```

Pa.

Definition at line 1612 of file [fcodata.f90](#).

**15.1.2.668 u\_stefan\_boltzmann\_constant**

```
real(real64), parameter codata::u_stefan_boltzmann_constant =0.0d0
```

$\text{W m}^{-2} \text{K}^{-4}$ .

Definition at line 1617 of file [fcodata.f90](#).

**15.1.2.669 u\_tau\_compton\_wavelength**

```
real(real64), parameter codata::u_tau_compton_wavelength =0.00047d-16
```

m

Definition at line 1622 of file [fcodata.f90](#).

**15.1.2.670 u\_tau\_electron\_mass\_ratio**

```
real(real64), parameter codata::u_tau_electron_mass_ratio =0.23d0
```

Definition at line 1627 of file [fcodata.f90](#).

**15.1.2.671 u\_tau\_energy\_equivalent**

```
real(real64), parameter codata::u_tau_energy_equivalent =0.12d0
```

MeV.

Definition at line 1632 of file [fcodata.f90](#).

**15.1.2.672 u\_tau\_mass**

```
real(real64), parameter codata::u_tau_mass =0.00021d-27
```

kg

Definition at line 1637 of file [fcodata.f90](#).

**15.1.2.673 u\_tau\_mass\_energy\_equivalent**

```
real(real64), parameter codata::u_tau_mass_energy_equivalent =0.00019d-10
```

J.

Definition at line 1642 of file [fcodata.f90](#).

**15.1.2.674 u\_tau\_mass\_in\_u**

```
real(real64), parameter codata::u_tau_mass_in_u =0.00013d0
```

u

Definition at line 1647 of file [fcodata.f90](#).

**15.1.2.675 u\_tau\_molar\_mass**

```
real(real64), parameter codata::u_tau_molar_mass =0.00013d-3
```

kg mol<sup>-1</sup>

Definition at line 1652 of file [fcodata.f90](#).

**15.1.2.676 u\_tau\_muon\_mass\_ratio**

```
real(real64), parameter codata::u_tau_muon_mass_ratio =0.0011d0
```

Definition at line 1657 of file [fcodata.f90](#).

**15.1.2.677 u\_tau\_neutron\_mass\_ratio**

```
real(real64), parameter codata::u_tau_neutron_mass_ratio =0.00013d0
```

Definition at line 1662 of file [fcodata.f90](#).

**15.1.2.678 u\_tau\_proton\_mass\_ratio**

```
real(real64), parameter codata::u_tau_proton_mass_ratio =0.00013d0
```

Definition at line 1667 of file [fcodata.f90](#).

**15.1.2.679 u\_thomson\_cross\_section**

```
real(real64), parameter codata::u_thomson_cross_section =0.0000000060d-29
```

m<sup>2</sup>

Definition at line 1672 of file [fcodata.f90](#).

**15.1.2.680 u\_triton\_electron\_mass\_ratio**

```
real(real64), parameter codata::u_triton_electron_mass_ratio =0.00000027d0
```

Definition at line 1677 of file [fcodata.f90](#).

**15.1.2.681 u\_triton\_g\_factor**

```
real(real64), parameter codata::u_triton_g_factor =0.000000012d0
```

Definition at line 1682 of file [fcodata.f90](#).

**15.1.2.682 u\_triton\_mag\_\_mom**

```
real(real64), parameter codata::u_triton_mag__mom =0.0000000030d-26
```

$J T^{-1}$ .

Definition at line 1687 of file [fcodata.f90](#).

**15.1.2.683 u\_triton\_mag\_\_mom\_\_to\_bohr\_magneton\_ratio**

```
real(real64), parameter codata::u_triton_mag__mom__to_bohr_magneton_ratio =0.0000000032d-3
```

Definition at line 1692 of file [fcodata.f90](#).

**15.1.2.684 u\_triton\_mag\_\_mom\_\_to\_nuclear\_magneton\_ratio**

```
real(real64), parameter codata::u_triton_mag__mom__to_nuclear_magneton_ratio =0.0000000059d0
```

Definition at line 1697 of file [fcodata.f90](#).

**15.1.2.685 u\_triton\_mass**

```
real(real64), parameter codata::u_triton_mass =0.0000000015d-27
```

kg

Definition at line 1702 of file [fcodata.f90](#).



**15.1.2.686 u\_triton\_mass\_energy\_equivalent**

```
real(real64), parameter codata::u_triton_mass_energy_equivalent =0.0000000014d-10
```

J.

Definition at line 1707 of file [fcodata.f90](#).

**15.1.2.687 u\_triton\_mass\_energy\_equivalent\_in\_mev**

```
real(real64), parameter codata::u_triton_mass_energy_equivalent_in_mev =0.00000085d0
```

MeV.

Definition at line 1712 of file [fcodata.f90](#).

**15.1.2.688 u\_triton\_mass\_in\_u**

```
real(real64), parameter codata::u_triton_mass_in_u =0.00000000012d0
```

u

Definition at line 1717 of file [fcodata.f90](#).

**15.1.2.689 u\_triton\_molar\_mass**

```
real(real64), parameter codata::u_triton_molar_mass =0.00000000092d-3
```

kg mol<sup>-1</sup>

Definition at line 1722 of file [fcodata.f90](#).

**15.1.2.690 u\_triton\_proton\_mass\_ratio**

```
real(real64), parameter codata::u_triton_proton_mass_ratio =0.00000000015d0
```

Definition at line 1727 of file [fcodata.f90](#).

**15.1.2.691 u\_triton\_relative\_atomic\_mass**

```
real(real64), parameter codata::u_triton_relative_atomic_mass =0.00000000012d0
```

Definition at line 1732 of file [fcodata.f90](#).

**15.1.2.692 u\_triton\_to\_proton\_mag\_\_mom\_\_ratio**

```
real(real64), parameter codata::u_triton_to_proton_mag__mom__ratio =0.0000000021d0
```

Definition at line 1737 of file [fcodata.f90](#).

**15.1.2.693 u\_unified\_atomic\_mass\_unit**

```
real(real64), parameter codata::u_unified_atomic_mass_unit =0.00000000050d-27
```

kg

Definition at line 1742 of file [fcodata.f90](#).

**15.1.2.694 u\_vacuum\_electric\_permittivity**

```
real(real64), parameter codata::u_vacuum_electric_permittivity =0.0000000013d-12
```

F m<sup>-1</sup>.

Definition at line 1747 of file [fcodata.f90](#).

**15.1.2.695 u\_vacuum\_mag\_\_permeability**

```
real(real64), parameter codata::u_vacuum_mag__permeability =0.00000000019d-6
```

N A<sup>-2</sup>.

Definition at line 1752 of file [fcodata.f90](#).

**15.1.2.696 u\_von\_klitzing\_constant**

```
real(real64), parameter codata::u_von_klitzing_constant =0.0d0
```

ohm

Definition at line 1757 of file [fcodata.f90](#).

**15.1.2.697 u\_w\_to\_z\_mass\_ratio**

```
real(real64), parameter codata::u_w_to_z_mass_ratio =0.00017d0
```

Definition at line 1777 of file [fcodata.f90](#).

**15.1.2.698 u\_weak\_mixing\_angle**

```
real(real64), parameter codata::u_weak_mixing_angle =0.00030d0
```

Definition at line 1762 of file [fcodata.f90](#).

**15.1.2.699 u\_wien\_frequency\_displacement\_law\_constant**

```
real(real64), parameter codata::u_wien_frequency_displacement_law_constant =0.0d0
```

Hz K<sup>-1</sup>.

Definition at line 1767 of file [fcodata.f90](#).

**15.1.2.700 u\_wien\_wavelength\_displacement\_law\_constant**

```
real(real64), parameter codata::u_wien_wavelength_displacement_law_constant =0.0d0
```

m K

Definition at line 1772 of file [fcodata.f90](#).

**15.1.2.701 unified\_atomic\_mass\_unit**

```
real(real64), parameter codata::unified_atomic_mass_unit =1.66053906660d-27
```

kg

Definition at line 1740 of file [fcodata.f90](#).

**15.1.2.702 vacuum\_electric\_permittivity**

```
real(real64), parameter codata::vacuum_electric_permittivity =8.8541878128d-12
```

F m<sup>-1</sup>.

Definition at line 1745 of file [fcodata.f90](#).

**15.1.2.703 vacuum\_mag\_\_permeability**

```
real(real64), parameter codata::vacuum_mag__permeability =1.25663706212d-6
```

N A<sup>-2</sup>.

Definition at line 1750 of file [fcodata.f90](#).

**15.1.2.704 von\_klitzing\_constant**

```
real(real64), parameter codata::von_klitzing_constant =25812.80745d0
```

ohm

Definition at line 1755 of file [fcodata.f90](#).

**15.1.2.705 w\_to\_z\_mass\_ratio**

```
real(real64), parameter codata::w_to_z_mass_ratio =0.88153d0
```

Definition at line 1775 of file [fcodata.f90](#).

### 15.1.2.706 weak\_mixing\_angle

`real(real64), parameter codata::weak_mixing_angle = 0.22290d0`

Definition at line 1760 of file [fcodata.f90](#).

### 15.1.2.707 wien\_frequency\_displacement\_law\_constant

`real(real64), parameter codata::wien_frequency_displacement_law_constant = 5.878925757d10`

Hz K<sup>-1</sup>.

Definition at line 1765 of file [fcodata.f90](#).

### 15.1.2.708 wien\_wavelength\_displacement\_law\_constant

`real(real64), parameter codata::wien_wavelength_displacement_law_constant = 2.897771955d-3`

m K

Definition at line 1770 of file [fcodata.f90](#).

## 15.2 pycodata Namespace Reference

### Variables

- float [ALPHA\\_PARTICLE\\_ELECTRON\\_MASS\\_RATIO](#) = 7294.29954142e0
- float [U\\_ALPHA\\_PARTICLE\\_ELECTRON\\_MASS\\_RATIO](#) = 0.00000024e0
- float [ALPHA\\_PARTICLE\\_MASS](#) = 6.6446573357e-27
- float [U\\_ALPHA\\_PARTICLE\\_MASS](#) = 0.0000000020e-27
- float [ALPHA\\_PARTICLE\\_MASS\\_ENERGY\\_EQUIVALENT](#) = 5.9719201914e-10
- float [U\\_ALPHA\\_PARTICLE\\_MASS\\_ENERGY\\_EQUIVALENT](#) = 0.0000000018e-10
- float [ALPHA\\_PARTICLE\\_MASS\\_ENERGY\\_EQUIVALENT\\_IN\\_MEV](#) = 3727.3794066e0
- float [U\\_ALPHA\\_PARTICLE\\_MASS\\_ENERGY\\_EQUIVALENT\\_IN\\_MEV](#) = 0.0000011e0
- float [ALPHA\\_PARTICLE\\_MASS\\_IN\\_U](#) = 4.001506179127e0
- float [U\\_ALPHA\\_PARTICLE\\_MASS\\_IN\\_U](#) = 0.000000000063e0
- float [ALPHA\\_PARTICLE\\_MOLAR\\_MASS](#) = 4.0015061777e-3
- float [U\\_ALPHA\\_PARTICLE\\_MOLAR\\_MASS](#) = 0.0000000012e-3
- float [ALPHA\\_PARTICLE\\_PROTON\\_MASS\\_RATIO](#) = 3.97259969009e0
- float [U\\_ALPHA\\_PARTICLE\\_PROTON\\_MASS\\_RATIO](#) = 0.00000000022e0
- float [ALPHA\\_PARTICLE\\_RELATIVE\\_ATOMIC\\_MASS](#) = 4.001506179127e0
- float [U\\_ALPHA\\_PARTICLE\\_RELATIVE\\_ATOMIC\\_MASS](#) = 0.000000000063e0
- float [ANGSTROM\\_STAR](#) = 1.00001495e-10
- float [U\\_ANGSTROM\\_STAR](#) = 0.000000090e-10
- float [ATOMIC\\_MASS\\_CONSTANT](#) = 1.66053906660e-27
- float [U\\_ATOMIC\\_MASS\\_CONSTANT](#) = 0.00000000050e-27

- float `ATOMIC_MASS_CONSTANT_ENERGY_EQUIVALENT` = 1.49241808560e-10
- float `U_ATOMIC_MASS_CONSTANT_ENERGY_EQUIVALENT` = 0.00000000045e-10
- float `ATOMIC_MASS_CONSTANT_ENERGY_EQUIVALENT_IN_MEV` = 931.49410242e0
- float `U_ATOMIC_MASS_CONSTANT_ENERGY_EQUIVALENT_IN_MEV` = 0.00000028e0
- float `ATOMIC_MASS_UNIT_ELECTRON_VOLT_RELATIONSHIP` = 9.3149410242e8
- float `U_ATOMIC_MASS_UNIT_ELECTRON_VOLT_RELATIONSHIP` = 0.0000000028e8
- float `ATOMIC_MASS_UNIT_HARTREE_RELATIONSHIP` = 3.4231776874e7
- float `U_ATOMIC_MASS_UNIT_HARTREE_RELATIONSHIP` = 0.0000000010e7
- float `ATOMIC_MASS_UNIT_HERTZ_RELATIONSHIP` = 2.25234271871e23
- float `U_ATOMIC_MASS_UNIT_HERTZ_RELATIONSHIP` = 0.00000000068e23
- float `ATOMIC_MASS_UNIT_INVERSE_METER_RELATIONSHIP` = 7.5130066104e14
- float `U_ATOMIC_MASS_UNIT_INVERSE_METER_RELATIONSHIP` = 0.0000000023e14
- float `ATOMIC_MASS_UNIT_JOULE_RELATIONSHIP` = 1.49241808560e-10
- float `U_ATOMIC_MASS_UNIT_JOULE_RELATIONSHIP` = 0.00000000045e-10
- float `ATOMIC_MASS_UNIT_KELVIN_RELATIONSHIP` = 1.08095401916e13
- float `U_ATOMIC_MASS_UNIT_KELVIN_RELATIONSHIP` = 0.00000000033e13
- float `ATOMIC_MASS_UNIT_KILOGRAM_RELATIONSHIP` = 1.66053906660e-27
- float `U_ATOMIC_MASS_UNIT_KILOGRAM_RELATIONSHIP` = 0.00000000050e-27
- float `ATOMIC_UNIT_OF_1ST_HYPERPOLARIZABILITY` = 3.2063613061e-53
- float `U_ATOMIC_UNIT_OF_1ST_HYPERPOLARIZABILITY` = 0.0000000015e-53
- float `ATOMIC_UNIT_OF_2ND_HYPERPOLARIZABILITY` = 6.2353799905e-65
- float `U_ATOMIC_UNIT_OF_2ND_HYPERPOLARIZABILITY` = 0.0000000038e-65
- float `ATOMIC_UNIT_OF_ACTION` = 1.054571817e-34
- float `U_ATOMIC_UNIT_OF_ACTION` = 0.0e0
- float `ATOMIC_UNIT_OF_CHARGE` = 1.602176634e-19
- float `U_ATOMIC_UNIT_OF_CHARGE` = 0.0e0
- float `ATOMIC_UNIT_OF_CHARGE_DENSITY` = 1.08120238457e12
- float `U_ATOMIC_UNIT_OF_CHARGE_DENSITY` = 0.00000000049e12
- float `ATOMIC_UNIT_OF_CURRENT` = 6.623618237510e-3
- float `U_ATOMIC_UNIT_OF_CURRENT` = 0.00000000013e-3
- float `ATOMIC_UNIT_OF_ELECTRIC_DIPOLE_MOM` = 8.4783536255e-30
- float `U_ATOMIC_UNIT_OF_ELECTRIC_DIPOLE_MOM` = 0.0000000013e-30
- float `ATOMIC_UNIT_OF_ELECTRIC_FIELD` = 5.14220674763e11
- float `U_ATOMIC_UNIT_OF_ELECTRIC_FIELD` = 0.00000000078e11
- float `ATOMIC_UNIT_OF_ELECTRIC_FIELD_GRADIENT` = 9.7173624292e21
- float `U_ATOMIC_UNIT_OF_ELECTRIC_FIELD_GRADIENT` = 0.0000000029e21
- float `ATOMIC_UNIT_OF_ELECTRIC_POLARIZABILITY` = 1.64877727436e-41
- float `U_ATOMIC_UNIT_OF_ELECTRIC_POLARIZABILITY` = 0.00000000050e-41
- float `ATOMIC_UNIT_OF_ELECTRIC_POTENTIAL` = 27.211386245988e0
- float `U_ATOMIC_UNIT_OF_ELECTRIC_POTENTIAL` = 0.000000000053e0
- float `ATOMIC_UNIT_OF_ELECTRIC_QUADRUPOLE_MOM` = 4.4865515246e-40
- float `U_ATOMIC_UNIT_OF_ELECTRIC_QUADRUPOLE_MOM` = 0.0000000014e-40
- float `ATOMIC_UNIT_OF_ENERGY` = 4.3597447222071e-18
- float `U_ATOMIC_UNIT_OF_ENERGY` = 0.0000000000085e-18
- float `ATOMIC_UNIT_OF_FORCE` = 8.2387234983e-8
- float `U_ATOMIC_UNIT_OF_FORCE` = 0.0000000012e-8
- float `ATOMIC_UNIT_OF_LENGTH` = 5.29177210903e-11
- float `U_ATOMIC_UNIT_OF_LENGTH` = 0.00000000080e-11
- float `ATOMIC_UNIT_OF_MAG__DIPOLE_MOM` = 1.85480201566e-23
- float `U_ATOMIC_UNIT_OF_MAG__DIPOLE_MOM` = 0.00000000056e-23
- float `ATOMIC_UNIT_OF_MAG__FLUX_DENSITY` = 2.35051756758e5
- float `U_ATOMIC_UNIT_OF_MAG__FLUX_DENSITY` = 0.00000000071e5
- float `ATOMIC_UNIT_OF_MAGNETIZABILITY` = 7.8910366008e-29
- float `U_ATOMIC_UNIT_OF_MAGNETIZABILITY` = 0.0000000048e-29
- float `ATOMIC_UNIT_OF_MASS` = 9.1093837015e-31

- float [U\\_ATOMIC\\_UNIT\\_OF\\_MASS](#) = 0.0000000028e-31
- float [ATOMIC\\_UNIT\\_OF\\_MOMENTUM](#) = 1.99285191410e-24
- float [U\\_ATOMIC\\_UNIT\\_OF\\_MOMENTUM](#) = 0.00000000030e-24
- float [ATOMIC\\_UNIT\\_OF\\_PERMITTIVITY](#) = 1.11265005545e-10
- float [U\\_ATOMIC\\_UNIT\\_OF\\_PERMITTIVITY](#) = 0.00000000017e-10
- float [ATOMIC\\_UNIT\\_OF\\_TIME](#) = 2.4188843265857e-17
- float [U\\_ATOMIC\\_UNIT\\_OF\\_TIME](#) = 0.0000000000047e-17
- float [ATOMIC\\_UNIT\\_OF\\_VELOCITY](#) = 2.18769126364e6
- float [U\\_ATOMIC\\_UNIT\\_OF\\_VELOCITY](#) = 0.00000000033e6
- float [AVOGADRO\\_CONSTANT](#) = 6.02214076e23
- float [U\\_AVOGADRO\\_CONSTANT](#) = 0.0e0
- float [BOHR\\_MAGNETON](#) = 9.2740100783e-24
- float [U\\_BOHR\\_MAGNETON](#) = 0.0000000028e-24
- float [BOHR\\_MAGNETON\\_IN\\_EV\\_T](#) = 5.7883818060e-5
- float [U\\_BOHR\\_MAGNETON\\_IN\\_EV\\_T](#) = 0.00000000017e-5
- float [BOHR\\_MAGNETON\\_IN\\_HZ\\_T](#) = 1.39962449361e10
- float [U\\_BOHR\\_MAGNETON\\_IN\\_HZ\\_T](#) = 0.00000000042e10
- float [BOHR\\_MAGNETON\\_IN\\_INVERSE\\_METER\\_PER\\_TESLA](#) = 46.686447783e0
- float [U\\_BOHR\\_MAGNETON\\_IN\\_INVERSE\\_METER\\_PER\\_TESLA](#) = 0.000000014e0
- float [BOHR\\_MAGNETON\\_IN\\_K\\_T](#) = 0.67171381563e0
- float [U\\_BOHR\\_MAGNETON\\_IN\\_K\\_T](#) = 0.00000000020e0
- float [BOHR\\_RADIUS](#) = 5.29177210903e-11
- float [U\\_BOHR\\_RADIUS](#) = 0.00000000080e-11
- float [BOLTZMANN\\_CONSTANT](#) = 1.380649e-23
- float [U\\_BOLTZMANN\\_CONSTANT](#) = 0.0e0
- float [BOLTZMANN\\_CONSTANT\\_IN\\_EV\\_K](#) = 8.617333262e-5
- float [U\\_BOLTZMANN\\_CONSTANT\\_IN\\_EV\\_K](#) = 0.0e0
- float [BOLTZMANN\\_CONSTANT\\_IN\\_HZ\\_K](#) = 2.083661912e10
- float [U\\_BOLTZMANN\\_CONSTANT\\_IN\\_HZ\\_K](#) = 0.0e0
- float [BOLTZMANN\\_CONSTANT\\_IN\\_INVERSE\\_METER\\_PER\\_KELVIN](#) = 69.50348004e0
- float [U\\_BOLTZMANN\\_CONSTANT\\_IN\\_INVERSE\\_METER\\_PER\\_KELVIN](#) = 0.0e0
- float [CHARACTERISTIC\\_IMPEDANCE\\_OF\\_VACUUM](#) = 376.730313668e0
- float [U\\_CHARACTERISTIC\\_IMPEDANCE\\_OF\\_VACUUM](#) = 0.000000057e0
- float [CLASSICAL\\_ELECTRON\\_RADIUS](#) = 2.8179403262e-15
- float [U\\_CLASSICAL\\_ELECTRON\\_RADIUS](#) = 0.0000000013e-15
- float [COMPTON\\_WAVELENGTH](#) = 2.42631023867e-12
- float [U\\_COMPTON\\_WAVELENGTH](#) = 0.00000000073e-12
- float [CONDUCTANCE\\_QUANTUM](#) = 7.748091729e-5
- float [U\\_CONDUCTANCE\\_QUANTUM](#) = 0.0e0
- float [CONVENTIONAL\\_VALUE\\_OF\\_AMPERE\\_90](#) = 1.00000008887e0
- float [U\\_CONVENTIONAL\\_VALUE\\_OF\\_AMPERE\\_90](#) = 0.0e0
- float [CONVENTIONAL\\_VALUE\\_OF\\_COULOMB\\_90](#) = 1.00000008887e0
- float [U\\_CONVENTIONAL\\_VALUE\\_OF\\_COULOMB\\_90](#) = 0.0e0
- float [CONVENTIONAL\\_VALUE\\_OF\\_FARAD\\_90](#) = 0.99999998220e0
- float [U\\_CONVENTIONAL\\_VALUE\\_OF\\_FARAD\\_90](#) = 0.0e0
- float [CONVENTIONAL\\_VALUE\\_OF\\_HENRY\\_90](#) = 1.00000001779e0
- float [U\\_CONVENTIONAL\\_VALUE\\_OF\\_HENRY\\_90](#) = 0.0e0
- float [CONVENTIONAL\\_VALUE\\_OF\\_JOSEPHSON\\_CONSTANT](#) = 483597.9e9
- float [U\\_CONVENTIONAL\\_VALUE\\_OF\\_JOSEPHSON\\_CONSTANT](#) = 0.0e0
- float [CONVENTIONAL\\_VALUE\\_OF\\_OHM\\_90](#) = 1.00000001779e0
- float [U\\_CONVENTIONAL\\_VALUE\\_OF\\_OHM\\_90](#) = 0.0e0
- float [CONVENTIONAL\\_VALUE\\_OF\\_VOLT\\_90](#) = 1.00000010666e0
- float [U\\_CONVENTIONAL\\_VALUE\\_OF\\_VOLT\\_90](#) = 0.0e0
- float [CONVENTIONAL\\_VALUE\\_OF\\_VON\\_KLITZING\\_CONSTANT](#) = 25812.807e0
- float [U\\_CONVENTIONAL\\_VALUE\\_OF\\_VON\\_KLITZING\\_CONSTANT](#) = 0.0e0

- float [CONVENTIONAL\\_VALUE\\_OF\\_WATT\\_90](#) = 1.00000019553e0
- float [U\\_CONVENTIONAL\\_VALUE\\_OF\\_WATT\\_90](#) = 0.0e0
- float [COPPER\\_X\\_UNIT](#) = 1.00207697e-13
- float [U\\_COPPER\\_X\\_UNIT](#) = 0.00000028e-13
- float [DEUTERON\\_ELECTRON\\_MAG\\_MOM\\_RATIO](#) = -4.664345551e-4
- float [U\\_DEUTERON\\_ELECTRON\\_MAG\\_MOM\\_RATIO](#) = 0.000000012e-4
- float [DEUTERON\\_ELECTRON\\_MASS\\_RATIO](#) = 3670.48296788e0
- float [U\\_DEUTERON\\_ELECTRON\\_MASS\\_RATIO](#) = 0.00000013e0
- float [DEUTERON\\_G\\_FACTOR](#) = 0.8574382338e0
- float [U\\_DEUTERON\\_G\\_FACTOR](#) = 0.0000000022e0
- float [DEUTERON\\_MAG\\_MOM](#) = 4.330735094e-27
- float [U\\_DEUTERON\\_MAG\\_MOM](#) = 0.000000011e-27
- float [DEUTERON\\_MAG\\_MOM\\_TO\\_BOHR\\_MAGNETON\\_RATIO](#) = 4.669754570e-4
- float [U\\_DEUTERON\\_MAG\\_MOM\\_TO\\_BOHR\\_MAGNETON\\_RATIO](#) = 0.000000012e-4
- float [DEUTERON\\_MAG\\_MOM\\_TO\\_NUCLEAR\\_MAGNETON\\_RATIO](#) = 0.8574382338e0
- float [U\\_DEUTERON\\_MAG\\_MOM\\_TO\\_NUCLEAR\\_MAGNETON\\_RATIO](#) = 0.0000000022e0
- float [DEUTERON\\_MASS](#) = 3.3435837724e-27
- float [U\\_DEUTERON\\_MASS](#) = 0.0000000010e-27
- float [DEUTERON\\_MASS\\_ENERGY\\_EQUIVALENT](#) = 3.00506323102e-10
- float [U\\_DEUTERON\\_MASS\\_ENERGY\\_EQUIVALENT](#) = 0.00000000091e-10
- float [DEUTERON\\_MASS\\_ENERGY\\_EQUIVALENT\\_IN\\_MEV](#) = 1875.61294257e0
- float [U\\_DEUTERON\\_MASS\\_ENERGY\\_EQUIVALENT\\_IN\\_MEV](#) = 0.000000057e0
- float [DEUTERON\\_MASS\\_IN\\_U](#) = 2.013553212745e0
- float [U\\_DEUTERON\\_MASS\\_IN\\_U](#) = 0.00000000040e0
- float [DEUTERON\\_MOLAR\\_MASS](#) = 2.01355321205e-3
- float [U\\_DEUTERON\\_MOLAR\\_MASS](#) = 0.00000000061e-3
- float [DEUTERON\\_NEUTRON\\_MAG\\_MOM\\_RATIO](#) = -0.44820653e0
- float [U\\_DEUTERON\\_NEUTRON\\_MAG\\_MOM\\_RATIO](#) = 0.00000011e0
- float [DEUTERON\\_PROTON\\_MAG\\_MOM\\_RATIO](#) = 0.30701220939e0
- float [U\\_DEUTERON\\_PROTON\\_MAG\\_MOM\\_RATIO](#) = 0.00000000079e0
- float [DEUTERON\\_PROTON\\_MASS\\_RATIO](#) = 1.99900750139e0
- float [U\\_DEUTERON\\_PROTON\\_MASS\\_RATIO](#) = 0.00000000011e0
- float [DEUTERON\\_RELATIVE\\_ATOMIC\\_MASS](#) = 2.013553212745e0
- float [U\\_DEUTERON\\_RELATIVE\\_ATOMIC\\_MASS](#) = 0.00000000040e0
- float [DEUTERON\\_RMS\\_CHARGE\\_RADIUS](#) = 2.12799e-15
- float [U\\_DEUTERON\\_RMS\\_CHARGE\\_RADIUS](#) = 0.00074e-15
- float [ELECTRON\\_CHARGE\\_TO\\_MASS\\_QUOTIENT](#) = -1.75882001076e11
- float [U\\_ELECTRON\\_CHARGE\\_TO\\_MASS\\_QUOTIENT](#) = 0.00000000053e11
- float [ELECTRON\\_DEUTERON\\_MAG\\_MOM\\_RATIO](#) = -2143.9234915e0
- float [U\\_ELECTRON\\_DEUTERON\\_MAG\\_MOM\\_RATIO](#) = 0.0000056e0
- float [ELECTRON\\_DEUTERON\\_MASS\\_RATIO](#) = 2.724437107462e-4
- float [U\\_ELECTRON\\_DEUTERON\\_MASS\\_RATIO](#) = 0.00000000096e-4
- float [ELECTRON\\_G\\_FACTOR](#) = -2.00231930436256e0
- float [U\\_ELECTRON\\_G\\_FACTOR](#) = 0.0000000000035e0
- float [ELECTRON\\_GYROMAG\\_RATIO](#) = 1.76085963023e11
- float [U\\_ELECTRON\\_GYROMAG\\_RATIO](#) = 0.00000000053e11
- float [ELECTRON\\_GYROMAG\\_RATIO\\_IN\\_MHZ\\_T](#) = 28024.9514242e0
- float [U\\_ELECTRON\\_GYROMAG\\_RATIO\\_IN\\_MHZ\\_T](#) = 0.0000085e0
- float [ELECTRON\\_HELION\\_MASS\\_RATIO](#) = 1.819543074573e-4
- float [U\\_ELECTRON\\_HELION\\_MASS\\_RATIO](#) = 0.00000000079e-4
- float [ELECTRON\\_MAG\\_MOM](#) = -9.2847647043e-24
- float [U\\_ELECTRON\\_MAG\\_MOM](#) = 0.0000000028e-24
- float [ELECTRON\\_MAG\\_MOM\\_ANOMALY](#) = 1.15965218128e-3
- float [U\\_ELECTRON\\_MAG\\_MOM\\_ANOMALY](#) = 0.00000000018e-3
- float [ELECTRON\\_MAG\\_MOM\\_TO\\_BOHR\\_MAGNETON\\_RATIO](#) = -1.00115965218128e0



- float [U\\_ELECTRON\\_MAG\\_MOM\\_TO\\_BOHR\\_MAGNETON\\_RATIO](#) = 0.00000000000018e0
- float [ELECTRON\\_MAG\\_MOM\\_TO\\_NUCLEAR\\_MAGNETON\\_RATIO](#) = -1838.28197188e0
- float [U\\_ELECTRON\\_MAG\\_MOM\\_TO\\_NUCLEAR\\_MAGNETON\\_RATIO](#) = 0.00000011e0
- float [ELECTRON\\_MASS](#) = 9.1093837015e-31
- float [U\\_ELECTRON\\_MASS](#) = 0.0000000028e-31
- float [ELECTRON\\_MASS\\_ENERGY\\_EQUIVALENT](#) = 8.1871057769e-14
- float [U\\_ELECTRON\\_MASS\\_ENERGY\\_EQUIVALENT](#) = 0.0000000025e-14
- float [ELECTRON\\_MASS\\_ENERGY\\_EQUIVALENT\\_IN\\_MEV](#) = 0.51099895000e0
- float [U\\_ELECTRON\\_MASS\\_ENERGY\\_EQUIVALENT\\_IN\\_MEV](#) = 0.00000000015e0
- float [ELECTRON\\_MASS\\_IN\\_U](#) = 5.48579909065e-4
- float [U\\_ELECTRON\\_MASS\\_IN\\_U](#) = 0.00000000016e-4
- float [ELECTRON\\_MOLAR\\_MASS](#) = 5.4857990888e-7
- float [U\\_ELECTRON\\_MOLAR\\_MASS](#) = 0.0000000017e-7
- float [ELECTRON\\_MUON\\_MAG\\_MOM\\_RATIO](#) = 206.7669883e0
- float [U\\_ELECTRON\\_MUON\\_MAG\\_MOM\\_RATIO](#) = 0.0000046e0
- float [ELECTRON\\_MUON\\_MASS\\_RATIO](#) = 4.83633169e-3
- float [U\\_ELECTRON\\_MUON\\_MASS\\_RATIO](#) = 0.00000011e-3
- float [ELECTRON\\_NEUTRON\\_MAG\\_MOM\\_RATIO](#) = 960.92050e0
- float [U\\_ELECTRON\\_NEUTRON\\_MAG\\_MOM\\_RATIO](#) = 0.00023e0
- float [ELECTRON\\_NEUTRON\\_MASS\\_RATIO](#) = 5.4386734424e-4
- float [U\\_ELECTRON\\_NEUTRON\\_MASS\\_RATIO](#) = 0.0000000026e-4
- float [ELECTRON\\_PROTON\\_MAG\\_MOM\\_RATIO](#) = -658.21068789e0
- float [U\\_ELECTRON\\_PROTON\\_MAG\\_MOM\\_RATIO](#) = 0.00000020e0
- float [ELECTRON\\_PROTON\\_MASS\\_RATIO](#) = 5.44617021487e-4
- float [U\\_ELECTRON\\_PROTON\\_MASS\\_RATIO](#) = 0.00000000033e-4
- float [ELECTRON\\_RELATIVE\\_ATOMIC\\_MASS](#) = 5.48579909065e-4
- float [U\\_ELECTRON\\_RELATIVE\\_ATOMIC\\_MASS](#) = 0.00000000016e-4
- float [ELECTRON\\_TAU\\_MASS\\_RATIO](#) = 2.87585e-4
- float [U\\_ELECTRON\\_TAU\\_MASS\\_RATIO](#) = 0.00019e-4
- float [ELECTRON\\_TO\\_ALPHA\\_PARTICLE\\_MASS\\_RATIO](#) = 1.370933554787e-4
- float [U\\_ELECTRON\\_TO\\_ALPHA\\_PARTICLE\\_MASS\\_RATIO](#) = 0.000000000045e-4
- float [ELECTRON\\_TO\\_SHIELDED\\_HELION\\_MAG\\_MOM\\_RATIO](#) = 864.058257e0
- float [U\\_ELECTRON\\_TO\\_SHIELDED\\_HELION\\_MAG\\_MOM\\_RATIO](#) = 0.000010e0
- float [ELECTRON\\_TO\\_SHIELDED\\_PROTON\\_MAG\\_MOM\\_RATIO](#) = -658.2275971e0
- float [U\\_ELECTRON\\_TO\\_SHIELDED\\_PROTON\\_MAG\\_MOM\\_RATIO](#) = 0.0000072e0
- float [ELECTRON\\_TRITON\\_MASS\\_RATIO](#) = 1.819200062251e-4
- float [U\\_ELECTRON\\_TRITON\\_MASS\\_RATIO](#) = 0.000000000090e-4
- float [ELECTRON\\_VOLT](#) = 1.602176634e-19
- float [U\\_ELECTRON\\_VOLT](#) = 0.0e0
- float [ELECTRON\\_VOLT\\_ATOMIC\\_MASS\\_UNIT\\_RELATIONSHIP](#) = 1.07354410233e-9
- float [U\\_ELECTRON\\_VOLT\\_ATOMIC\\_MASS\\_UNIT\\_RELATIONSHIP](#) = 0.00000000032e-9
- float [ELECTRON\\_VOLT\\_HARTREE\\_RELATIONSHIP](#) = 3.6749322175655e-2
- float [U\\_ELECTRON\\_VOLT\\_HARTREE\\_RELATIONSHIP](#) = 0.0000000000071e-2
- float [ELECTRON\\_VOLT\\_HERTZ\\_RELATIONSHIP](#) = 2.417989242e14
- float [U\\_ELECTRON\\_VOLT\\_HERTZ\\_RELATIONSHIP](#) = 0.0e0
- float [ELECTRON\\_VOLT\\_INVERSE\\_METER\\_RELATIONSHIP](#) = 8.065543937e5
- float [U\\_ELECTRON\\_VOLT\\_INVERSE\\_METER\\_RELATIONSHIP](#) = 0.0e0
- float [ELECTRON\\_VOLT\\_JOULE\\_RELATIONSHIP](#) = 1.602176634e-19
- float [U\\_ELECTRON\\_VOLT\\_JOULE\\_RELATIONSHIP](#) = 0.0e0
- float [ELECTRON\\_VOLT\\_KELVIN\\_RELATIONSHIP](#) = 1.160451812e4
- float [U\\_ELECTRON\\_VOLT\\_KELVIN\\_RELATIONSHIP](#) = 0.0e0
- float [ELECTRON\\_VOLT\\_KILOGRAM\\_RELATIONSHIP](#) = 1.782661921e-36
- float [U\\_ELECTRON\\_VOLT\\_KILOGRAM\\_RELATIONSHIP](#) = 0.0e0
- float [ELEMENTARY\\_CHARGE](#) = 1.602176634e-19
- float [U\\_ELEMENTARY\\_CHARGE](#) = 0.0e0

- float `ELEMENTARY_CHARGE_OVER_H_BAR` = 1.519267447e15
- float `U_ELEMENTARY_CHARGE_OVER_H_BAR` = 0.0e0
- float `FARADAY_CONSTANT` = 96485.33212e0
- float `U_FARADAY_CONSTANT` = 0.0e0
- float `FERMI_COUPLING_CONSTANT` = 1.1663787e-5
- float `U_FERMI_COUPLING_CONSTANT` = 0.0000006e-5
- float `FINE_STRUCTURE_CONSTANT` = 7.2973525693e-3
- float `U_FINE_STRUCTURE_CONSTANT` = 0.000000011e-3
- float `FIRST_RADIATION_CONSTANT` = 3.741771852e-16
- float `U_FIRST_RADIATION_CONSTANT` = 0.0e0
- float `FIRST_RADIATION_CONSTANT_FOR_SPECTRAL_RADIANCE` = 1.191042972e-16
- float `U_FIRST_RADIATION_CONSTANT_FOR_SPECTRAL_RADIANCE` = 0.0e0
- float `HARTREE_ATOMIC_MASS_UNIT_RELATIONSHIP` = 2.92126232205e-8
- float `U_HARTREE_ATOMIC_MASS_UNIT_RELATIONSHIP` = 0.00000000088e-8
- float `HARTREE_ELECTRON_VOLT_RELATIONSHIP` = 27.211386245988e0
- float `U_HARTREE_ELECTRON_VOLT_RELATIONSHIP` = 0.00000000053e0
- float `HARTREE_ENERGY` = 4.3597447222071e-18
- float `U_HARTREE_ENERGY` = 0.000000000085e-18
- float `HARTREE_ENERGY_IN_EV` = 27.211386245988e0
- float `U_HARTREE_ENERGY_IN_EV` = 0.00000000053e0
- float `HARTREE_HERTZ_RELATIONSHIP` = 6.579683920502e15
- float `U_HARTREE_HERTZ_RELATIONSHIP` = 0.00000000013e15
- float `HARTREE_INVERSE_METER_RELATIONSHIP` = 2.1947463136320e7
- float `U_HARTREE_INVERSE_METER_RELATIONSHIP` = 0.000000000043e7
- float `HARTREE_JOULE_RELATIONSHIP` = 4.3597447222071e-18
- float `U_HARTREE_JOULE_RELATIONSHIP` = 0.000000000085e-18
- float `HARTREE_KELVIN_RELATIONSHIP` = 3.1577502480407e5
- float `U_HARTREE_KELVIN_RELATIONSHIP` = 0.000000000061e5
- float `HARTREE_KILOGRAM_RELATIONSHIP` = 4.8508702095432e-35
- float `U_HARTREE_KILOGRAM_RELATIONSHIP` = 0.000000000094e-35
- float `HELION_ELECTRON_MASS_RATIO` = 5495.88528007e0
- float `U_HELION_ELECTRON_MASS_RATIO` = 0.00000024e0
- float `HELION_G_FACTOR` = -4.255250615e0
- float `U_HELION_G_FACTOR` = 0.000000050e0
- float `HELION_MAG_MOM` = -1.074617532e-26
- float `U_HELION_MAG_MOM` = 0.000000013e-26
- float `HELION_MAG_MOM_TO_BOHR_MAGNETON_RATIO` = -1.158740958e-3
- float `U_HELION_MAG_MOM_TO_BOHR_MAGNETON_RATIO` = 0.000000014e-3
- float `HELION_MAG_MOM_TO_NUCLEAR_MAGNETON_RATIO` = -2.127625307e0
- float `U_HELION_MAG_MOM_TO_NUCLEAR_MAGNETON_RATIO` = 0.000000025e0
- float `HELION_MASS` = 5.0064127796e-27
- float `U_HELION_MASS` = 0.0000000015e-27
- float `HELION_MASS_ENERGY_EQUIVALENT` = 4.4995394125e-10
- float `U_HELION_MASS_ENERGY_EQUIVALENT` = 0.0000000014e-10
- float `HELION_MASS_ENERGY_EQUIVALENT_IN_MEV` = 2808.39160743e0
- float `U_HELION_MASS_ENERGY_EQUIVALENT_IN_MEV` = 0.00000085e0
- float `HELION_MASS_IN_U` = 3.014932247175e0
- float `U_HELION_MASS_IN_U` = 0.00000000097e0
- float `HELION_MOLAR_MASS` = 3.01493224613e-3
- float `U_HELION_MOLAR_MASS` = 0.0000000091e-3
- float `HELION_PROTON_MASS_RATIO` = 2.99315267167e0
- float `U_HELION_PROTON_MASS_RATIO` = 0.00000000013e0
- float `HELION_RELATIVE_ATOMIC_MASS` = 3.014932247175e0
- float `U_HELION_RELATIVE_ATOMIC_MASS` = 0.00000000097e0
- float `HELION_SHIELDING_SHIFT` = 5.996743e-5

- float [U\\_HELION\\_SHIELDING\\_SHIFT](#) = 0.000010e-5
- float [HERTZ\\_ATOMIC\\_MASS\\_UNIT\\_RELATIONSHIP](#) = 4.4398216652e-24
- float [U\\_HERTZ\\_ATOMIC\\_MASS\\_UNIT\\_RELATIONSHIP](#) = 0.0000000013e-24
- float [HERTZ\\_ELECTRON\\_VOLT\\_RELATIONSHIP](#) = 4.135667696e-15
- float [U\\_HERTZ\\_ELECTRON\\_VOLT\\_RELATIONSHIP](#) = 0.0e0
- float [HERTZ\\_HARTREE\\_RELATIONSHIP](#) = 1.5198298460570e-16
- float [U\\_HERTZ\\_HARTREE\\_RELATIONSHIP](#) = 0.0000000000029e-16
- float [HERTZ\\_INVERSE\\_METER\\_RELATIONSHIP](#) = 3.335640951e-9
- float [U\\_HERTZ\\_INVERSE\\_METER\\_RELATIONSHIP](#) = 0.0e0
- float [HERTZ\\_JOULE\\_RELATIONSHIP](#) = 6.62607015e-34
- float [U\\_HERTZ\\_JOULE\\_RELATIONSHIP](#) = 0.0e0
- float [HERTZ\\_KELVIN\\_RELATIONSHIP](#) = 4.799243073e-11
- float [U\\_HERTZ\\_KELVIN\\_RELATIONSHIP](#) = 0.0e0
- float [HERTZ\\_KILOGRAM\\_RELATIONSHIP](#) = 7.372497323e-51
- float [U\\_HERTZ\\_KILOGRAM\\_RELATIONSHIP](#) = 0.0e0
- float [HYPERFINE\\_TRANSITION\\_FREQUENCY\\_OF\\_CS\\_133](#) = 9192631770.0e0
- float [U\\_HYPERFINE\\_TRANSITION\\_FREQUENCY\\_OF\\_CS\\_133](#) = 0.0e0
- float [INVERSE\\_FINE\\_STRUCTURE\\_CONSTANT](#) = 137.035999084e0
- float [U\\_INVERSE\\_FINE\\_STRUCTURE\\_CONSTANT](#) = 0.000000021e0
- float [INVERSE\\_METER\\_ATOMIC\\_MASS\\_UNIT\\_RELATIONSHIP](#) = 1.33102505010e-15
- float [U\\_INVERSE\\_METER\\_ATOMIC\\_MASS\\_UNIT\\_RELATIONSHIP](#) = 0.00000000040e-15
- float [INVERSE\\_METER\\_ELECTRON\\_VOLT\\_RELATIONSHIP](#) = 1.239841984e-6
- float [U\\_INVERSE\\_METER\\_ELECTRON\\_VOLT\\_RELATIONSHIP](#) = 0.0e0
- float [INVERSE\\_METER\\_HARTREE\\_RELATIONSHIP](#) = 4.5563352529120e-8
- float [U\\_INVERSE\\_METER\\_HARTREE\\_RELATIONSHIP](#) = 0.0000000000088e-8
- float [INVERSE\\_METER\\_HERTZ\\_RELATIONSHIP](#) = 299792458.0e0
- float [U\\_INVERSE\\_METER\\_HERTZ\\_RELATIONSHIP](#) = 0.0e0
- float [INVERSE\\_METER\\_JOULE\\_RELATIONSHIP](#) = 1.986445857e-25
- float [U\\_INVERSE\\_METER\\_JOULE\\_RELATIONSHIP](#) = 0.0e0
- float [INVERSE\\_METER\\_KELVIN\\_RELATIONSHIP](#) = 1.438776877e-2
- float [U\\_INVERSE\\_METER\\_KELVIN\\_RELATIONSHIP](#) = 0.0e0
- float [INVERSE\\_METER\\_KILOGRAM\\_RELATIONSHIP](#) = 2.210219094e-42
- float [U\\_INVERSE\\_METER\\_KILOGRAM\\_RELATIONSHIP](#) = 0.0e0
- float [INVERSE\\_OF\\_CONDUCTANCE\\_QUANTUM](#) = 12906.40372e0
- float [U\\_INVERSE\\_OF\\_CONDUCTANCE\\_QUANTUM](#) = 0.0e0
- float [JOSEPHSON\\_CONSTANT](#) = 483597.8484e9
- float [U\\_JOSEPHSON\\_CONSTANT](#) = 0.0e0
- float [JOULE\\_ATOMIC\\_MASS\\_UNIT\\_RELATIONSHIP](#) = 6.7005352565e9
- float [U\\_JOULE\\_ATOMIC\\_MASS\\_UNIT\\_RELATIONSHIP](#) = 0.0000000020e9
- float [JOULE\\_ELECTRON\\_VOLT\\_RELATIONSHIP](#) = 6.241509074e18
- float [U\\_JOULE\\_ELECTRON\\_VOLT\\_RELATIONSHIP](#) = 0.0e0
- float [JOULE\\_HARTREE\\_RELATIONSHIP](#) = 2.2937122783963e17
- float [U\\_JOULE\\_HARTREE\\_RELATIONSHIP](#) = 0.0000000000045e17
- float [JOULE\\_HERTZ\\_RELATIONSHIP](#) = 1.509190179e33
- float [U\\_JOULE\\_HERTZ\\_RELATIONSHIP](#) = 0.0e0
- float [JOULE\\_INVERSE\\_METER\\_RELATIONSHIP](#) = 5.034116567e24
- float [U\\_JOULE\\_INVERSE\\_METER\\_RELATIONSHIP](#) = 0.0e0
- float [JOULE\\_KELVIN\\_RELATIONSHIP](#) = 7.242970516e22
- float [U\\_JOULE\\_KELVIN\\_RELATIONSHIP](#) = 0.0e0
- float [JOULE\\_KILOGRAM\\_RELATIONSHIP](#) = 1.112650056e-17
- float [U\\_JOULE\\_KILOGRAM\\_RELATIONSHIP](#) = 0.0e0
- float [KELVIN\\_ATOMIC\\_MASS\\_UNIT\\_RELATIONSHIP](#) = 9.2510873014e-14
- float [U\\_KELVIN\\_ATOMIC\\_MASS\\_UNIT\\_RELATIONSHIP](#) = 0.0000000028e-14
- float [KELVIN\\_ELECTRON\\_VOLT\\_RELATIONSHIP](#) = 8.617333262e-5
- float [U\\_KELVIN\\_ELECTRON\\_VOLT\\_RELATIONSHIP](#) = 0.0e0

- float [KELVIN\\_HARTREE\\_RELATIONSHIP](#) = 3.1668115634556e-6
- float [U\\_KELVIN\\_HARTREE\\_RELATIONSHIP](#) = 0.0000000000061e-6
- float [KELVIN\\_HERTZ\\_RELATIONSHIP](#) = 2.083661912e10
- float [U\\_KELVIN\\_HERTZ\\_RELATIONSHIP](#) = 0.0e0
- float [KELVIN\\_INVERSE\\_METER\\_RELATIONSHIP](#) = 69.50348004e0
- float [U\\_KELVIN\\_INVERSE\\_METER\\_RELATIONSHIP](#) = 0.0e0
- float [KELVIN\\_JOULE\\_RELATIONSHIP](#) = 1.380649e-23
- float [U\\_KELVIN\\_JOULE\\_RELATIONSHIP](#) = 0.0e0
- float [KELVIN\\_KILOGRAM\\_RELATIONSHIP](#) = 1.536179187e-40
- float [U\\_KELVIN\\_KILOGRAM\\_RELATIONSHIP](#) = 0.0e0
- float [KILOGRAM\\_ATOMIC\\_MASS\\_UNIT\\_RELATIONSHIP](#) = 6.0221407621e26
- float [U\\_KILOGRAM\\_ATOMIC\\_MASS\\_UNIT\\_RELATIONSHIP](#) = 0.0000000018e26
- float [KILOGRAM\\_ELECTRON\\_VOLT\\_RELATIONSHIP](#) = 5.609588603e35
- float [U\\_KILOGRAM\\_ELECTRON\\_VOLT\\_RELATIONSHIP](#) = 0.0e0
- float [KILOGRAM\\_HARTREE\\_RELATIONSHIP](#) = 2.0614857887409e34
- float [U\\_KILOGRAM\\_HARTREE\\_RELATIONSHIP](#) = 0.000000000040e34
- float [KILOGRAM\\_HERTZ\\_RELATIONSHIP](#) = 1.356392489e50
- float [U\\_KILOGRAM\\_HERTZ\\_RELATIONSHIP](#) = 0.0e0
- float [KILOGRAM\\_INVERSE\\_METER\\_RELATIONSHIP](#) = 4.524438335e41
- float [U\\_KILOGRAM\\_INVERSE\\_METER\\_RELATIONSHIP](#) = 0.0e0
- float [KILOGRAM\\_JOULE\\_RELATIONSHIP](#) = 8.987551787e16
- float [U\\_KILOGRAM\\_JOULE\\_RELATIONSHIP](#) = 0.0e0
- float [KILOGRAM\\_KELVIN\\_RELATIONSHIP](#) = 6.509657260e39
- float [U\\_KILOGRAM\\_KELVIN\\_RELATIONSHIP](#) = 0.0e0
- float [LATTICE\\_PARAMETER\\_OF\\_SILICON](#) = 5.431020511e-10
- float [U\\_LATTICE\\_PARAMETER\\_OF\\_SILICON](#) = 0.000000089e-10
- float [LATTICE\\_SPACING\\_OF\\_IDEAL\\_SI\\_220](#) = 1.920155716e-10
- float [U\\_LATTICE\\_SPACING\\_OF\\_IDEAL\\_SI\\_220](#) = 0.000000032e-10
- float [LOSCHMIDT\\_CONSTANT\\_273\\_15\\_K\\_100\\_KPA](#) = 2.651645804e25
- float [U\\_LOSCHMIDT\\_CONSTANT\\_273\\_15\\_K\\_100\\_KPA](#) = 0.0e0
- float [LOSCHMIDT\\_CONSTANT\\_273\\_15\\_K\\_101\\_325\\_KPA](#) = 2.686780111e25
- float [U\\_LOSCHMIDT\\_CONSTANT\\_273\\_15\\_K\\_101\\_325\\_KPA](#) = 0.0e0
- float [LUMINOUS EFFICACY](#) = 683.0e0
- float [U\\_LUMINOUS EFFICACY](#) = 0.0e0
- float [MAG\\_FLUX\\_QUANTUM](#) = 2.067833848e-15
- float [U\\_MAG\\_FLUX\\_QUANTUM](#) = 0.0e0
- float [MOLAR\\_GAS\\_CONSTANT](#) = 8.314462618e0
- float [U\\_MOLAR\\_GAS\\_CONSTANT](#) = 0.0e0
- float [MOLAR\\_MASS\\_CONSTANT](#) = 0.99999999965e-3
- float [U\\_MOLAR\\_MASS\\_CONSTANT](#) = 0.00000000030e-3
- float [MOLAR\\_MASS\\_OF\\_CARBON\\_12](#) = 11.9999999958e-3
- float [U\\_MOLAR\\_MASS\\_OF\\_CARBON\\_12](#) = 0.0000000036e-3
- float [MOLAR\\_PLANCK\\_CONSTANT](#) = 3.990312712e-10
- float [U\\_MOLAR\\_PLANCK\\_CONSTANT](#) = 0.0e0
- float [MOLAR\\_VOLUME\\_OF\\_IDEAL\\_GAS\\_273\\_15\\_K\\_100\\_KPA](#) = 22.71095464e-3
- float [U\\_MOLAR\\_VOLUME\\_OF\\_IDEAL\\_GAS\\_273\\_15\\_K\\_100\\_KPA](#) = 0.0e0
- float [MOLAR\\_VOLUME\\_OF\\_IDEAL\\_GAS\\_273\\_15\\_K\\_101\\_325\\_KPA](#) = 22.41396954e-3
- float [U\\_MOLAR\\_VOLUME\\_OF\\_IDEAL\\_GAS\\_273\\_15\\_K\\_101\\_325\\_KPA](#) = 0.0e0
- float [MOLAR\\_VOLUME\\_OF\\_SILICON](#) = 1.205883199e-5
- float [U\\_MOLAR\\_VOLUME\\_OF\\_SILICON](#) = 0.000000060e-5
- float [MOLYBDENUM\\_X\\_UNIT](#) = 1.00209952e-13
- float [U\\_MOLYBDENUM\\_X\\_UNIT](#) = 0.00000053e-13
- float [MUON\\_COMPTON\\_WAVELENGTH](#) = 1.173444110e-14
- float [U\\_MUON\\_COMPTON\\_WAVELENGTH](#) = 0.000000026e-14
- float [MUON\\_ELECTRON\\_MASS\\_RATIO](#) = 206.7682830e0

- float [U\\_MUON\\_ELECTRON\\_MASS\\_RATIO](#) = 0.0000046e0
- float [MUON\\_G\\_FACTOR](#) = -2.0023318418e0
- float [U\\_MUON\\_G\\_FACTOR](#) = 0.0000000013e0
- float [MUON\\_MAG\\_MOM](#) = -4.49044830e-26
- float [U\\_MUON\\_MAG\\_MOM](#) = 0.00000010e-26
- float [MUON\\_MAG\\_MOM\\_ANOMALY](#) = 1.16592089e-3
- float [U\\_MUON\\_MAG\\_MOM\\_ANOMALY](#) = 0.00000063e-3
- float [MUON\\_MAG\\_MOM\\_TO\\_BOHR\\_MAGNETON\\_RATIO](#) = -4.84197047e-3
- float [U\\_MUON\\_MAG\\_MOM\\_TO\\_BOHR\\_MAGNETON\\_RATIO](#) = 0.00000011e-3
- float [MUON\\_MAG\\_MOM\\_TO\\_NUCLEAR\\_MAGNETON\\_RATIO](#) = -8.89059703e0
- float [U\\_MUON\\_MAG\\_MOM\\_TO\\_NUCLEAR\\_MAGNETON\\_RATIO](#) = 0.00000020e0
- float [MUON\\_MASS](#) = 1.883531627e-28
- float [U\\_MUON\\_MASS](#) = 0.000000042e-28
- float [MUON\\_MASS\\_ENERGY\\_EQUIVALENT](#) = 1.692833804e-11
- float [U\\_MUON\\_MASS\\_ENERGY\\_EQUIVALENT](#) = 0.000000038e-11
- float [MUON\\_MASS\\_ENERGY\\_EQUIVALENT\\_IN\\_MEV](#) = 105.6583755e0
- float [U\\_MUON\\_MASS\\_ENERGY\\_EQUIVALENT\\_IN\\_MEV](#) = 0.0000023e0
- float [MUON\\_MASS\\_IN\\_U](#) = 0.1134289259e0
- float [U\\_MUON\\_MASS\\_IN\\_U](#) = 0.0000000025e0
- float [MUON\\_MOLAR\\_MASS](#) = 1.134289259e-4
- float [U\\_MUON\\_MOLAR\\_MASS](#) = 0.000000025e-4
- float [MUON\\_NEUTRON\\_MASS\\_RATIO](#) = 0.1124545170e0
- float [U\\_MUON\\_NEUTRON\\_MASS\\_RATIO](#) = 0.0000000025e0
- float [MUON\\_PROTON\\_MAG\\_MOM\\_RATIO](#) = -3.183345142e0
- float [U\\_MUON\\_PROTON\\_MAG\\_MOM\\_RATIO](#) = 0.000000071e0
- float [MUON\\_PROTON\\_MASS\\_RATIO](#) = 0.1126095264e0
- float [U\\_MUON\\_PROTON\\_MASS\\_RATIO](#) = 0.0000000025e0
- float [MUON\\_TAU\\_MASS\\_RATIO](#) = 5.94635e-2
- float [U\\_MUON\\_TAU\\_MASS\\_RATIO](#) = 0.00040e-2
- float [NATURAL\\_UNIT\\_OF\\_ACTION](#) = 1.054571817e-34
- float [U\\_NATURAL\\_UNIT\\_OF\\_ACTION](#) = 0.0e0
- float [NATURAL\\_UNIT\\_OF\\_ACTION\\_IN\\_EV\\_S](#) = 6.582119569e-16
- float [U\\_NATURAL\\_UNIT\\_OF\\_ACTION\\_IN\\_EV\\_S](#) = 0.0e0
- float [NATURAL\\_UNIT\\_OF\\_ENERGY](#) = 8.1871057769e-14
- float [U\\_NATURAL\\_UNIT\\_OF\\_ENERGY](#) = 0.0000000025e-14
- float [NATURAL\\_UNIT\\_OF\\_ENERGY\\_IN\\_MEV](#) = 0.51099895000e0
- float [U\\_NATURAL\\_UNIT\\_OF\\_ENERGY\\_IN\\_MEV](#) = 0.00000000015e0
- float [NATURAL\\_UNIT\\_OF\\_LENGTH](#) = 3.8615926796e-13
- float [U\\_NATURAL\\_UNIT\\_OF\\_LENGTH](#) = 0.0000000012e-13
- float [NATURAL\\_UNIT\\_OF\\_MASS](#) = 9.1093837015e-31
- float [U\\_NATURAL\\_UNIT\\_OF\\_MASS](#) = 0.0000000028e-31
- float [NATURAL\\_UNIT\\_OF\\_MOMENTUM](#) = 2.73092453075e-22
- float [U\\_NATURAL\\_UNIT\\_OF\\_MOMENTUM](#) = 0.00000000082e-22
- float [NATURAL\\_UNIT\\_OF\\_MOMENTUM\\_IN\\_MEV\\_C](#) = 0.51099895000e0
- float [U\\_NATURAL\\_UNIT\\_OF\\_MOMENTUM\\_IN\\_MEV\\_C](#) = 0.00000000015e0
- float [NATURAL\\_UNIT\\_OF\\_TIME](#) = 1.28808866819e-21
- float [U\\_NATURAL\\_UNIT\\_OF\\_TIME](#) = 0.00000000039e-21
- float [NATURAL\\_UNIT\\_OF\\_VELOCITY](#) = 299792458.0e0
- float [U\\_NATURAL\\_UNIT\\_OF\\_VELOCITY](#) = 0.0e0
- float [NEUTRON\\_COMPTON\\_WAVELENGTH](#) = 1.31959090581e-15
- float [U\\_NEUTRON\\_COMPTON\\_WAVELENGTH](#) = 0.00000000075e-15
- float [NEUTRON\\_ELECTRON\\_MAG\\_MOM\\_RATIO](#) = 1.04066882e-3
- float [U\\_NEUTRON\\_ELECTRON\\_MAG\\_MOM\\_RATIO](#) = 0.00000025e-3
- float [NEUTRON\\_ELECTRON\\_MASS\\_RATIO](#) = 1838.68366173e0
- float [U\\_NEUTRON\\_ELECTRON\\_MASS\\_RATIO](#) = 0.00000089e0

- float `NEUTRON_G_FACTOR` = -3.82608545e0
- float `U_NEUTRON_G_FACTOR` = 0.00000090e0
- float `NEUTRON_GYROMAG_RATIO` = 1.83247171e8
- float `U_NEUTRON_GYROMAG_RATIO` = 0.00000043e8
- float `NEUTRON_GYROMAG_RATIO_IN_MHZ_T` = 29.1646931e0
- float `U_NEUTRON_GYROMAG_RATIO_IN_MHZ_T` = 0.00000069e0
- float `NEUTRON_MAG_MOM` = -9.6623651e-27
- float `U_NEUTRON_MAG_MOM` = 0.0000023e-27
- float `NEUTRON_MAG_MOM_TO_BOHR_MAGNETON_RATIO` = -1.04187563e-3
- float `U_NEUTRON_MAG_MOM_TO_BOHR_MAGNETON_RATIO` = 0.00000025e-3
- float `NEUTRON_MAG_MOM_TO_NUCLEAR_MAGNETON_RATIO` = -1.91304273e0
- float `U_NEUTRON_MAG_MOM_TO_NUCLEAR_MAGNETON_RATIO` = 0.00000045e0
- float `NEUTRON_MASS` = 1.67492749804e-27
- float `U_NEUTRON_MASS` = 0.00000000095e-27
- float `NEUTRON_MASS_ENERGY_EQUIVALENT` = 1.50534976287e-10
- float `U_NEUTRON_MASS_ENERGY_EQUIVALENT` = 0.00000000086e-10
- float `NEUTRON_MASS_ENERGY_EQUIVALENT_IN_MEV` = 939.56542052e0
- float `U_NEUTRON_MASS_ENERGY_EQUIVALENT_IN_MEV` = 0.00000054e0
- float `NEUTRON_MASS_IN_U` = 1.00866491595e0
- float `U_NEUTRON_MASS_IN_U` = 0.00000000049e0
- float `NEUTRON_MOLAR_MASS` = 1.00866491560e-3
- float `U_NEUTRON_MOLAR_MASS` = 0.00000000057e-3
- float `NEUTRON_MUON_MASS_RATIO` = 8.89248406e0
- float `U_NEUTRON_MUON_MASS_RATIO` = 0.00000020e0
- float `NEUTRON_PROTON_MAG_MOM_RATIO` = -0.68497934e0
- float `U_NEUTRON_PROTON_MAG_MOM_RATIO` = 0.00000016e0
- float `NEUTRON_PROTON_MASS_DIFFERENCE` = 2.30557435e-30
- float `U_NEUTRON_PROTON_MASS_DIFFERENCE` = 0.00000082e-30
- float `NEUTRON_PROTON_MASS_DIFFERENCE_ENERGY_EQUIVALENT` = 2.07214689e-13
- float `U_NEUTRON_PROTON_MASS_DIFFERENCE_ENERGY_EQUIVALENT` = 0.00000074e-13
- float `NEUTRON_PROTON_MASS_DIFFERENCE_ENERGY_EQUIVALENT_IN_MEV` = 1.29333236e0
- float `U_NEUTRON_PROTON_MASS_DIFFERENCE_ENERGY_EQUIVALENT_IN_MEV` = 0.00000046e0
- float `NEUTRON_PROTON_MASS_DIFFERENCE_IN_U` = 1.38844933e-3
- float `U_NEUTRON_PROTON_MASS_DIFFERENCE_IN_U` = 0.00000049e-3
- float `NEUTRON_PROTON_MASS_RATIO` = 1.00137841931e0
- float `U_NEUTRON_PROTON_MASS_RATIO` = 0.00000000049e0
- float `NEUTRON_RELATIVE_ATOMIC_MASS` = 1.00866491595e0
- float `U_NEUTRON_RELATIVE_ATOMIC_MASS` = 0.00000000049e0
- float `NEUTRON_TAU_MASS_RATIO` = 0.528779e0
- float `U_NEUTRON_TAU_MASS_RATIO` = 0.000036e0
- float `NEUTRON_TO_SHIELDED_PROTON_MAG_MOM_RATIO` = -0.68499694e0
- float `U_NEUTRON_TO_SHIELDED_PROTON_MAG_MOM_RATIO` = 0.00000016e0
- float `NEWTONIAN_CONSTANT_OF_GRAVITATION` = 6.67430e-11
- float `U_NEWTONIAN_CONSTANT_OF_GRAVITATION` = 0.00015e-11
- float `NEWTONIAN_CONSTANT_OF_GRAVITATION_OVER_H_BAR_C` = 6.70883e-39
- float `U_NEWTONIAN_CONSTANT_OF_GRAVITATION_OVER_H_BAR_C` = 0.00015e-39
- float `NUCLEAR_MAGNETON` = 5.0507837461e-27
- float `U_NUCLEAR_MAGNETON` = 0.0000000015e-27
- float `NUCLEAR_MAGNETON_IN_EV_T` = 3.15245125844e-8
- float `U_NUCLEAR_MAGNETON_IN_EV_T` = 0.00000000096e-8
- float `NUCLEAR_MAGNETON_IN_INVERSE_METER_PER_TESLA` = 2.54262341353e-2
- float `U_NUCLEAR_MAGNETON_IN_INVERSE_METER_PER_TESLA` = 0.00000000078e-2
- float `NUCLEAR_MAGNETON_IN_K_T` = 3.6582677756e-4
- float `U_NUCLEAR_MAGNETON_IN_K_T` = 0.0000000011e-4
- float `NUCLEAR_MAGNETON_IN_MHZ_T` = 7.6225932291e0



- float [U\\_NUCLEAR\\_MAGNETON\\_IN\\_MHZ\\_T](#) = 0.0000000023e0
- float [PLANCK\\_CONSTANT](#) = 6.62607015e-34
- float [U\\_PLANCK\\_CONSTANT](#) = 0.0e0
- float [PLANCK\\_CONSTANT\\_IN\\_EV\\_HZ](#) = 4.135667696e-15
- float [U\\_PLANCK\\_CONSTANT\\_IN\\_EV\\_HZ](#) = 0.0e0
- float [PLANCK\\_LENGTH](#) = 1.616255e-35
- float [U\\_PLANCK\\_LENGTH](#) = 0.000018e-35
- float [PLANCK\\_MASS](#) = 2.176434e-8
- float [U\\_PLANCK\\_MASS](#) = 0.000024e-8
- float [PLANCK\\_MASS\\_ENERGY\\_EQUIVALENT\\_IN\\_GEV](#) = 1.220890e19
- float [U\\_PLANCK\\_MASS\\_ENERGY\\_EQUIVALENT\\_IN\\_GEV](#) = 0.000014e19
- float [PLANCK\\_TEMPERATURE](#) = 1.416784e32
- float [U\\_PLANCK\\_TEMPERATURE](#) = 0.000016e32
- float [PLANCK\\_TIME](#) = 5.391247e-44
- float [U\\_PLANCK\\_TIME](#) = 0.000060e-44
- float [PROTON\\_CHARGE\\_TO\\_MASS\\_QUOTIENT](#) = 9.5788331560e7
- float [U\\_PROTON\\_CHARGE\\_TO\\_MASS\\_QUOTIENT](#) = 0.0000000029e7
- float [PROTON\\_COMPTON\\_WAVELENGTH](#) = 1.32140985539e-15
- float [U\\_PROTON\\_COMPTON\\_WAVELENGTH](#) = 0.00000000040e-15
- float [PROTON\\_ELECTRON\\_MASS\\_RATIO](#) = 1836.15267343e0
- float [U\\_PROTON\\_ELECTRON\\_MASS\\_RATIO](#) = 0.00000011e0
- float [PROTON\\_G\\_FACTOR](#) = 5.5856946893e0
- float [U\\_PROTON\\_G\\_FACTOR](#) = 0.0000000016e0
- float [PROTON\\_GYROMAG\\_RATIO](#) = 2.6752218744e8
- float [U\\_PROTON\\_GYROMAG\\_RATIO](#) = 0.0000000011e8
- float [PROTON\\_GYROMAG\\_RATIO\\_IN\\_MHZ\\_T](#) = 42.577478518e0
- float [U\\_PROTON\\_GYROMAG\\_RATIO\\_IN\\_MHZ\\_T](#) = 0.000000018e0
- float [PROTON\\_MAG\\_MOM](#) = 1.41060679736e-26
- float [U\\_PROTON\\_MAG\\_MOM](#) = 0.00000000060e-26
- float [PROTON\\_MAG\\_MOM\\_TO\\_BOHR\\_MAGNETON\\_RATIO](#) = 1.52103220230e-3
- float [U\\_PROTON\\_MAG\\_MOM\\_TO\\_BOHR\\_MAGNETON\\_RATIO](#) = 0.00000000046e-3
- float [PROTON\\_MAG\\_MOM\\_TO\\_NUCLEAR\\_MAGNETON\\_RATIO](#) = 2.79284734463e0
- float [U\\_PROTON\\_MAG\\_MOM\\_TO\\_NUCLEAR\\_MAGNETON\\_RATIO](#) = 0.00000000082e0
- float [PROTON\\_MAG\\_SHIELDING\\_CORRECTION](#) = 2.5689e-5
- float [U\\_PROTON\\_MAG\\_SHIELDING\\_CORRECTION](#) = 0.0011e-5
- float [PROTON\\_MASS](#) = 1.67262192369e-27
- float [U\\_PROTON\\_MASS](#) = 0.00000000051e-27
- float [PROTON\\_MASS\\_ENERGY\\_EQUIVALENT](#) = 1.50327761598e-10
- float [U\\_PROTON\\_MASS\\_ENERGY\\_EQUIVALENT](#) = 0.00000000046e-10
- float [PROTON\\_MASS\\_ENERGY\\_EQUIVALENT\\_IN\\_MEV](#) = 938.27208816e0
- float [U\\_PROTON\\_MASS\\_ENERGY\\_EQUIVALENT\\_IN\\_MEV](#) = 0.00000029e0
- float [PROTON\\_MASS\\_IN\\_U](#) = 1.007276466621e0
- float [U\\_PROTON\\_MASS\\_IN\\_U](#) = 0.00000000053e0
- float [PROTON\\_MOLAR\\_MASS](#) = 1.00727646627e-3
- float [U\\_PROTON\\_MOLAR\\_MASS](#) = 0.00000000031e-3
- float [PROTON\\_MUON\\_MASS\\_RATIO](#) = 8.88024337e0
- float [U\\_PROTON\\_MUON\\_MASS\\_RATIO](#) = 0.00000020e0
- float [PROTON\\_NEUTRON\\_MAG\\_MOM\\_RATIO](#) = -1.45989805e0
- float [U\\_PROTON\\_NEUTRON\\_MAG\\_MOM\\_RATIO](#) = 0.00000034e0
- float [PROTON\\_NEUTRON\\_MASS\\_RATIO](#) = 0.99862347812e0
- float [U\\_PROTON\\_NEUTRON\\_MASS\\_RATIO](#) = 0.00000000049e0
- float [PROTON\\_RELATIVE\\_ATOMIC\\_MASS](#) = 1.007276466621e0
- float [U\\_PROTON\\_RELATIVE\\_ATOMIC\\_MASS](#) = 0.00000000053e0
- float [PROTON\\_RMS\\_CHARGE\\_RADIUS](#) = 8.414e-16
- float [U\\_PROTON\\_RMS\\_CHARGE\\_RADIUS](#) = 0.019e-16

- float [PROTON\\_TAU\\_MASS\\_RATIO](#) = 0.528051e0
- float [U\\_PROTON\\_TAU\\_MASS\\_RATIO](#) = 0.000036e0
- float [QUANTUM\\_OF\\_CIRCULATION](#) = 3.6369475516e-4
- float [U\\_QUANTUM\\_OF\\_CIRCULATION](#) = 0.0000000011e-4
- float [QUANTUM\\_OF\\_CIRCULATION\\_TIMES\\_2](#) = 7.2738951032e-4
- float [U\\_QUANTUM\\_OF\\_CIRCULATION\\_TIMES\\_2](#) = 0.0000000022e-4
- float [REDUCED\\_COMPTON\\_WAVELENGTH](#) = 3.8615926796e-13
- float [U\\_REDUCED\\_COMPTON\\_WAVELENGTH](#) = 0.0000000012e-13
- float [REDUCED\\_MUON\\_COMPTON\\_WAVELENGTH](#) = 1.867594306e-15
- float [U\\_REDUCED\\_MUON\\_COMPTON\\_WAVELENGTH](#) = 0.0000000042e-15
- float [REDUCED\\_NEUTRON\\_COMPTON\\_WAVELENGTH](#) = 2.1001941552e-16
- float [U\\_REDUCED\\_NEUTRON\\_COMPTON\\_WAVELENGTH](#) = 0.0000000012e-16
- float [REDUCED\\_PLANCK\\_CONSTANT](#) = 1.054571817e-34
- float [U\\_REDUCED\\_PLANCK\\_CONSTANT](#) = 0.0e0
- float [REDUCED\\_PLANCK\\_CONSTANT\\_IN\\_EV\\_S](#) = 6.582119569e-16
- float [U\\_REDUCED\\_PLANCK\\_CONSTANT\\_IN\\_EV\\_S](#) = 0.0e0
- float [REDUCED\\_PLANCK\\_CONSTANT\\_TIMES\\_C\\_IN\\_MEV\\_FM](#) = 197.3269804e0
- float [U\\_REDUCED\\_PLANCK\\_CONSTANT\\_TIMES\\_C\\_IN\\_MEV\\_FM](#) = 0.0e0
- float [REDUCED\\_PROTON\\_COMPTON\\_WAVELENGTH](#) = 2.10308910336e-16
- float [U\\_REDUCED\\_PROTON\\_COMPTON\\_WAVELENGTH](#) = 0.00000000064e-16
- float [REDUCED\\_TAU\\_COMPTON\\_WAVELENGTH](#) = 1.110538e-16
- float [U\\_REDUCED\\_TAU\\_COMPTON\\_WAVELENGTH](#) = 0.000075e-16
- float [RYDBERG\\_CONSTANT](#) = 10973731.568160e0
- float [U\\_RYDBERG\\_CONSTANT](#) = 0.000021e0
- float [RYDBERG\\_CONSTANT\\_TIMES\\_C\\_IN\\_HZ](#) = 3.2898419602508e15
- float [U\\_RYDBERG\\_CONSTANT\\_TIMES\\_C\\_IN\\_HZ](#) = 0.0000000000064e15
- float [RYDBERG\\_CONSTANT\\_TIMES\\_HC\\_IN\\_EV](#) = 13.605693122994e0
- float [U\\_RYDBERG\\_CONSTANT\\_TIMES\\_HC\\_IN\\_EV](#) = 0.000000000026e0
- float [RYDBERG\\_CONSTANT\\_TIMES\\_HC\\_IN\\_J](#) = 2.1798723611035e-18
- float [U\\_RYDBERG\\_CONSTANT\\_TIMES\\_HC\\_IN\\_J](#) = 0.0000000000042e-18
- float [SACKUR\\_TETRODE\\_CONSTANT\\_\\_1\\_K\\_\\_100\\_KPA](#) = -1.15170753706e0
- float [U\\_SACKUR\\_TETRODE\\_CONSTANT\\_\\_1\\_K\\_\\_100\\_KPA](#) = 0.00000000045e0
- float [SACKUR\\_TETRODE\\_CONSTANT\\_\\_1\\_K\\_\\_101\\_325\\_KPA](#) = -1.16487052358e0
- float [U\\_SACKUR\\_TETRODE\\_CONSTANT\\_\\_1\\_K\\_\\_101\\_325\\_KPA](#) = 0.00000000045e0
- float [SECOND\\_RADIATION\\_CONSTANT](#) = 1.438776877e-2
- float [U\\_SECOND\\_RADIATION\\_CONSTANT](#) = 0.0e0
- float [SHIELDED\\_HELION\\_GYROMAG\\_RATIO](#) = 2.037894569e8
- float [U\\_SHIELDED\\_HELION\\_GYROMAG\\_RATIO](#) = 0.000000024e8
- float [SHIELDED\\_HELION\\_GYROMAG\\_RATIO\\_IN\\_MHZ\\_T](#) = 32.43409942e0
- float [U\\_SHIELDED\\_HELION\\_GYROMAG\\_RATIO\\_IN\\_MHZ\\_T](#) = 0.00000038e0
- float [SHIELDED\\_HELION\\_MAG\\_MOM](#) = -1.074553090e-26
- float [U\\_SHIELDED\\_HELION\\_MAG\\_MOM](#) = 0.000000013e-26
- float [SHIELDED\\_HELION\\_MAG\\_MOM\\_TO\\_BOHR\\_MAGNETON\\_RATIO](#) = -1.158671471e-3
- float [U\\_SHIELDED\\_HELION\\_MAG\\_MOM\\_TO\\_BOHR\\_MAGNETON\\_RATIO](#) = 0.000000014e-3
- float [SHIELDED\\_HELION\\_MAG\\_MOM\\_TO\\_NUCLEAR\\_MAGNETON\\_RATIO](#) = -2.127497719e0
- float [U\\_SHIELDED\\_HELION\\_MAG\\_MOM\\_TO\\_NUCLEAR\\_MAGNETON\\_RATIO](#) = 0.000000025e0
- float [SHIELDED\\_HELION\\_TO\\_PROTON\\_MAG\\_MOM\\_RATIO](#) = -0.7617665618e0
- float [U\\_SHIELDED\\_HELION\\_TO\\_PROTON\\_MAG\\_MOM\\_RATIO](#) = 0.0000000089e0
- float [SHIELDED\\_HELION\\_TO\\_SHIELDED\\_PROTON\\_MAG\\_MOM\\_RATIO](#) = -0.7617861313e0
- float [U\\_SHIELDED\\_HELION\\_TO\\_SHIELDED\\_PROTON\\_MAG\\_MOM\\_RATIO](#) = 0.0000000033e0
- float [SHIELDED\\_PROTON\\_GYROMAG\\_RATIO](#) = 2.675153151e8
- float [U\\_SHIELDED\\_PROTON\\_GYROMAG\\_RATIO](#) = 0.000000029e8
- float [SHIELDED\\_PROTON\\_GYROMAG\\_RATIO\\_IN\\_MHZ\\_T](#) = 42.57638474e0
- float [U\\_SHIELDED\\_PROTON\\_GYROMAG\\_RATIO\\_IN\\_MHZ\\_T](#) = 0.00000046e0
- float [SHIELDED\\_PROTON\\_MAG\\_MOM](#) = 1.410570560e-26



- float [U\\_SHIELDED\\_PROTON\\_MAG\\_MOM](#) = 0.000000015e-26
- float [SHIELDED\\_PROTON\\_MAG\\_MOM\\_TO\\_BOHR\\_MAGNETON\\_RATIO](#) = 1.520993128e-3
- float [U\\_SHIELDED\\_PROTON\\_MAG\\_MOM\\_TO\\_BOHR\\_MAGNETON\\_RATIO](#) = 0.000000017e-3
- float [SHIELDED\\_PROTON\\_MAG\\_MOM\\_TO\\_NUCLEAR\\_MAGNETON\\_RATIO](#) = 2.792775599e0
- float [U\\_SHIELDED\\_PROTON\\_MAG\\_MOM\\_TO\\_NUCLEAR\\_MAGNETON\\_RATIO](#) = 0.000000030e0
- float [SHIELDING\\_DIFFERENCE\\_OF\\_D\\_AND\\_P\\_IN\\_HD](#) = 2.0200e-8
- float [U\\_SHIELDING\\_DIFFERENCE\\_OF\\_D\\_AND\\_P\\_IN\\_HD](#) = 0.0020e-8
- float [SHIELDING\\_DIFFERENCE\\_OF\\_T\\_AND\\_P\\_IN\\_HT](#) = 2.4140e-8
- float [U\\_SHIELDING\\_DIFFERENCE\\_OF\\_T\\_AND\\_P\\_IN\\_HT](#) = 0.0020e-8
- float [SPEED\\_OF\\_LIGHT\\_IN\\_VACUUM](#) = 299792458.0e0
- float [U\\_SPEED\\_OF\\_LIGHT\\_IN\\_VACUUM](#) = 0.0e0
- float [STANDARD\\_ACCELERATION\\_OF\\_GRAVITY](#) = 9.80665e0
- float [U\\_STANDARD\\_ACCELERATION\\_OF\\_GRAVITY](#) = 0.0e0
- float [STANDARD\\_ATMOSPHERE](#) = 101325.0e0
- float [U\\_STANDARD\\_ATMOSPHERE](#) = 0.0e0
- float [STANDARD\\_STATE\\_PRESSURE](#) = 100000.0e0
- float [U\\_STANDARD\\_STATE\\_PRESSURE](#) = 0.0e0
- float [STEFAN\\_BOLTZMANN\\_CONSTANT](#) = 5.670374419e-8
- float [U\\_STEFAN\\_BOLTZMANN\\_CONSTANT](#) = 0.0e0
- float [TAU\\_COMPTON\\_WAVELENGTH](#) = 6.97771e-16
- float [U\\_TAU\\_COMPTON\\_WAVELENGTH](#) = 0.00047e-16
- float [TAU\\_ELECTRON\\_MASS\\_RATIO](#) = 3477.23e0
- float [U\\_TAU\\_ELECTRON\\_MASS\\_RATIO](#) = 0.23e0
- float [TAU\\_ENERGY\\_EQUIVALENT](#) = 1776.86e0
- float [U\\_TAU\\_ENERGY\\_EQUIVALENT](#) = 0.12e0
- float [TAU\\_MASS](#) = 3.16754e-27
- float [U\\_TAU\\_MASS](#) = 0.00021e-27
- float [TAU\\_MASS\\_ENERGY\\_EQUIVALENT](#) = 2.84684e-10
- float [U\\_TAU\\_MASS\\_ENERGY\\_EQUIVALENT](#) = 0.00019e-10
- float [TAU\\_MASS\\_IN\\_U](#) = 1.90754e0
- float [U\\_TAU\\_MASS\\_IN\\_U](#) = 0.00013e0
- float [TAU\\_MOLAR\\_MASS](#) = 1.90754e-3
- float [U\\_TAU\\_MOLAR\\_MASS](#) = 0.00013e-3
- float [TAU\\_MUON\\_MASS\\_RATIO](#) = 16.8170e0
- float [U\\_TAU\\_MUON\\_MASS\\_RATIO](#) = 0.0011e0
- float [TAU\\_NEUTRON\\_MASS\\_RATIO](#) = 1.89115e0
- float [U\\_TAU\\_NEUTRON\\_MASS\\_RATIO](#) = 0.00013e0
- float [TAU\\_PROTON\\_MASS\\_RATIO](#) = 1.89376e0
- float [U\\_TAU\\_PROTON\\_MASS\\_RATIO](#) = 0.00013e0
- float [THOMSON\\_CROSS\\_SECTION](#) = 6.6524587321e-29
- float [U\\_THOMSON\\_CROSS\\_SECTION](#) = 0.0000000060e-29
- float [TRITON\\_ELECTRON\\_MASS\\_RATIO](#) = 5496.92153573e0
- float [U\\_TRITON\\_ELECTRON\\_MASS\\_RATIO](#) = 0.00000027e0
- float [TRITON\\_G\\_FACTOR](#) = 5.957924931e0
- float [U\\_TRITON\\_G\\_FACTOR](#) = 0.000000012e0
- float [TRITON\\_MAG\\_MOM](#) = 1.5046095202e-26
- float [U\\_TRITON\\_MAG\\_MOM](#) = 0.0000000030e-26
- float [TRITON\\_MAG\\_MOM\\_TO\\_BOHR\\_MAGNETON\\_RATIO](#) = 1.6223936651e-3
- float [U\\_TRITON\\_MAG\\_MOM\\_TO\\_BOHR\\_MAGNETON\\_RATIO](#) = 0.0000000032e-3
- float [TRITON\\_MAG\\_MOM\\_TO\\_NUCLEAR\\_MAGNETON\\_RATIO](#) = 2.9789624656e0
- float [U\\_TRITON\\_MAG\\_MOM\\_TO\\_NUCLEAR\\_MAGNETON\\_RATIO](#) = 0.0000000059e0
- float [TRITON\\_MASS](#) = 5.0073567446e-27
- float [U\\_TRITON\\_MASS](#) = 0.0000000015e-27
- float [TRITON\\_MASS\\_ENERGY\\_EQUIVALENT](#) = 4.5003878060e-10
- float [U\\_TRITON\\_MASS\\_ENERGY\\_EQUIVALENT](#) = 0.0000000014e-10

- float `TRITON_MASS_ENERGY_EQUIVALENT_IN_MEV` = 2808.92113298e0
- float `U_TRITON_MASS_ENERGY_EQUIVALENT_IN_MEV` = 0.00000085e0
- float `TRITON_MASS_IN_U` = 3.01550071621e0
- float `U_TRITON_MASS_IN_U` = 0.00000000012e0
- float `TRITON_MOLAR_MASS` = 3.01550071517e-3
- float `U_TRITON_MOLAR_MASS` = 0.00000000092e-3
- float `TRITON_PROTON_MASS_RATIO` = 2.99371703414e0
- float `U_TRITON_PROTON_MASS_RATIO` = 0.00000000015e0
- float `TRITON_RELATIVE_ATOMIC_MASS` = 3.01550071621e0
- float `U_TRITON_RELATIVE_ATOMIC_MASS` = 0.00000000012e0
- float `TRITON_TO_PROTON_MAG_MOM_RATIO` = 1.0666399191e0
- float `U_TRITON_TO_PROTON_MAG_MOM_RATIO` = 0.0000000021e0
- float `UNIFIED_ATOMIC_MASS_UNIT` = 1.66053906660e-27
- float `U_UNIFIED_ATOMIC_MASS_UNIT` = 0.00000000050e-27
- float `VACUUM_ELECTRIC_PERMITTIVITY` = 8.8541878128e-12
- float `U_VACUUM_ELECTRIC_PERMITTIVITY` = 0.0000000013e-12
- float `VACUUM_MAG_PERMEABILITY` = 1.25663706212e-6
- float `U_VACUUM_MAG_PERMEABILITY` = 0.00000000019e-6
- float `VON_KLITZING_CONSTANT` = 25812.80745e0
- float `U_VON_KLITZING_CONSTANT` = 0.0e0
- float `WEAK_MIXING_ANGLE` = 0.22290e0
- float `U_WEAK_MIXING_ANGLE` = 0.00030e0
- float `WIEN_FREQUENCY_DISPLACEMENT_LAW_CONSTANT` = 5.878925757e10
- float `U_WIEN_FREQUENCY_DISPLACEMENT_LAW_CONSTANT` = 0.0e0
- float `WIEN_WAVELENGTH_DISPLACEMENT_LAW_CONSTANT` = 2.897771955e-3
- float `U_WIEN_WAVELENGTH_DISPLACEMENT_LAW_CONSTANT` = 0.0e0
- float `W_TO_Z_MASS_RATIO` = 0.88153e0
- float `U_W_TO_Z_MASS_RATIO` = 0.00017e0

### 15.2.1 Detailed Description

Codata module - autogenerated

### 15.2.2 Variable Documentation

#### 15.2.2.1 ALPHA\_PARTICLE\_ELECTRON\_MASS\_RATIO

```
float pycodata.ALPHA_PARTICLE_ELECTRON_MASS_RATIO = 7294.29954142e0
```

Definition at line 3 of file [pycodata.py](#).

#### 15.2.2.2 ALPHA\_PARTICLE\_MASS

```
float pycodata.ALPHA_PARTICLE_MASS = 6.6446573357e-27
```

Definition at line 6 of file [pycodata.py](#).

### 15.2.2.3 ALPHA\_PARTICLE\_MASS\_ENERGY\_EQUIVALENT

```
float pycodata.ALPHA_PARTICLE_MASS_ENERGY_EQUIVALENT = 5.9719201914e-10
```

Definition at line 9 of file [pycodata.py](#).

### 15.2.2.4 ALPHA\_PARTICLE\_MASS\_ENERGY\_EQUIVALENT\_IN\_MEV

```
float pycodata.ALPHA_PARTICLE_MASS_ENERGY_EQUIVALENT_IN_MEV = 3727.3794066e0
```

Definition at line 12 of file [pycodata.py](#).

### 15.2.2.5 ALPHA\_PARTICLE\_MASS\_IN\_U

```
float pycodata.ALPHA_PARTICLE_MASS_IN_U = 4.001506179127e0
```

Definition at line 15 of file [pycodata.py](#).

### 15.2.2.6 ALPHA\_PARTICLE\_MOLAR\_MASS

```
float pycodata.ALPHA_PARTICLE_MOLAR_MASS = 4.0015061777e-3
```

Definition at line 18 of file [pycodata.py](#).

### 15.2.2.7 ALPHA\_PARTICLE\_PROTON\_MASS\_RATIO

```
float pycodata.ALPHA_PARTICLE_PROTON_MASS_RATIO = 3.97259969009e0
```

Definition at line 21 of file [pycodata.py](#).

### 15.2.2.8 ALPHA\_PARTICLE\_RELATIVE\_ATOMIC\_MASS

```
float pycodata.ALPHA_PARTICLE_RELATIVE_ATOMIC_MASS = 4.001506179127e0
```

Definition at line 24 of file [pycodata.py](#).

#### 15.2.2.9 ANGSTROM\_STAR

```
float pycodata.ANGSTROM_STAR = 1.00001495e-10
```

Definition at line 27 of file [pycodata.py](#).

#### 15.2.2.10 ATOMIC\_MASS\_CONSTANT

```
float pycodata.ATOMIC_MASS_CONSTANT = 1.66053906660e-27
```

Definition at line 30 of file [pycodata.py](#).

#### 15.2.2.11 ATOMIC\_MASS\_CONSTANT\_ENERGY\_EQUIVALENT

```
float pycodata.ATOMIC_MASS_CONSTANT_ENERGY_EQUIVALENT = 1.49241808560e-10
```

Definition at line 33 of file [pycodata.py](#).

#### 15.2.2.12 ATOMIC\_MASS\_CONSTANT\_ENERGY\_EQUIVALENT\_IN\_MEV

```
float pycodata.ATOMIC_MASS_CONSTANT_ENERGY_EQUIVALENT_IN_MEV = 931.49410242e0
```

Definition at line 36 of file [pycodata.py](#).

#### 15.2.2.13 ATOMIC\_MASS\_UNIT\_ELECTRON\_VOLT\_RELATIONSHIP

```
float pycodata.ATOMIC_MASS_UNIT_ELECTRON_VOLT_RELATIONSHIP = 9.3149410242e8
```

Definition at line 39 of file [pycodata.py](#).

#### 15.2.2.14 ATOMIC\_MASS\_UNIT\_HARTREE\_RELATIONSHIP

```
float pycodata.ATOMIC_MASS_UNIT_HARTREE_RELATIONSHIP = 3.4231776874e7
```

Definition at line 42 of file [pycodata.py](#).

#### 15.2.2.15 ATOMIC\_MASS\_UNIT\_HERTZ\_RELATIONSHIP

```
float pycodata.ATOMIC_MASS_UNIT_HERTZ_RELATIONSHIP = 2.25234271871e23
```

Definition at line 45 of file [pycodata.py](#).

#### 15.2.2.16 ATOMIC\_MASS\_UNIT\_INVERSE\_METER\_RELATIONSHIP

```
float pycodata.ATOMIC_MASS_UNIT_INVERSE_METER_RELATIONSHIP = 7.5130066104e14
```

Definition at line 48 of file [pycodata.py](#).

#### 15.2.2.17 ATOMIC\_MASS\_UNIT\_JOULE\_RELATIONSHIP

```
float pycodata.ATOMIC_MASS_UNIT_JOULE_RELATIONSHIP = 1.49241808560e-10
```

Definition at line 51 of file [pycodata.py](#).

#### 15.2.2.18 ATOMIC\_MASS\_UNIT\_KELVIN\_RELATIONSHIP

```
float pycodata.ATOMIC_MASS_UNIT_KELVIN_RELATIONSHIP = 1.08095401916e13
```

Definition at line 54 of file [pycodata.py](#).

#### 15.2.2.19 ATOMIC\_MASS\_UNIT\_KILOGRAM\_RELATIONSHIP

```
float pycodata.ATOMIC_MASS_UNIT_KILOGRAM_RELATIONSHIP = 1.66053906660e-27
```

Definition at line 57 of file [pycodata.py](#).

#### 15.2.2.20 ATOMIC\_UNIT\_OF\_1ST\_HYPERPOLARIZABILITY

```
float pycodata.ATOMIC_UNIT_OF_1ST_HYPERPOLARIZABILITY = 3.2063613061e-53
```

Definition at line 60 of file [pycodata.py](#).

#### 15.2.2.21 ATOMIC\_UNIT\_OF\_2ND\_HYPERPOLARIZABILITY

```
float pycodata.ATOMIC_UNIT_OF_2ND_HYPERPOLARIZABILITY = 6.2353799905e-65
```

Definition at line 63 of file [pycodata.py](#).

#### 15.2.2.22 ATOMIC\_UNIT\_OF\_ACTION

```
float pycodata.ATOMIC_UNIT_OF_ACTION = 1.054571817e-34
```

Definition at line 66 of file [pycodata.py](#).

#### 15.2.2.23 ATOMIC\_UNIT\_OF\_CHARGE

```
float pycodata.ATOMIC_UNIT_OF_CHARGE = 1.602176634e-19
```

Definition at line 69 of file [pycodata.py](#).

#### 15.2.2.24 ATOMIC\_UNIT\_OF\_CHARGE\_DENSITY

```
float pycodata.ATOMIC_UNIT_OF_CHARGE_DENSITY = 1.08120238457e12
```

Definition at line 72 of file [pycodata.py](#).

#### 15.2.2.25 ATOMIC\_UNIT\_OF\_CURRENT

```
float pycodata.ATOMIC_UNIT_OF_CURRENT = 6.623618237510e-3
```

Definition at line 75 of file [pycodata.py](#).

#### 15.2.2.26 ATOMIC\_UNIT\_OF\_ELECTRIC\_DIPOLE\_MOM

```
float pycodata.ATOMIC_UNIT_OF_ELECTRIC_DIPOLE_MOM = 8.4783536255e-30
```

Definition at line 78 of file [pycodata.py](#).

### 15.2.2.27 ATOMIC\_UNIT\_OF\_ELECTRIC\_FIELD

```
float pycodata.ATOMIC_UNIT_OF_ELECTRIC_FIELD = 5.14220674763e11
```

Definition at line 81 of file [pycodata.py](#).

### 15.2.2.28 ATOMIC\_UNIT\_OF\_ELECTRIC\_FIELD\_GRADIENT

```
float pycodata.ATOMIC_UNIT_OF_ELECTRIC_FIELD_GRADIENT = 9.7173624292e21
```

Definition at line 84 of file [pycodata.py](#).

### 15.2.2.29 ATOMIC\_UNIT\_OF\_ELECTRIC\_POLARIZABILITY

```
float pycodata.ATOMIC_UNIT_OF_ELECTRIC_POLARIZABILITY = 1.64877727436e-41
```

Definition at line 87 of file [pycodata.py](#).

### 15.2.2.30 ATOMIC\_UNIT\_OF\_ELECTRIC\_POTENTIAL

```
float pycodata.ATOMIC_UNIT_OF_ELECTRIC_POTENTIAL = 27.211386245988e0
```

Definition at line 90 of file [pycodata.py](#).

### 15.2.2.31 ATOMIC\_UNIT\_OF\_ELECTRIC\_QUADRUPOLE\_MOM

```
float pycodata.ATOMIC_UNIT_OF_ELECTRIC_QUADRUPOLE_MOM = 4.4865515246e-40
```

Definition at line 93 of file [pycodata.py](#).

### 15.2.2.32 ATOMIC\_UNIT\_OF\_ENERGY

```
float pycodata.ATOMIC_UNIT_OF_ENERGY = 4.3597447222071e-18
```

Definition at line 96 of file [pycodata.py](#).

### 15.2.2.33 ATOMIC\_UNIT\_OF\_FORCE

```
float pycodata.ATOMIC_UNIT_OF_FORCE = 8.2387234983e-8
```

Definition at line 99 of file [pycodata.py](#).

### 15.2.2.34 ATOMIC\_UNIT\_OF\_LENGTH

```
float pycodata.ATOMIC_UNIT_OF_LENGTH = 5.29177210903e-11
```

Definition at line 102 of file [pycodata.py](#).

### 15.2.2.35 ATOMIC\_UNIT\_OF\_MAG\_\_DIPOLE\_MOM

```
float pycodata.ATOMIC_UNIT_OF_MAG__DIPOLE_MOM = 1.85480201566e-23
```

Definition at line 105 of file [pycodata.py](#).

### 15.2.2.36 ATOMIC\_UNIT\_OF\_MAG\_\_FLUX\_DENSITY

```
float pycodata.ATOMIC_UNIT_OF_MAG__FLUX_DENSITY = 2.35051756758e5
```

Definition at line 108 of file [pycodata.py](#).

### 15.2.2.37 ATOMIC\_UNIT\_OF\_MAGNETIZABILITY

```
float pycodata.ATOMIC_UNIT_OF_MAGNETIZABILITY = 7.8910366008e-29
```

Definition at line 111 of file [pycodata.py](#).

### 15.2.2.38 ATOMIC\_UNIT\_OF\_MASS

```
float pycodata.ATOMIC_UNIT_OF_MASS = 9.1093837015e-31
```

Definition at line 114 of file [pycodata.py](#).



### 15.2.2.39 ATOMIC\_UNIT\_OF\_MOMENTUM

```
float pycodata.ATOMIC_UNIT_OF_MOMENTUM = 1.99285191410e-24
```

Definition at line 117 of file [pycodata.py](#).

### 15.2.2.40 ATOMIC\_UNIT\_OF\_PERMITTIVITY

```
float pycodata.ATOMIC_UNIT_OF_PERMITTIVITY = 1.11265005545e-10
```

Definition at line 120 of file [pycodata.py](#).

### 15.2.2.41 ATOMIC\_UNIT\_OF\_TIME

```
float pycodata.ATOMIC_UNIT_OF_TIME = 2.4188843265857e-17
```

Definition at line 123 of file [pycodata.py](#).

### 15.2.2.42 ATOMIC\_UNIT\_OF\_VELOCITY

```
float pycodata.ATOMIC_UNIT_OF_VELOCITY = 2.18769126364e6
```

Definition at line 126 of file [pycodata.py](#).

### 15.2.2.43 AVOGADRO\_CONSTANT

```
float pycodata.AVOGADRO_CONSTANT = 6.02214076e23
```

Definition at line 129 of file [pycodata.py](#).

### 15.2.2.44 BOHR\_MAGNETON

```
float pycodata.BOHR_MAGNETON = 9.2740100783e-24
```

Definition at line 132 of file [pycodata.py](#).

#### 15.2.2.45 BOHR\_MAGNETON\_IN\_EV\_T

```
float pycodata.BOHR_MAGNETON_IN_EV_T = 5.7883818060e-5
```

Definition at line 135 of file [pycodata.py](#).

#### 15.2.2.46 BOHR\_MAGNETON\_IN\_HZ\_T

```
float pycodata.BOHR_MAGNETON_IN_HZ_T = 1.39962449361e10
```

Definition at line 138 of file [pycodata.py](#).

#### 15.2.2.47 BOHR\_MAGNETON\_IN\_INVERSE\_METER\_PER\_TESLA

```
float pycodata.BOHR_MAGNETON_IN_INVERSE_METER_PER_TESLA = 46.686447783e0
```

Definition at line 141 of file [pycodata.py](#).

#### 15.2.2.48 BOHR\_MAGNETON\_IN\_K\_T

```
float pycodata.BOHR_MAGNETON_IN_K_T = 0.67171381563e0
```

Definition at line 144 of file [pycodata.py](#).

#### 15.2.2.49 BOHR\_RADIUS

```
float pycodata.BOHR_RADIUS = 5.29177210903e-11
```

Definition at line 147 of file [pycodata.py](#).

#### 15.2.2.50 BOLTZMANN\_CONSTANT

```
float pycodata.BOLTZMANN_CONSTANT = 1.380649e-23
```

Definition at line 150 of file [pycodata.py](#).

#### 15.2.2.51 BOLTZMANN\_CONSTANT\_IN\_EV\_K

```
float pycodata.BOLTZMANN_CONSTANT_IN_EV_K = 8.617333262e-5
```

Definition at line 153 of file [pycodata.py](#).

#### 15.2.2.52 BOLTZMANN\_CONSTANT\_IN\_HZ\_K

```
float pycodata.BOLTZMANN_CONSTANT_IN_HZ_K = 2.083661912e10
```

Definition at line 156 of file [pycodata.py](#).

#### 15.2.2.53 BOLTZMANN\_CONSTANT\_IN\_INVERSE\_METER\_PER\_KELVIN

```
float pycodata.BOLTZMANN_CONSTANT_IN_INVERSE_METER_PER_KELVIN = 69.50348004e0
```

Definition at line 159 of file [pycodata.py](#).

#### 15.2.2.54 CHARACTERISTIC\_IMPEDANCE\_OF\_VACUUM

```
float pycodata.CHARACTERISTIC_IMPEDANCE_OF_VACUUM = 376.730313668e0
```

Definition at line 162 of file [pycodata.py](#).

#### 15.2.2.55 CLASSICAL\_ELECTRON\_RADIUS

```
float pycodata.CLASSICAL_ELECTRON_RADIUS = 2.8179403262e-15
```

Definition at line 165 of file [pycodata.py](#).

#### 15.2.2.56 COMPTON\_WAVELENGTH

```
float pycodata.COMPTON_WAVELENGTH = 2.42631023867e-12
```

Definition at line 168 of file [pycodata.py](#).

#### 15.2.2.57 CONDUCTANCE\_QUANTUM

```
float pycodata.CONDUCTANCE_QUANTUM = 7.748091729e-5
```

Definition at line 171 of file [pycodata.py](#).

#### 15.2.2.58 CONVENTIONAL\_VALUE\_OF\_AMPERE\_90

```
float pycodata.CONVENTIONAL_VALUE_OF_AMPERE_90 = 1.00000008887e0
```

Definition at line 174 of file [pycodata.py](#).

#### 15.2.2.59 CONVENTIONAL\_VALUE\_OF\_COULOMB\_90

```
float pycodata.CONVENTIONAL_VALUE_OF_COULOMB_90 = 1.00000008887e0
```

Definition at line 177 of file [pycodata.py](#).

#### 15.2.2.60 CONVENTIONAL\_VALUE\_OF\_FARAD\_90

```
float pycodata.CONVENTIONAL_VALUE_OF_FARAD_90 = 0.99999998220e0
```

Definition at line 180 of file [pycodata.py](#).

#### 15.2.2.61 CONVENTIONAL\_VALUE\_OF\_HENRY\_90

```
float pycodata.CONVENTIONAL_VALUE_OF_HENRY_90 = 1.00000001779e0
```

Definition at line 183 of file [pycodata.py](#).

#### 15.2.2.62 CONVENTIONAL\_VALUE\_OF\_JOSEPHSON\_CONSTANT

```
float pycodata.CONVENTIONAL_VALUE_OF_JOSEPHSON_CONSTANT = 483597.9e9
```

Definition at line 186 of file [pycodata.py](#).

**15.2.2.63 CONVENTIONAL\_VALUE\_OF\_OHM\_90**

```
float pycodata.CONVENTIONAL_VALUE_OF_OHM_90 = 1.00000001779e0
```

Definition at line 189 of file [pycodata.py](#).

**15.2.2.64 CONVENTIONAL\_VALUE\_OF\_VOLT\_90**

```
float pycodata.CONVENTIONAL_VALUE_OF_VOLT_90 = 1.00000010666e0
```

Definition at line 192 of file [pycodata.py](#).

**15.2.2.65 CONVENTIONAL\_VALUE\_OF\_VON\_KLITZING\_CONSTANT**

```
float pycodata.CONVENTIONAL_VALUE_OF_VON_KLITZING_CONSTANT = 25812.807e0
```

Definition at line 195 of file [pycodata.py](#).

**15.2.2.66 CONVENTIONAL\_VALUE\_OF\_WATT\_90**

```
float pycodata.CONVENTIONAL_VALUE_OF_WATT_90 = 1.00000019553e0
```

Definition at line 198 of file [pycodata.py](#).

**15.2.2.67 COPPER\_X\_UNIT**

```
float pycodata.COPPER_X_UNIT = 1.00207697e-13
```

Definition at line 201 of file [pycodata.py](#).

**15.2.2.68 DEUTERON\_ELECTRON\_MAG\_MOM\_RATIO**

```
float pycodata.DEUTERON_ELECTRON_MAG_MOM_RATIO = -4.664345551e-4
```

Definition at line 204 of file [pycodata.py](#).

#### 15.2.2.69 DEUTERON\_ELECTRON\_MASS\_RATIO

```
float pycodata.DEUTERON_ELECTRON_MASS_RATIO = 3670.48296788e0
```

Definition at line 207 of file [pycodata.py](#).

#### 15.2.2.70 DEUTERON\_G\_FACTOR

```
float pycodata.DEUTERON_G_FACTOR = 0.8574382338e0
```

Definition at line 210 of file [pycodata.py](#).

#### 15.2.2.71 DEUTERON\_MAG\_\_MOM

```
float pycodata.DEUTERON_MAG__MOM = 4.330735094e-27
```

Definition at line 213 of file [pycodata.py](#).

#### 15.2.2.72 DEUTERON\_MAG\_\_MOM\_\_TO\_BOHR\_MAGNETON\_RATIO

```
float pycodata.DEUTERON_MAG__MOM__TO_BOHR_MAGNETON_RATIO = 4.669754570e-4
```

Definition at line 216 of file [pycodata.py](#).

#### 15.2.2.73 DEUTERON\_MAG\_\_MOM\_\_TO\_NUCLEAR\_MAGNETON\_RATIO

```
float pycodata.DEUTERON_MAG__MOM__TO_NUCLEAR_MAGNETON_RATIO = 0.8574382338e0
```

Definition at line 219 of file [pycodata.py](#).

#### 15.2.2.74 DEUTERON\_MASS

```
float pycodata.DEUTERON_MASS = 3.3435837724e-27
```

Definition at line 222 of file [pycodata.py](#).

**15.2.2.75 DEUTERON\_MASS\_ENERGY\_EQUIVALENT**

```
float pycodata.DEUTERON_MASS_ENERGY_EQUIVALENT = 3.00506323102e-10
```

Definition at line 225 of file [pycodata.py](#).

**15.2.2.76 DEUTERON\_MASS\_ENERGY\_EQUIVALENT\_IN\_MEV**

```
float pycodata.DEUTERON_MASS_ENERGY_EQUIVALENT_IN_MEV = 1875.61294257e0
```

Definition at line 228 of file [pycodata.py](#).

**15.2.2.77 DEUTERON\_MASS\_IN\_U**

```
float pycodata.DEUTERON_MASS_IN_U = 2.013553212745e0
```

Definition at line 231 of file [pycodata.py](#).

**15.2.2.78 DEUTERON\_MOLAR\_MASS**

```
float pycodata.DEUTERON_MOLAR_MASS = 2.01355321205e-3
```

Definition at line 234 of file [pycodata.py](#).

**15.2.2.79 DEUTERON\_NEUTRON\_MAG\_MOM\_RATIO**

```
float pycodata.DEUTERON_NEUTRON_MAG_MOM_RATIO = -0.44820653e0
```

Definition at line 237 of file [pycodata.py](#).

**15.2.2.80 DEUTERON\_PROTON\_MAG\_MOM\_RATIO**

```
float pycodata.DEUTERON_PROTON_MAG_MOM_RATIO = 0.30701220939e0
```

Definition at line 240 of file [pycodata.py](#).

#### 15.2.2.81 DEUTERON\_PROTON\_MASS\_RATIO

```
float pycodata.DEUTERON_PROTON_MASS_RATIO = 1.99900750139e0
```

Definition at line 243 of file [pycodata.py](#).

#### 15.2.2.82 DEUTERON\_RELATIVE\_ATOMIC\_MASS

```
float pycodata.DEUTERON_RELATIVE_ATOMIC_MASS = 2.013553212745e0
```

Definition at line 246 of file [pycodata.py](#).

#### 15.2.2.83 DEUTERON\_RMS\_CHARGE\_RADIUS

```
float pycodata.DEUTERON_RMS_CHARGE_RADIUS = 2.12799e-15
```

Definition at line 249 of file [pycodata.py](#).

#### 15.2.2.84 ELECTRON\_CHARGE\_TO\_MASS\_QUOTIENT

```
float pycodata.ELECTRON_CHARGE_TO_MASS_QUOTIENT = -1.75882001076e11
```

Definition at line 252 of file [pycodata.py](#).

#### 15.2.2.85 ELECTRON\_DEUTERON\_MAG\_MOM\_RATIO

```
float pycodata.ELECTRON_DEUTERON_MAG_MOM_RATIO = -2143.9234915e0
```

Definition at line 255 of file [pycodata.py](#).

#### 15.2.2.86 ELECTRON\_DEUTERON\_MASS\_RATIO

```
float pycodata.ELECTRON_DEUTERON_MASS_RATIO = 2.724437107462e-4
```

Definition at line 258 of file [pycodata.py](#).



**15.2.2.87 ELECTRON\_G\_FACTOR**

```
float pycodata.ELECTRON_G_FACTOR = -2.00231930436256e0
```

Definition at line 261 of file [pycodata.py](#).

**15.2.2.88 ELECTRON\_GYROMAG\_\_RATIO**

```
float pycodata.ELECTRON_GYROMAG__RATIO = 1.76085963023e11
```

Definition at line 264 of file [pycodata.py](#).

**15.2.2.89 ELECTRON\_GYROMAG\_\_RATIO\_IN\_MHZ\_T**

```
float pycodata.ELECTRON_GYROMAG__RATIO_IN_MHZ_T = 28024.9514242e0
```

Definition at line 267 of file [pycodata.py](#).

**15.2.2.90 ELECTRON\_HELION\_MASS\_RATIO**

```
float pycodata.ELECTRON_HELION_MASS_RATIO = 1.819543074573e-4
```

Definition at line 270 of file [pycodata.py](#).

**15.2.2.91 ELECTRON\_MAG\_\_MOM**

```
float pycodata.ELECTRON_MAG__MOM = -9.2847647043e-24
```

Definition at line 273 of file [pycodata.py](#).

**15.2.2.92 ELECTRON\_MAG\_\_MOM\_\_ANOMALY**

```
float pycodata.ELECTRON_MAG__MOM__ANOMALY = 1.15965218128e-3
```

Definition at line 276 of file [pycodata.py](#).

#### 15.2.2.93 ELECTRON\_MAG\_\_MOM\_\_TO\_BOHR\_MAGNETON\_RATIO

```
float pycodata.ELECTRON_MAG__MOM__TO_BOHR_MAGNETON_RATIO = -1.00115965218128e0
```

Definition at line 279 of file [pycodata.py](#).

#### 15.2.2.94 ELECTRON\_MAG\_\_MOM\_\_TO\_NUCLEAR\_MAGNETON\_RATIO

```
float pycodata.ELECTRON_MAG__MOM__TO_NUCLEAR_MAGNETON_RATIO = -1838.28197188e0
```

Definition at line 282 of file [pycodata.py](#).

#### 15.2.2.95 ELECTRON\_MASS

```
float pycodata.ELECTRON_MASS = 9.1093837015e-31
```

Definition at line 285 of file [pycodata.py](#).

#### 15.2.2.96 ELECTRON\_MASS\_ENERGY\_EQUIVALENT

```
float pycodata.ELECTRON_MASS_ENERGY_EQUIVALENT = 8.1871057769e-14
```

Definition at line 288 of file [pycodata.py](#).

#### 15.2.2.97 ELECTRON\_MASS\_ENERGY\_EQUIVALENT\_IN\_MEV

```
float pycodata.ELECTRON_MASS_ENERGY_EQUIVALENT_IN_MEV = 0.51099895000e0
```

Definition at line 291 of file [pycodata.py](#).

#### 15.2.2.98 ELECTRON\_MASS\_IN\_U

```
float pycodata.ELECTRON_MASS_IN_U = 5.48579909065e-4
```

Definition at line 294 of file [pycodata.py](#).

**15.2.2.99 ELECTRON\_MOLAR\_MASS**

```
float pycodata.ELECTRON_MOLAR_MASS = 5.4857990888e-7
```

Definition at line 297 of file [pycodata.py](#).

**15.2.2.100 ELECTRON\_MUON\_MAG\_\_MOM\_\_RATIO**

```
float pycodata.ELECTRON_MUON_MAG__MOM__RATIO = 206.7669883e0
```

Definition at line 300 of file [pycodata.py](#).

**15.2.2.101 ELECTRON\_MUON\_MASS\_RATIO**

```
float pycodata.ELECTRON_MUON_MASS_RATIO = 4.83633169e-3
```

Definition at line 303 of file [pycodata.py](#).

**15.2.2.102 ELECTRON\_NEUTRON\_MAG\_\_MOM\_\_RATIO**

```
float pycodata.ELECTRON_NEUTRON_MAG__MOM__RATIO = 960.92050e0
```

Definition at line 306 of file [pycodata.py](#).

**15.2.2.103 ELECTRON\_NEUTRON\_MASS\_RATIO**

```
float pycodata.ELECTRON_NEUTRON_MASS_RATIO = 5.4386734424e-4
```

Definition at line 309 of file [pycodata.py](#).

**15.2.2.104 ELECTRON\_PROTON\_MAG\_\_MOM\_\_RATIO**

```
float pycodata.ELECTRON_PROTON_MAG__MOM__RATIO = -658.21068789e0
```

Definition at line 312 of file [pycodata.py](#).

**15.2.2.105 ELECTRON\_PROTON\_MASS\_RATIO**

```
float pycodata.ELECTRON_PROTON_MASS_RATIO = 5.44617021487e-4
```

Definition at line 315 of file [pycodata.py](#).

**15.2.2.106 ELECTRON\_RELATIVE\_ATOMIC\_MASS**

```
float pycodata.ELECTRON_RELATIVE_ATOMIC_MASS = 5.48579909065e-4
```

Definition at line 318 of file [pycodata.py](#).

**15.2.2.107 ELECTRON\_TAU\_MASS\_RATIO**

```
float pycodata.ELECTRON_TAU_MASS_RATIO = 2.87585e-4
```

Definition at line 321 of file [pycodata.py](#).

**15.2.2.108 ELECTRON\_TO\_ALPHA\_PARTICLE\_MASS\_RATIO**

```
float pycodata.ELECTRON_TO_ALPHA_PARTICLE_MASS_RATIO = 1.370933554787e-4
```

Definition at line 324 of file [pycodata.py](#).

**15.2.2.109 ELECTRON\_TO\_SHIELDED\_HELION\_MAG\_MOM\_RATIO**

```
float pycodata.ELECTRON_TO_SHIELDED_HELION_MAG_MOM_RATIO = 864.058257e0
```

Definition at line 327 of file [pycodata.py](#).

**15.2.2.110 ELECTRON\_TO\_SHIELDED\_PROTON\_MAG\_MOM\_RATIO**

```
float pycodata.ELECTRON_TO_SHIELDED_PROTON_MAG_MOM_RATIO = -658.2275971e0
```

Definition at line 330 of file [pycodata.py](#).

**15.2.2.111 ELECTRON\_TRITON\_MASS\_RATIO**

```
float pycodata.ELECTRON_TRITON_MASS_RATIO = 1.819200062251e-4
```

Definition at line 333 of file [pycodata.py](#).

**15.2.2.112 ELECTRON\_VOLT**

```
float pycodata.ELECTRON_VOLT = 1.602176634e-19
```

Definition at line 336 of file [pycodata.py](#).

**15.2.2.113 ELECTRON\_VOLT\_ATOMIC\_MASS\_UNIT\_RELATIONSHIP**

```
float pycodata.ELECTRON_VOLT_ATOMIC_MASS_UNIT_RELATIONSHIP = 1.07354410233e-9
```

Definition at line 339 of file [pycodata.py](#).

**15.2.2.114 ELECTRON\_VOLT\_HARTREE\_RELATIONSHIP**

```
float pycodata.ELECTRON_VOLT_HARTREE_RELATIONSHIP = 3.6749322175655e-2
```

Definition at line 342 of file [pycodata.py](#).

**15.2.2.115 ELECTRON\_VOLT\_HERTZ\_RELATIONSHIP**

```
float pycodata.ELECTRON_VOLT_HERTZ_RELATIONSHIP = 2.417989242e14
```

Definition at line 345 of file [pycodata.py](#).

**15.2.2.116 ELECTRON\_VOLT\_INVERSE\_METER\_RELATIONSHIP**

```
float pycodata.ELECTRON_VOLT_INVERSE_METER_RELATIONSHIP = 8.065543937e5
```

Definition at line 348 of file [pycodata.py](#).

#### 15.2.2.117 ELECTRON\_VOLT\_JOULE\_RELATIONSHIP

```
float pycodata.ELECTRON_VOLT_JOULE_RELATIONSHIP = 1.602176634e-19
```

Definition at line 351 of file [pycodata.py](#).

#### 15.2.2.118 ELECTRON\_VOLT\_KELVIN\_RELATIONSHIP

```
float pycodata.ELECTRON_VOLT_KELVIN_RELATIONSHIP = 1.160451812e4
```

Definition at line 354 of file [pycodata.py](#).

#### 15.2.2.119 ELECTRON\_VOLT\_KILOGRAM\_RELATIONSHIP

```
float pycodata.ELECTRON_VOLT_KILOGRAM_RELATIONSHIP = 1.782661921e-36
```

Definition at line 357 of file [pycodata.py](#).

#### 15.2.2.120 ELEMENTARY\_CHARGE

```
float pycodata.ELEMENTARY_CHARGE = 1.602176634e-19
```

Definition at line 360 of file [pycodata.py](#).

#### 15.2.2.121 ELEMENTARY\_CHARGE\_OVER\_H\_BAR

```
float pycodata.ELEMENTARY_CHARGE_OVER_H_BAR = 1.519267447e15
```

Definition at line 363 of file [pycodata.py](#).

#### 15.2.2.122 FARADAY\_CONSTANT

```
float pycodata.FARADAY_CONSTANT = 96485.33212e0
```

Definition at line 366 of file [pycodata.py](#).

**15.2.2.123 FERM\_COUPLING\_CONSTANT**

```
float pycodata.FERMI_COUPLING_CONSTANT = 1.1663787e-5
```

Definition at line 369 of file [pycodata.py](#).

**15.2.2.124 FINE\_STRUCTURE\_CONSTANT**

```
float pycodata.FINE_STRUCTURE_CONSTANT = 7.2973525693e-3
```

Definition at line 372 of file [pycodata.py](#).

**15.2.2.125 FIRST\_RADIATION\_CONSTANT**

```
float pycodata.FIRST_RADIATION_CONSTANT = 3.741771852e-16
```

Definition at line 375 of file [pycodata.py](#).

**15.2.2.126 FIRST\_RADIATION\_CONSTANT\_FOR\_SPECTRAL\_RADIANCE**

```
float pycodata.FIRST_RADIATION_CONSTANT_FOR_SPECTRAL_RADIANCE = 1.191042972e-16
```

Definition at line 378 of file [pycodata.py](#).

**15.2.2.127 HARTREE\_ATOMIC\_MASS\_UNIT\_RELATIONSHIP**

```
float pycodata.HARTREE_ATOMIC_MASS_UNIT_RELATIONSHIP = 2.92126232205e-8
```

Definition at line 381 of file [pycodata.py](#).

**15.2.2.128 HARTREE\_ELECTRON\_VOLT\_RELATIONSHIP**

```
float pycodata.HARTREE_ELECTRON_VOLT_RELATIONSHIP = 27.211386245988e0
```

Definition at line 384 of file [pycodata.py](#).

#### 15.2.2.129 HARTREE\_ENERGY

```
float pycodata.HARTREE_ENERGY = 4.3597447222071e-18
```

Definition at line [387](#) of file [pycodata.py](#).

#### 15.2.2.130 HARTREE\_ENERGY\_IN\_EV

```
float pycodata.HARTREE_ENERGY_IN_EV = 27.211386245988e0
```

Definition at line [390](#) of file [pycodata.py](#).

#### 15.2.2.131 HARTREE\_HERTZ\_RELATIONSHIP

```
float pycodata.HARTREE_HERTZ_RELATIONSHIP = 6.579683920502e15
```

Definition at line [393](#) of file [pycodata.py](#).

#### 15.2.2.132 HARTREE\_INVERSE\_METER\_RELATIONSHIP

```
float pycodata.HARTREE_INVERSE_METER_RELATIONSHIP = 2.1947463136320e7
```

Definition at line [396](#) of file [pycodata.py](#).

#### 15.2.2.133 HARTREE\_JOULE\_RELATIONSHIP

```
float pycodata.HARTREE_JOULE_RELATIONSHIP = 4.3597447222071e-18
```

Definition at line [399](#) of file [pycodata.py](#).

#### 15.2.2.134 HARTREE\_KELVIN\_RELATIONSHIP

```
float pycodata.HARTREE_KELVIN_RELATIONSHIP = 3.1577502480407e5
```

Definition at line [402](#) of file [pycodata.py](#).



**15.2.2.135 HARTREE\_KILOGRAM\_RELATIONSHIP**

```
float pycodata.HARTREE_KILOGRAM_RELATIONSHIP = 4.8508702095432e-35
```

Definition at line 405 of file [pycodata.py](#).

**15.2.2.136 HELION\_ELECTRON\_MASS\_RATIO**

```
float pycodata.HELION_ELECTRON_MASS_RATIO = 5495.88528007e0
```

Definition at line 408 of file [pycodata.py](#).

**15.2.2.137 HELION\_G\_FACTOR**

```
float pycodata.HELION_G_FACTOR = -4.255250615e0
```

Definition at line 411 of file [pycodata.py](#).

**15.2.2.138 HELION\_MAG\_\_MOM**

```
float pycodata.HELION_MAG__MOM = -1.074617532e-26
```

Definition at line 414 of file [pycodata.py](#).

**15.2.2.139 HELION\_MAG\_\_MOM\_\_TO\_BOHR\_MAGNETON\_RATIO**

```
float pycodata.HELION_MAG__MOM__TO_BOHR_MAGNETON_RATIO = -1.158740958e-3
```

Definition at line 417 of file [pycodata.py](#).

**15.2.2.140 HELION\_MAG\_\_MOM\_\_TO\_NUCLEAR\_MAGNETON\_RATIO**

```
float pycodata.HELION_MAG__MOM__TO_NUCLEAR_MAGNETON_RATIO = -2.127625307e0
```

Definition at line 420 of file [pycodata.py](#).

**15.2.2.141 HELION\_MASS**

```
float pycodata.HELION_MASS = 5.0064127796e-27
```

Definition at line [423](#) of file [pycodata.py](#).

**15.2.2.142 HELION\_MASS\_ENERGY\_EQUIVALENT**

```
float pycodata.HELION_MASS_ENERGY_EQUIVALENT = 4.4995394125e-10
```

Definition at line [426](#) of file [pycodata.py](#).

**15.2.2.143 HELION\_MASS\_ENERGY\_EQUIVALENT\_IN\_MEV**

```
float pycodata.HELION_MASS_ENERGY_EQUIVALENT_IN_MEV = 2808.39160743e0
```

Definition at line [429](#) of file [pycodata.py](#).

**15.2.2.144 HELION\_MASS\_IN\_U**

```
float pycodata.HELION_MASS_IN_U = 3.014932247175e0
```

Definition at line [432](#) of file [pycodata.py](#).

**15.2.2.145 HELION\_MOLAR\_MASS**

```
float pycodata.HELION_MOLAR_MASS = 3.01493224613e-3
```

Definition at line [435](#) of file [pycodata.py](#).

**15.2.2.146 HELION\_PROTON\_MASS\_RATIO**

```
float pycodata.HELION_PROTON_MASS_RATIO = 2.99315267167e0
```

Definition at line [438](#) of file [pycodata.py](#).

**15.2.2.147 HELION\_RELATIVE\_ATOMIC\_MASS**

```
float pycodata.HELION_RELATIVE_ATOMIC_MASS = 3.014932247175e0
```

Definition at line 441 of file [pycodata.py](#).

**15.2.2.148 HELION\_SHIELDING\_SHIFT**

```
float pycodata.HELION_SHIELDING_SHIFT = 5.996743e-5
```

Definition at line 444 of file [pycodata.py](#).

**15.2.2.149 HERTZ\_ATOMIC\_MASS\_UNIT\_RELATIONSHIP**

```
float pycodata.HERTZ_ATOMIC_MASS_UNIT_RELATIONSHIP = 4.4398216652e-24
```

Definition at line 447 of file [pycodata.py](#).

**15.2.2.150 HERTZ\_ELECTRON\_VOLT\_RELATIONSHIP**

```
float pycodata.HERTZ_ELECTRON_VOLT_RELATIONSHIP = 4.135667696e-15
```

Definition at line 450 of file [pycodata.py](#).

**15.2.2.151 HERTZ\_HARTREE\_RELATIONSHIP**

```
float pycodata.HERTZ_HARTREE_RELATIONSHIP = 1.5198298460570e-16
```

Definition at line 453 of file [pycodata.py](#).

**15.2.2.152 HERTZ\_INVERSE\_METER\_RELATIONSHIP**

```
float pycodata.HERTZ_INVERSE_METER_RELATIONSHIP = 3.335640951e-9
```

Definition at line 456 of file [pycodata.py](#).

**15.2.2.153 HERTZ\_JOULE\_RELATIONSHIP**

```
float pycodata.HERTZ_JOULE_RELATIONSHIP = 6.62607015e-34
```

Definition at line [459](#) of file [pycodata.py](#).

**15.2.2.154 HERTZ\_KELVIN\_RELATIONSHIP**

```
float pycodata.HERTZ_KELVIN_RELATIONSHIP = 4.799243073e-11
```

Definition at line [462](#) of file [pycodata.py](#).

**15.2.2.155 HERTZ\_KILOGRAM\_RELATIONSHIP**

```
float pycodata.HERTZ_KILOGRAM_RELATIONSHIP = 7.372497323e-51
```

Definition at line [465](#) of file [pycodata.py](#).

**15.2.2.156 HYPERFINE\_TRANSITION\_FREQUENCY\_OF\_CS\_133**

```
float pycodata.HYPERFINE_TRANSITION_FREQUENCY_OF_CS_133 = 9192631770.0e0
```

Definition at line [468](#) of file [pycodata.py](#).

**15.2.2.157 INVERSE\_FINE\_STRUCTURE\_CONSTANT**

```
float pycodata.INVERSE_FINE_STRUCTURE_CONSTANT = 137.035999084e0
```

Definition at line [471](#) of file [pycodata.py](#).

**15.2.2.158 INVERSE\_METER\_ATOMIC\_MASS\_UNIT\_RELATIONSHIP**

```
float pycodata.INVERSE_METER_ATOMIC_MASS_UNIT_RELATIONSHIP = 1.33102505010e-15
```

Definition at line [474](#) of file [pycodata.py](#).

**15.2.2.159 INVERSE\_METER\_ELECTRON\_VOLT\_RELATIONSHIP**

```
float pycodata.INVERSE_METER_ELECTRON_VOLT_RELATIONSHIP = 1.239841984e-6
```

Definition at line 477 of file [pycodata.py](#).

**15.2.2.160 INVERSE\_METER\_HARTREE\_RELATIONSHIP**

```
float pycodata.INVERSE_METER_HARTREE_RELATIONSHIP = 4.5563352529120e-8
```

Definition at line 480 of file [pycodata.py](#).

**15.2.2.161 INVERSE\_METER\_HERTZ\_RELATIONSHIP**

```
float pycodata.INVERSE_METER_HERTZ_RELATIONSHIP = 299792458.0e0
```

Definition at line 483 of file [pycodata.py](#).

**15.2.2.162 INVERSE\_METER\_JOULE\_RELATIONSHIP**

```
float pycodata.INVERSE_METER_JOULE_RELATIONSHIP = 1.986445857e-25
```

Definition at line 486 of file [pycodata.py](#).

**15.2.2.163 INVERSE\_METER\_KELVIN\_RELATIONSHIP**

```
float pycodata.INVERSE_METER_KELVIN_RELATIONSHIP = 1.438776877e-2
```

Definition at line 489 of file [pycodata.py](#).

**15.2.2.164 INVERSE\_METER\_KILOGRAM\_RELATIONSHIP**

```
float pycodata.INVERSE_METER_KILOGRAM_RELATIONSHIP = 2.210219094e-42
```

Definition at line 492 of file [pycodata.py](#).

**15.2.2.165 INVERSE\_OF\_CONDUCTANCE\_QUANTUM**

```
float pycodata.INVERSE_OF_CONDUCTANCE_QUANTUM = 12906.40372e0
```

Definition at line 495 of file [pycodata.py](#).

**15.2.2.166 JOSEPHSON\_CONSTANT**

```
float pycodata.JOSEPHSON_CONSTANT = 483597.8484e9
```

Definition at line 498 of file [pycodata.py](#).

**15.2.2.167 JOULE\_ATOMIC\_MASS\_UNIT\_RELATIONSHIP**

```
float pycodata.JOULE_ATOMIC_MASS_UNIT_RELATIONSHIP = 6.7005352565e9
```

Definition at line 501 of file [pycodata.py](#).

**15.2.2.168 JOULE\_ELECTRON\_VOLT\_RELATIONSHIP**

```
float pycodata.JOULE_ELECTRON_VOLT_RELATIONSHIP = 6.241509074e18
```

Definition at line 504 of file [pycodata.py](#).

**15.2.2.169 JOULE\_HARTREE\_RELATIONSHIP**

```
float pycodata.JOULE_HARTREE_RELATIONSHIP = 2.2937122783963e17
```

Definition at line 507 of file [pycodata.py](#).

**15.2.2.170 JOULE\_HERTZ\_RELATIONSHIP**

```
float pycodata.JOULE_HERTZ_RELATIONSHIP = 1.509190179e33
```

Definition at line 510 of file [pycodata.py](#).

**15.2.2.171 JOULE\_INVERSE\_METER\_RELATIONSHIP**

```
float pycodata.JOULE_INVERSE_METER_RELATIONSHIP = 5.034116567e24
```

Definition at line 513 of file [pycodata.py](#).

**15.2.2.172 JOULE\_KELVIN\_RELATIONSHIP**

```
float pycodata.JOULE_KELVIN_RELATIONSHIP = 7.242970516e22
```

Definition at line 516 of file [pycodata.py](#).

**15.2.2.173 JOULE\_KILOGRAM\_RELATIONSHIP**

```
float pycodata.JOULE_KILOGRAM_RELATIONSHIP = 1.112650056e-17
```

Definition at line 519 of file [pycodata.py](#).

**15.2.2.174 KELVIN\_ATOMIC\_MASS\_UNIT\_RELATIONSHIP**

```
float pycodata.KELVIN_ATOMIC_MASS_UNIT_RELATIONSHIP = 9.2510873014e-14
```

Definition at line 522 of file [pycodata.py](#).

**15.2.2.175 KELVIN\_ELECTRON\_VOLT\_RELATIONSHIP**

```
float pycodata.KELVIN_ELECTRON_VOLT_RELATIONSHIP = 8.617333262e-5
```

Definition at line 525 of file [pycodata.py](#).

**15.2.2.176 KELVIN\_HARTREE\_RELATIONSHIP**

```
float pycodata.KELVIN_HARTREE_RELATIONSHIP = 3.1668115634556e-6
```

Definition at line 528 of file [pycodata.py](#).

**15.2.2.177 KELVIN\_HERTZ\_RELATIONSHIP**

```
float pycodata.KELVIN_HERTZ_RELATIONSHIP = 2.083661912e10
```

Definition at line 531 of file [pycodata.py](#).

**15.2.2.178 KELVIN\_INVERSE\_METER\_RELATIONSHIP**

```
float pycodata.KELVIN_INVERSE_METER_RELATIONSHIP = 69.50348004e0
```

Definition at line 534 of file [pycodata.py](#).

**15.2.2.179 KELVIN\_JOULE\_RELATIONSHIP**

```
float pycodata.KELVIN_JOULE_RELATIONSHIP = 1.380649e-23
```

Definition at line 537 of file [pycodata.py](#).

**15.2.2.180 KELVIN\_KILOGRAM\_RELATIONSHIP**

```
float pycodata.KELVIN_KILOGRAM_RELATIONSHIP = 1.536179187e-40
```

Definition at line 540 of file [pycodata.py](#).

**15.2.2.181 KILOGRAM\_ATOMIC\_MASS\_UNIT\_RELATIONSHIP**

```
float pycodata.KILOGRAM_ATOMIC_MASS_UNIT_RELATIONSHIP = 6.0221407621e26
```

Definition at line 543 of file [pycodata.py](#).

**15.2.2.182 KILOGRAM\_ELECTRON\_VOLT\_RELATIONSHIP**

```
float pycodata.KILOGRAM_ELECTRON_VOLT_RELATIONSHIP = 5.609588603e35
```

Definition at line 546 of file [pycodata.py](#).



**15.2.2.183 KILOGRAM\_HARTREE\_RELATIONSHIP**

```
float pycodata.KILOGRAM_HARTREE_RELATIONSHIP = 2.0614857887409e34
```

Definition at line 549 of file [pycodata.py](#).

**15.2.2.184 KILOGRAM\_HERTZ\_RELATIONSHIP**

```
float pycodata.KILOGRAM_HERTZ_RELATIONSHIP = 1.356392489e50
```

Definition at line 552 of file [pycodata.py](#).

**15.2.2.185 KILOGRAM\_INVERSE\_METER\_RELATIONSHIP**

```
float pycodata.KILOGRAM_INVERSE_METER_RELATIONSHIP = 4.524438335e41
```

Definition at line 555 of file [pycodata.py](#).

**15.2.2.186 KILOGRAM\_JOULE\_RELATIONSHIP**

```
float pycodata.KILOGRAM_JOULE_RELATIONSHIP = 8.987551787e16
```

Definition at line 558 of file [pycodata.py](#).

**15.2.2.187 KILOGRAM\_KELVIN\_RELATIONSHIP**

```
float pycodata.KILOGRAM_KELVIN_RELATIONSHIP = 6.509657260e39
```

Definition at line 561 of file [pycodata.py](#).

**15.2.2.188 LATTICE\_PARAMETER\_OF\_SILICON**

```
float pycodata.LATTICE_PARAMETER_OF_SILICON = 5.431020511e-10
```

Definition at line 564 of file [pycodata.py](#).

**15.2.2.189 LATTICE\_SPACING\_OF\_IDEAL\_SI\_220**

```
float pycodata.LATTICE_SPACING_OF_IDEAL_SI_220 = 1.920155716e-10
```

Definition at line 567 of file [pycodata.py](#).

**15.2.2.190 LOSCHMIDT\_CONSTANT\_273\_15\_K\_100\_KPA**

```
float pycodata.LOSCHMIDT_CONSTANT_273_15_K_100_KPA = 2.651645804e25
```

Definition at line 570 of file [pycodata.py](#).

**15.2.2.191 LOSCHMIDT\_CONSTANT\_273\_15\_K\_101\_325\_KPA**

```
float pycodata.LOSCHMIDT_CONSTANT_273_15_K_101_325_KPA = 2.686780111e25
```

Definition at line 573 of file [pycodata.py](#).

**15.2.2.192 LUMINOUS EFFICACY**

```
float pycodata.LUMINOUS EFFICACY = 683.0e0
```

Definition at line 576 of file [pycodata.py](#).

**15.2.2.193 MAG\_FLUX\_QUANTUM**

```
float pycodata.MAG_FLUX_QUANTUM = 2.067833848e-15
```

Definition at line 579 of file [pycodata.py](#).

**15.2.2.194 MOLAR\_GAS\_CONSTANT**

```
float pycodata.MOLAR_GAS_CONSTANT = 8.314462618e0
```

Definition at line 582 of file [pycodata.py](#).

**15.2.2.195 MOLAR\_MASS\_CONSTANT**

```
float pycodata.MOLAR_MASS_CONSTANT = 0.99999999965e-3
```

Definition at line 585 of file [pycodata.py](#).

**15.2.2.196 MOLAR\_MASS\_OF\_CARBON\_12**

```
float pycodata.MOLAR_MASS_OF_CARBON_12 = 11.9999999958e-3
```

Definition at line 588 of file [pycodata.py](#).

**15.2.2.197 MOLAR\_PLANCK\_CONSTANT**

```
float pycodata.MOLAR_PLANCK_CONSTANT = 3.990312712e-10
```

Definition at line 591 of file [pycodata.py](#).

**15.2.2.198 MOLAR\_VOLUME\_OF\_IDEAL\_GAS\_\_273\_15\_K\_\_100\_KPA**

```
float pycodata.MOLAR_VOLUME_OF_IDEAL_GAS__273_15_K__100_KPA = 22.71095464e-3
```

Definition at line 594 of file [pycodata.py](#).

**15.2.2.199 MOLAR\_VOLUME\_OF\_IDEAL\_GAS\_\_273\_15\_K\_\_101\_325\_KPA**

```
float pycodata.MOLAR_VOLUME_OF_IDEAL_GAS__273_15_K__101_325_KPA = 22.41396954e-3
```

Definition at line 597 of file [pycodata.py](#).

**15.2.2.200 MOLAR\_VOLUME\_OF\_SILICON**

```
float pycodata.MOLAR_VOLUME_OF_SILICON = 1.205883199e-5
```

Definition at line 600 of file [pycodata.py](#).

**15.2.2.201 MOLYBDENUM\_X\_UNIT**

```
float pycodata.MOLYBDENUM_X_UNIT = 1.00209952e-13
```

Definition at line 603 of file [pycodata.py](#).

**15.2.2.202 MUON\_COMPTON\_WAVELENGTH**

```
float pycodata.MUON_COMPTON_WAVELENGTH = 1.173444110e-14
```

Definition at line 606 of file [pycodata.py](#).

**15.2.2.203 MUON\_ELECTRON\_MASS\_RATIO**

```
float pycodata.MUON_ELECTRON_MASS_RATIO = 206.7682830e0
```

Definition at line 609 of file [pycodata.py](#).

**15.2.2.204 MUON\_G\_FACTOR**

```
float pycodata.MUON_G_FACTOR = -2.0023318418e0
```

Definition at line 612 of file [pycodata.py](#).

**15.2.2.205 MUON\_MAG\_\_MOM**

```
float pycodata.MUON_MAG__MOM = -4.49044830e-26
```

Definition at line 615 of file [pycodata.py](#).

**15.2.2.206 MUON\_MAG\_\_MOM\_\_ANOMALY**

```
float pycodata.MUON_MAG__MOM__ANOMALY = 1.16592089e-3
```

Definition at line 618 of file [pycodata.py](#).

**15.2.2.207 MUON\_MAG\_\_MOM\_\_TO\_BOHR\_MAGNETON\_RATIO**

```
float pycodata.MUON_MAG__MOM__TO_BOHR_MAGNETON_RATIO = -4.84197047e-3
```

Definition at line 621 of file [pycodata.py](#).

**15.2.2.208 MUON\_MAG\_\_MOM\_\_TO\_NUCLEAR\_MAGNETON\_RATIO**

```
float pycodata.MUON_MAG__MOM__TO_NUCLEAR_MAGNETON_RATIO = -8.89059703e0
```

Definition at line 624 of file [pycodata.py](#).

**15.2.2.209 MUON\_MASS**

```
float pycodata.MUON_MASS = 1.883531627e-28
```

Definition at line 627 of file [pycodata.py](#).

**15.2.2.210 MUON\_MASS\_ENERGY\_EQUIVALENT**

```
float pycodata.MUON_MASS_ENERGY_EQUIVALENT = 1.692833804e-11
```

Definition at line 630 of file [pycodata.py](#).

**15.2.2.211 MUON\_MASS\_ENERGY\_EQUIVALENT\_IN\_MEV**

```
float pycodata.MUON_MASS_ENERGY_EQUIVALENT_IN_MEV = 105.6583755e0
```

Definition at line 633 of file [pycodata.py](#).

**15.2.2.212 MUON\_MASS\_IN\_U**

```
float pycodata.MUON_MASS_IN_U = 0.1134289259e0
```

Definition at line 636 of file [pycodata.py](#).

**15.2.2.213 MUON\_MOLAR\_MASS**

```
float pycodata.MUON_MOLAR_MASS = 1.134289259e-4
```

Definition at line 639 of file [pycodata.py](#).

**15.2.2.214 MUON\_NEUTRON\_MASS\_RATIO**

```
float pycodata.MUON_NEUTRON_MASS_RATIO = 0.1124545170e0
```

Definition at line 642 of file [pycodata.py](#).

**15.2.2.215 MUON\_PROTON\_MAG\_\_MOM\_\_RATIO**

```
float pycodata.MUON_PROTON_MAG__MOM__RATIO = -3.183345142e0
```

Definition at line 645 of file [pycodata.py](#).

**15.2.2.216 MUON\_PROTON\_MASS\_RATIO**

```
float pycodata.MUON_PROTON_MASS_RATIO = 0.1126095264e0
```

Definition at line 648 of file [pycodata.py](#).

**15.2.2.217 MUON\_TAU\_MASS\_RATIO**

```
float pycodata.MUON_TAU_MASS_RATIO = 5.94635e-2
```

Definition at line 651 of file [pycodata.py](#).

**15.2.2.218 NATURAL\_UNIT\_OF\_ACTION**

```
float pycodata.NATURAL_UNIT_OF_ACTION = 1.054571817e-34
```

Definition at line 654 of file [pycodata.py](#).

**15.2.2.219 NATURAL\_UNIT\_OF\_ACTION\_IN\_EV\_S**

```
float pycodata.NATURAL_UNIT_OF_ACTION_IN_EV_S = 6.582119569e-16
```

Definition at line 657 of file [pycodata.py](#).

**15.2.2.220 NATURAL\_UNIT\_OF\_ENERGY**

```
float pycodata.NATURAL_UNIT_OF_ENERGY = 8.1871057769e-14
```

Definition at line 660 of file [pycodata.py](#).

**15.2.2.221 NATURAL\_UNIT\_OF\_ENERGY\_IN\_MEV**

```
float pycodata.NATURAL_UNIT_OF_ENERGY_IN_MEV = 0.51099895000e0
```

Definition at line 663 of file [pycodata.py](#).

**15.2.2.222 NATURAL\_UNIT\_OF\_LENGTH**

```
float pycodata.NATURAL_UNIT_OF_LENGTH = 3.8615926796e-13
```

Definition at line 666 of file [pycodata.py](#).

**15.2.2.223 NATURAL\_UNIT\_OF\_MASS**

```
float pycodata.NATURAL_UNIT_OF_MASS = 9.1093837015e-31
```

Definition at line 669 of file [pycodata.py](#).

**15.2.2.224 NATURAL\_UNIT\_OF\_MOMENTUM**

```
float pycodata.NATURAL_UNIT_OF_MOMENTUM = 2.73092453075e-22
```

Definition at line 672 of file [pycodata.py](#).

**15.2.2.225 NATURAL\_UNIT\_OF\_MOMENTUM\_IN\_MEV\_C**

```
float pycodata.NATURAL_UNIT_OF_MOMENTUM_IN_MEV_C = 0.51099895000e0
```

Definition at line 675 of file [pycodata.py](#).

**15.2.2.226 NATURAL\_UNIT\_OF\_TIME**

```
float pycodata.NATURAL_UNIT_OF_TIME = 1.28808866819e-21
```

Definition at line 678 of file [pycodata.py](#).

**15.2.2.227 NATURAL\_UNIT\_OF\_VELOCITY**

```
float pycodata.NATURAL_UNIT_OF_VELOCITY = 299792458.0e0
```

Definition at line 681 of file [pycodata.py](#).

**15.2.2.228 NEUTRON\_COMPTON\_WAVELENGTH**

```
float pycodata.NEUTRON_COMPTON_WAVELENGTH = 1.31959090581e-15
```

Definition at line 684 of file [pycodata.py](#).

**15.2.2.229 NEUTRON\_ELECTRON\_MAG\_\_MOM\_\_RATIO**

```
float pycodata.NEUTRON_ELECTRON_MAG__MOM__RATIO = 1.04066882e-3
```

Definition at line 687 of file [pycodata.py](#).

**15.2.2.230 NEUTRON\_ELECTRON\_MASS\_RATIO**

```
float pycodata.NEUTRON_ELECTRON_MASS_RATIO = 1838.68366173e0
```

Definition at line 690 of file [pycodata.py](#).



**15.2.2.231 NEUTRON\_G\_FACTOR**

```
float pycodata.NEUTRON_G_FACTOR = -3.82608545e0
```

Definition at line 693 of file [pycodata.py](#).

**15.2.2.232 NEUTRON\_GYROMAG\_RATIO**

```
float pycodata.NEUTRON_GYROMAG_RATIO = 1.83247171e8
```

Definition at line 696 of file [pycodata.py](#).

**15.2.2.233 NEUTRON\_GYROMAG\_RATIO\_IN\_MHZ\_T**

```
float pycodata.NEUTRON_GYROMAG_RATIO_IN_MHZ_T = 29.1646931e0
```

Definition at line 699 of file [pycodata.py](#).

**15.2.2.234 NEUTRON\_MAG\_MOM**

```
float pycodata.NEUTRON_MAG_MOM = -9.6623651e-27
```

Definition at line 702 of file [pycodata.py](#).

**15.2.2.235 NEUTRON\_MAG\_MOM\_TO\_BOHR\_MAGNETON\_RATIO**

```
float pycodata.NEUTRON_MAG_MOM_TO_BOHR_MAGNETON_RATIO = -1.04187563e-3
```

Definition at line 705 of file [pycodata.py](#).

**15.2.2.236 NEUTRON\_MAG\_MOM\_TO\_NUCLEAR\_MAGNETON\_RATIO**

```
float pycodata.NEUTRON_MAG_MOM_TO_NUCLEAR_MAGNETON_RATIO = -1.91304273e0
```

Definition at line 708 of file [pycodata.py](#).

**15.2.2.237 NEUTRON\_MASS**

```
float pycodata.NEUTRON_MASS = 1.67492749804e-27
```

Definition at line 711 of file [pycodata.py](#).

**15.2.2.238 NEUTRON\_MASS\_ENERGY\_EQUIVALENT**

```
float pycodata.NEUTRON_MASS_ENERGY_EQUIVALENT = 1.50534976287e-10
```

Definition at line 714 of file [pycodata.py](#).

**15.2.2.239 NEUTRON\_MASS\_ENERGY\_EQUIVALENT\_IN\_MEV**

```
float pycodata.NEUTRON_MASS_ENERGY_EQUIVALENT_IN_MEV = 939.56542052e0
```

Definition at line 717 of file [pycodata.py](#).

**15.2.2.240 NEUTRON\_MASS\_IN\_U**

```
float pycodata.NEUTRON_MASS_IN_U = 1.00866491595e0
```

Definition at line 720 of file [pycodata.py](#).

**15.2.2.241 NEUTRON\_MOLAR\_MASS**

```
float pycodata.NEUTRON_MOLAR_MASS = 1.00866491560e-3
```

Definition at line 723 of file [pycodata.py](#).

**15.2.2.242 NEUTRON\_MUON\_MASS\_RATIO**

```
float pycodata.NEUTRON_MUON_MASS_RATIO = 8.89248406e0
```

Definition at line 726 of file [pycodata.py](#).

**15.2.2.243 NEUTRON\_PROTON\_MAG\_\_MOM\_\_RATIO**

```
float pycodata.NEUTRON_PROTON_MAG__MOM__RATIO = -0.68497934e0
```

Definition at line 729 of file [pycodata.py](#).

**15.2.2.244 NEUTRON\_PROTON\_MASS\_DIFFERENCE**

```
float pycodata.NEUTRON_PROTON_MASS_DIFFERENCE = 2.30557435e-30
```

Definition at line 732 of file [pycodata.py](#).

**15.2.2.245 NEUTRON\_PROTON\_MASS\_DIFFERENCE\_ENERGY\_EQUIVALENT**

```
float pycodata.NEUTRON_PROTON_MASS_DIFFERENCE_ENERGY_EQUIVALENT = 2.07214689e-13
```

Definition at line 735 of file [pycodata.py](#).

**15.2.2.246 NEUTRON\_PROTON\_MASS\_DIFFERENCE\_ENERGY\_EQUIVALENT\_IN\_MEV**

```
float pycodata.NEUTRON_PROTON_MASS_DIFFERENCE_ENERGY_EQUIVALENT_IN_MEV = 1.29333236e0
```

Definition at line 738 of file [pycodata.py](#).

**15.2.2.247 NEUTRON\_PROTON\_MASS\_DIFFERENCE\_IN\_U**

```
float pycodata.NEUTRON_PROTON_MASS_DIFFERENCE_IN_U = 1.38844933e-3
```

Definition at line 741 of file [pycodata.py](#).

**15.2.2.248 NEUTRON\_PROTON\_MASS\_RATIO**

```
float pycodata.NEUTRON_PROTON_MASS_RATIO = 1.00137841931e0
```

Definition at line 744 of file [pycodata.py](#).

**15.2.2.249 NEUTRON\_RELATIVE\_ATOMIC\_MASS**

```
float pycodata.NEUTRON_RELATIVE_ATOMIC_MASS = 1.00866491595e0
```

Definition at line 747 of file [pycodata.py](#).

**15.2.2.250 NEUTRON\_TAU\_MASS\_RATIO**

```
float pycodata.NEUTRON_TAU_MASS_RATIO = 0.528779e0
```

Definition at line 750 of file [pycodata.py](#).

**15.2.2.251 NEUTRON\_TO\_SHIELDED\_PROTON\_MAG\_\_MOM\_\_RATIO**

```
float pycodata.NEUTRON_TO_SHIELDED_PROTON_MAG__MOM__RATIO = -0.68499694e0
```

Definition at line 753 of file [pycodata.py](#).

**15.2.2.252 NEWTONIAN\_CONSTANT\_OF\_GRAVITATION**

```
float pycodata.NEWTONIAN_CONSTANT_OF_GRAVITATION = 6.67430e-11
```

Definition at line 756 of file [pycodata.py](#).

**15.2.2.253 NEWTONIAN\_CONSTANT\_OF\_GRAVITATION\_OVER\_H\_BAR\_C**

```
float pycodata.NEWTONIAN_CONSTANT_OF_GRAVITATION_OVER_H_BAR_C = 6.70883e-39
```

Definition at line 759 of file [pycodata.py](#).

**15.2.2.254 NUCLEAR\_MAGNETON**

```
float pycodata.NUCLEAR_MAGNETON = 5.0507837461e-27
```

Definition at line 762 of file [pycodata.py](#).

**15.2.2.255 NUCLEAR\_MAGNETON\_IN\_EV\_T**

```
float pycodata.NUCLEAR_MAGNETON_IN_EV_T = 3.15245125844e-8
```

Definition at line 765 of file [pycodata.py](#).

**15.2.2.256 NUCLEAR\_MAGNETON\_IN\_INVERSE\_METER\_PER\_TESLA**

```
float pycodata.NUCLEAR_MAGNETON_IN_INVERSE_METER_PER_TESLA = 2.54262341353e-2
```

Definition at line 768 of file [pycodata.py](#).

**15.2.2.257 NUCLEAR\_MAGNETON\_IN\_K\_T**

```
float pycodata.NUCLEAR_MAGNETON_IN_K_T = 3.6582677756e-4
```

Definition at line 771 of file [pycodata.py](#).

**15.2.2.258 NUCLEAR\_MAGNETON\_IN\_MHZ\_T**

```
float pycodata.NUCLEAR_MAGNETON_IN_MHZ_T = 7.6225932291e0
```

Definition at line 774 of file [pycodata.py](#).

**15.2.2.259 PLANCK\_CONSTANT**

```
float pycodata.PLANCK_CONSTANT = 6.62607015e-34
```

Definition at line 777 of file [pycodata.py](#).

**15.2.2.260 PLANCK\_CONSTANT\_IN\_EV\_HZ**

```
float pycodata.PLANCK_CONSTANT_IN_EV_HZ = 4.135667696e-15
```

Definition at line 780 of file [pycodata.py](#).

**15.2.2.261 PLANCK\_LENGTH**

```
float pycodata.PLANCK_LENGTH = 1.616255e-35
```

Definition at line [783](#) of file [pycodata.py](#).

**15.2.2.262 PLANCK\_MASS**

```
float pycodata.PLANCK_MASS = 2.176434e-8
```

Definition at line [786](#) of file [pycodata.py](#).

**15.2.2.263 PLANCK\_MASS\_ENERGY\_EQUIVALENT\_IN\_GEV**

```
float pycodata.PLANCK_MASS_ENERGY_EQUIVALENT_IN_GEV = 1.220890e19
```

Definition at line [789](#) of file [pycodata.py](#).

**15.2.2.264 PLANCK\_TEMPERATURE**

```
float pycodata.PLANCK_TEMPERATURE = 1.416784e32
```

Definition at line [792](#) of file [pycodata.py](#).

**15.2.2.265 PLANCK\_TIME**

```
float pycodata.PLANCK_TIME = 5.391247e-44
```

Definition at line [795](#) of file [pycodata.py](#).

**15.2.2.266 PROTON\_CHARGE\_TO\_MASS\_QUOTIENT**

```
float pycodata.PROTON_CHARGE_TO_MASS_QUOTIENT = 9.5788331560e7
```

Definition at line [798](#) of file [pycodata.py](#).

**15.2.2.267 PROTON\_COMPTON\_WAVELENGTH**

```
float pycodata.PROTON_COMPTON_WAVELENGTH = 1.32140985539e-15
```

Definition at line 801 of file [pycodata.py](#).

**15.2.2.268 PROTON\_ELECTRON\_MASS\_RATIO**

```
float pycodata.PROTON_ELECTRON_MASS_RATIO = 1836.15267343e0
```

Definition at line 804 of file [pycodata.py](#).

**15.2.2.269 PROTON\_G\_FACTOR**

```
float pycodata.PROTON_G_FACTOR = 5.5856946893e0
```

Definition at line 807 of file [pycodata.py](#).

**15.2.2.270 PROTON\_GYROMAG\_\_RATIO**

```
float pycodata.PROTON_GYROMAG__RATIO = 2.6752218744e8
```

Definition at line 810 of file [pycodata.py](#).

**15.2.2.271 PROTON\_GYROMAG\_\_RATIO\_IN\_MHZ\_T**

```
float pycodata.PROTON_GYROMAG__RATIO_IN_MHZ_T = 42.577478518e0
```

Definition at line 813 of file [pycodata.py](#).

**15.2.2.272 PROTON\_MAG\_\_MOM**

```
float pycodata.PROTON_MAG__MOM = 1.41060679736e-26
```

Definition at line 816 of file [pycodata.py](#).

**15.2.2.273 PROTON\_MAG\_\_MOM\_\_TO\_BOHR\_MAGNETON\_RATIO**

```
float pycodata.PROTON_MAG__MOM__TO_BOHR_MAGNETON_RATIO = 1.52103220230e-3
```

Definition at line 819 of file [pycodata.py](#).

**15.2.2.274 PROTON\_MAG\_\_MOM\_\_TO\_NUCLEAR\_MAGNETON\_RATIO**

```
float pycodata.PROTON_MAG__MOM__TO_NUCLEAR_MAGNETON_RATIO = 2.79284734463e0
```

Definition at line 822 of file [pycodata.py](#).

**15.2.2.275 PROTON\_MAG\_\_SHIELDING\_CORRECTION**

```
float pycodata.PROTON_MAG__SHIELDING_CORRECTION = 2.5689e-5
```

Definition at line 825 of file [pycodata.py](#).

**15.2.2.276 PROTON\_MASS**

```
float pycodata.PROTON_MASS = 1.67262192369e-27
```

Definition at line 828 of file [pycodata.py](#).

**15.2.2.277 PROTON\_MASS\_ENERGY\_EQUIVALENT**

```
float pycodata.PROTON_MASS_ENERGY_EQUIVALENT = 1.50327761598e-10
```

Definition at line 831 of file [pycodata.py](#).

**15.2.2.278 PROTON\_MASS\_ENERGY\_EQUIVALENT\_IN\_MEV**

```
float pycodata.PROTON_MASS_ENERGY_EQUIVALENT_IN_MEV = 938.27208816e0
```

Definition at line 834 of file [pycodata.py](#).



**15.2.2.279 PROTON\_MASS\_IN\_U**

```
float pycodata.PROTON_MASS_IN_U = 1.00727646621e0
```

Definition at line 837 of file [pycodata.py](#).

**15.2.2.280 PROTON\_MOLAR\_MASS**

```
float pycodata.PROTON_MOLAR_MASS = 1.00727646627e-3
```

Definition at line 840 of file [pycodata.py](#).

**15.2.2.281 PROTON\_MUON\_MASS\_RATIO**

```
float pycodata.PROTON_MUON_MASS_RATIO = 8.88024337e0
```

Definition at line 843 of file [pycodata.py](#).

**15.2.2.282 PROTON\_NEUTRON\_MAG\_\_MOM\_\_RATIO**

```
float pycodata.PROTON_NEUTRON_MAG__MOM__RATIO = -1.45989805e0
```

Definition at line 846 of file [pycodata.py](#).

**15.2.2.283 PROTON\_NEUTRON\_MASS\_RATIO**

```
float pycodata.PROTON_NEUTRON_MASS_RATIO = 0.99862347812e0
```

Definition at line 849 of file [pycodata.py](#).

**15.2.2.284 PROTON\_RELATIVE\_ATOMIC\_MASS**

```
float pycodata.PROTON_RELATIVE_ATOMIC_MASS = 1.00727646621e0
```

Definition at line 852 of file [pycodata.py](#).

**15.2.2.285 PROTON\_RMS\_CHARGE\_RADIUS**

```
float pycodata.PROTON_RMS_CHARGE_RADIUS = 8.414e-16
```

Definition at line 855 of file [pycodata.py](#).

**15.2.2.286 PROTON\_TAU\_MASS\_RATIO**

```
float pycodata.PROTON_TAU_MASS_RATIO = 0.528051e0
```

Definition at line 858 of file [pycodata.py](#).

**15.2.2.287 QUANTUM\_OF\_CIRCULATION**

```
float pycodata.QUANTUM_OF_CIRCULATION = 3.6369475516e-4
```

Definition at line 861 of file [pycodata.py](#).

**15.2.2.288 QUANTUM\_OF\_CIRCULATION\_TIMES\_2**

```
float pycodata.QUANTUM_OF_CIRCULATION_TIMES_2 = 7.2738951032e-4
```

Definition at line 864 of file [pycodata.py](#).

**15.2.2.289 REDUCED\_COMPTON\_WAVELENGTH**

```
float pycodata.REDUCED_COMPTON_WAVELENGTH = 3.8615926796e-13
```

Definition at line 867 of file [pycodata.py](#).

**15.2.2.290 REDUCED\_MUON\_COMPTON\_WAVELENGTH**

```
float pycodata.REDUCED_MUON_COMPTON_WAVELENGTH = 1.867594306e-15
```

Definition at line 870 of file [pycodata.py](#).

**15.2.2.291 REDUCED\_NEUTRON\_COMPTON\_WAVELENGTH**

```
float pycodata.REDUCED_NEUTRON_COMPTON_WAVELENGTH = 2.1001941552e-16
```

Definition at line 873 of file [pycodata.py](#).

**15.2.2.292 REDUCED\_PLANCK\_CONSTANT**

```
float pycodata.REDUCED_PLANCK_CONSTANT = 1.054571817e-34
```

Definition at line 876 of file [pycodata.py](#).

**15.2.2.293 REDUCED\_PLANCK\_CONSTANT\_IN\_EV\_S**

```
float pycodata.REDUCED_PLANCK_CONSTANT_IN_EV_S = 6.582119569e-16
```

Definition at line 879 of file [pycodata.py](#).

**15.2.2.294 REDUCED\_PLANCK\_CONSTANT\_TIMES\_C\_IN\_MEV\_FM**

```
float pycodata.REDUCED_PLANCK_CONSTANT_TIMES_C_IN_MEV_FM = 197.3269804e0
```

Definition at line 882 of file [pycodata.py](#).

**15.2.2.295 REDUCED\_PROTON\_COMPTON\_WAVELENGTH**

```
float pycodata.REDUCED_PROTON_COMPTON_WAVELENGTH = 2.10308910336e-16
```

Definition at line 885 of file [pycodata.py](#).

**15.2.2.296 REDUCED\_TAU\_COMPTON\_WAVELENGTH**

```
float pycodata.REDUCED_TAU_COMPTON_WAVELENGTH = 1.110538e-16
```

Definition at line 888 of file [pycodata.py](#).

**15.2.2.297 RYDBERG\_CONSTANT**

```
float pycodata.RYDBERG_CONSTANT = 10973731.568160e0
```

Definition at line [891](#) of file [pycodata.py](#).

**15.2.2.298 RYDBERG\_CONSTANT\_TIMES\_C\_IN\_HZ**

```
float pycodata.RYDBERG_CONSTANT_TIMES_C_IN_HZ = 3.2898419602508e15
```

Definition at line [894](#) of file [pycodata.py](#).

**15.2.2.299 RYDBERG\_CONSTANT\_TIMES\_HC\_IN\_EV**

```
float pycodata.RYDBERG_CONSTANT_TIMES_HC_IN_EV = 13.605693122994e0
```

Definition at line [897](#) of file [pycodata.py](#).

**15.2.2.300 RYDBERG\_CONSTANT\_TIMES\_HC\_IN\_J**

```
float pycodata.RYDBERG_CONSTANT_TIMES_HC_IN_J = 2.1798723611035e-18
```

Definition at line [900](#) of file [pycodata.py](#).

**15.2.2.301 SACKUR\_TETRODE\_CONSTANT\_\_1\_K\_\_100\_KPA**

```
float pycodata.SACKUR_TETRODE_CONSTANT__1_K__100_KPA = -1.15170753706e0
```

Definition at line [903](#) of file [pycodata.py](#).

**15.2.2.302 SACKUR\_TETRODE\_CONSTANT\_\_1\_K\_\_101\_325\_KPA**

```
float pycodata.SACKUR_TETRODE_CONSTANT__1_K__101_325_KPA = -1.16487052358e0
```

Definition at line [906](#) of file [pycodata.py](#).

**15.2.2.303 SECOND\_RADIATION\_CONSTANT**

```
float pycodata.SECOND_RADIATION_CONSTANT = 1.438776877e-2
```

Definition at line 909 of file [pycodata.py](#).

**15.2.2.304 SHIELDED\_HELION\_GYROMAG\_RATIO**

```
float pycodata.SHIELDED_HELION_GYROMAG_RATIO = 2.037894569e8
```

Definition at line 912 of file [pycodata.py](#).

**15.2.2.305 SHIELDED\_HELION\_GYROMAG\_RATIO\_IN\_MHZ\_T**

```
float pycodata.SHIELDED_HELION_GYROMAG_RATIO_IN_MHZ_T = 32.43409942e0
```

Definition at line 915 of file [pycodata.py](#).

**15.2.2.306 SHIELDED\_HELION\_MAG\_MOM**

```
float pycodata.SHIELDED_HELION_MAG_MOM = -1.074553090e-26
```

Definition at line 918 of file [pycodata.py](#).

**15.2.2.307 SHIELDED\_HELION\_MAG\_MOM\_TO\_BOHR\_MAGNETON\_RATIO**

```
float pycodata.SHIELDED_HELION_MAG_MOM_TO_BOHR_MAGNETON_RATIO = -1.158671471e-3
```

Definition at line 921 of file [pycodata.py](#).

**15.2.2.308 SHIELDED\_HELION\_MAG\_MOM\_TO\_NUCLEAR\_MAGNETON\_RATIO**

```
float pycodata.SHIELDED_HELION_MAG_MOM_TO_NUCLEAR_MAGNETON_RATIO = -2.127497719e0
```

Definition at line 924 of file [pycodata.py](#).

**15.2.2.309 SHIELDED\_HELION\_TO\_PROTON\_MAG\_\_MOM\_\_RATIO**

```
float pycodata.SHIELDED_HELION_TO_PROTON_MAG__MOM__RATIO = -0.7617665618e0
```

Definition at line 927 of file [pycodata.py](#).

**15.2.2.310 SHIELDED\_HELION\_TO\_SHIELDED\_PROTON\_MAG\_\_MOM\_\_RATIO**

```
float pycodata.SHIELDED_HELION_TO_SHIELDED_PROTON_MAG__MOM__RATIO = -0.7617861313e0
```

Definition at line 930 of file [pycodata.py](#).

**15.2.2.311 SHIELDED\_PROTON\_GYROMAG\_\_RATIO**

```
float pycodata.SHIELDED_PROTON_GYROMAG__RATIO = 2.675153151e8
```

Definition at line 933 of file [pycodata.py](#).

**15.2.2.312 SHIELDED\_PROTON\_GYROMAG\_\_RATIO\_IN\_MHZ\_T**

```
float pycodata.SHIELDED_PROTON_GYROMAG__RATIO_IN_MHZ_T = 42.57638474e0
```

Definition at line 936 of file [pycodata.py](#).

**15.2.2.313 SHIELDED\_PROTON\_MAG\_\_MOM**

```
float pycodata.SHIELDED_PROTON_MAG__MOM = 1.410570560e-26
```

Definition at line 939 of file [pycodata.py](#).

**15.2.2.314 SHIELDED\_PROTON\_MAG\_\_MOM\_\_TO\_BOHR\_MAGNETON\_RATIO**

```
float pycodata.SHIELDED_PROTON_MAG__MOM__TO_BOHR_MAGNETON_RATIO = 1.520993128e-3
```

Definition at line 942 of file [pycodata.py](#).

**15.2.2.315 SHIELDED\_PROTON\_MAG\_\_MOM\_\_TO\_NUCLEAR\_MAGNETON\_RATIO**

```
float pycodata.SHIELDED_PROTON_MAG__MOM__TO_NUCLEAR_MAGNETON_RATIO = 2.792775599e0
```

Definition at line 945 of file [pycodata.py](#).

**15.2.2.316 SHIELDING\_DIFFERENCE\_OF\_D\_AND\_P\_IN\_HD**

```
float pycodata.SHIELDING_DIFFERENCE_OF_D_AND_P_IN_HD = 2.0200e-8
```

Definition at line 948 of file [pycodata.py](#).

**15.2.2.317 SHIELDING\_DIFFERENCE\_OF\_T\_AND\_P\_IN\_HT**

```
float pycodata.SHIELDING_DIFFERENCE_OF_T_AND_P_IN_HT = 2.4140e-8
```

Definition at line 951 of file [pycodata.py](#).

**15.2.2.318 SPEED\_OF\_LIGHT\_IN\_VACUUM**

```
float pycodata.SPEED_OF_LIGHT_IN_VACUUM = 299792458.0e0
```

Definition at line 954 of file [pycodata.py](#).

**15.2.2.319 STANDARD\_ACCELERATION\_OF\_GRAVITY**

```
float pycodata.STANDARD_ACCELERATION_OF_GRAVITY = 9.80665e0
```

Definition at line 957 of file [pycodata.py](#).

**15.2.2.320 STANDARD\_ATMOSPHERE**

```
float pycodata.STANDARD_ATMOSPHERE = 101325.0e0
```

Definition at line 960 of file [pycodata.py](#).

#### 15.2.2.321 STANDARD\_STATE\_PRESSURE

```
float pycodata.STANDARD_STATE_PRESSURE = 100000.0e0
```

Definition at line 963 of file [pycodata.py](#).

#### 15.2.2.322 STEFAN\_BOLTZMANN\_CONSTANT

```
float pycodata.STEFAN_BOLTZMANN_CONSTANT = 5.670374419e-8
```

Definition at line 966 of file [pycodata.py](#).

#### 15.2.2.323 TAU\_COMPTON\_WAVELENGTH

```
float pycodata.TAU_COMPTON_WAVELENGTH = 6.97771e-16
```

Definition at line 969 of file [pycodata.py](#).

#### 15.2.2.324 TAU\_ELECTRON\_MASS\_RATIO

```
float pycodata.TAU_ELECTRON_MASS_RATIO = 3477.23e0
```

Definition at line 972 of file [pycodata.py](#).

#### 15.2.2.325 TAU\_ENERGY\_EQUIVALENT

```
float pycodata.TAU_ENERGY_EQUIVALENT = 1776.86e0
```

Definition at line 975 of file [pycodata.py](#).

#### 15.2.2.326 TAU\_MASS

```
float pycodata.TAU_MASS = 3.16754e-27
```

Definition at line 978 of file [pycodata.py](#).



**15.2.2.327 TAU\_MASS\_ENERGY\_EQUIVALENT**

```
float pycodata.TAU_MASS_ENERGY_EQUIVALENT = 2.84684e-10
```

Definition at line 981 of file [pycodata.py](#).

**15.2.2.328 TAU\_MASS\_IN\_U**

```
float pycodata.TAU_MASS_IN_U = 1.90754e0
```

Definition at line 984 of file [pycodata.py](#).

**15.2.2.329 TAU\_MOLAR\_MASS**

```
float pycodata.TAU_MOLAR_MASS = 1.90754e-3
```

Definition at line 987 of file [pycodata.py](#).

**15.2.2.330 TAU\_MUON\_MASS\_RATIO**

```
float pycodata.TAU_MUON_MASS_RATIO = 16.8170e0
```

Definition at line 990 of file [pycodata.py](#).

**15.2.2.331 TAU\_NEUTRON\_MASS\_RATIO**

```
float pycodata.TAU_NEUTRON_MASS_RATIO = 1.89115e0
```

Definition at line 993 of file [pycodata.py](#).

**15.2.2.332 TAU\_PROTON\_MASS\_RATIO**

```
float pycodata.TAU_PROTON_MASS_RATIO = 1.89376e0
```

Definition at line 996 of file [pycodata.py](#).

#### 15.2.2.333 THOMSON\_CROSS\_SECTION

```
float pycodata.THOMSON_CROSS_SECTION = 6.6524587321e-29
```

Definition at line 999 of file [pycodata.py](#).

#### 15.2.2.334 TRITON\_ELECTRON\_MASS\_RATIO

```
float pycodata.TRITON_ELECTRON_MASS_RATIO = 5496.92153573e0
```

Definition at line 1002 of file [pycodata.py](#).

#### 15.2.2.335 TRITON\_G\_FACTOR

```
float pycodata.TRITON_G_FACTOR = 5.957924931e0
```

Definition at line 1005 of file [pycodata.py](#).

#### 15.2.2.336 TRITON\_MAG\_\_MOM

```
float pycodata.TRITON_MAG__MOM = 1.5046095202e-26
```

Definition at line 1008 of file [pycodata.py](#).

#### 15.2.2.337 TRITON\_MAG\_\_MOM\_\_TO\_BOHR\_MAGNETON\_RATIO

```
float pycodata.TRITON_MAG__MOM__TO_BOHR_MAGNETON_RATIO = 1.6223936651e-3
```

Definition at line 1011 of file [pycodata.py](#).

#### 15.2.2.338 TRITON\_MAG\_\_MOM\_\_TO\_NUCLEAR\_MAGNETON\_RATIO

```
float pycodata.TRITON_MAG__MOM__TO_NUCLEAR_MAGNETON_RATIO = 2.9789624656e0
```

Definition at line 1014 of file [pycodata.py](#).

**15.2.2.339 TRITON\_MASS**

```
float pycodata.TRITON_MASS = 5.0073567446e-27
```

Definition at line 1017 of file [pycodata.py](#).

**15.2.2.340 TRITON\_MASS\_ENERGY\_EQUIVALENT**

```
float pycodata.TRITON_MASS_ENERGY_EQUIVALENT = 4.5003878060e-10
```

Definition at line 1020 of file [pycodata.py](#).

**15.2.2.341 TRITON\_MASS\_ENERGY\_EQUIVALENT\_IN\_MEV**

```
float pycodata.TRITON_MASS_ENERGY_EQUIVALENT_IN_MEV = 2808.92113298e0
```

Definition at line 1023 of file [pycodata.py](#).

**15.2.2.342 TRITON\_MASS\_IN\_U**

```
float pycodata.TRITON_MASS_IN_U = 3.01550071621e0
```

Definition at line 1026 of file [pycodata.py](#).

**15.2.2.343 TRITON\_MOLAR\_MASS**

```
float pycodata.TRITON_MOLAR_MASS = 3.01550071517e-3
```

Definition at line 1029 of file [pycodata.py](#).

**15.2.2.344 TRITON\_PROTON\_MASS\_RATIO**

```
float pycodata.TRITON_PROTON_MASS_RATIO = 2.99371703414e0
```

Definition at line 1032 of file [pycodata.py](#).

**15.2.2.345 TRITON\_RELATIVE\_ATOMIC\_MASS**

```
float pycodata.TRITON_RELATIVE_ATOMIC_MASS = 3.01550071621e0
```

Definition at line 1035 of file [pycodata.py](#).

**15.2.2.346 TRITON\_TO\_PROTON\_MAG\_\_MOM\_\_RATIO**

```
float pycodata.TRITON_TO_PROTON_MAG__MOM__RATIO = 1.0666399191e0
```

Definition at line 1038 of file [pycodata.py](#).

**15.2.2.347 U\_ALPHA\_PARTICLE\_ELECTRON\_MASS\_RATIO**

```
float pycodata.U_ALPHA_PARTICLE_ELECTRON_MASS_RATIO = 0.00000024e0
```

Definition at line 4 of file [pycodata.py](#).

**15.2.2.348 U\_ALPHA\_PARTICLE\_MASS**

```
float pycodata.U_ALPHA_PARTICLE_MASS = 0.0000000020e-27
```

Definition at line 7 of file [pycodata.py](#).

**15.2.2.349 U\_ALPHA\_PARTICLE\_MASS\_ENERGY\_EQUIVALENT**

```
float pycodata.U_ALPHA_PARTICLE_MASS_ENERGY_EQUIVALENT = 0.0000000018e-10
```

Definition at line 10 of file [pycodata.py](#).

**15.2.2.350 U\_ALPHA\_PARTICLE\_MASS\_ENERGY\_EQUIVALENT\_IN\_MEV**

```
float pycodata.U_ALPHA_PARTICLE_MASS_ENERGY_EQUIVALENT_IN_MEV = 0.0000011e0
```

Definition at line 13 of file [pycodata.py](#).

**15.2.2.351 U\_ALPHA\_PARTICLE\_MASS\_IN\_U**

```
float pycodata.U_ALPHA_PARTICLE_MASS_IN_U = 0.000000000063e0
```

Definition at line 16 of file [pycodata.py](#).

**15.2.2.352 U\_ALPHA\_PARTICLE\_MOLAR\_MASS**

```
float pycodata.U_ALPHA_PARTICLE_MOLAR_MASS = 0.0000000012e-3
```

Definition at line 19 of file [pycodata.py](#).

**15.2.2.353 U\_ALPHA\_PARTICLE\_PROTON\_MASS\_RATIO**

```
float pycodata.U_ALPHA_PARTICLE_PROTON_MASS_RATIO = 0.00000000022e0
```

Definition at line 22 of file [pycodata.py](#).

**15.2.2.354 U\_ALPHA\_PARTICLE\_RELATIVE\_ATOMIC\_MASS**

```
float pycodata.U_ALPHA_PARTICLE_RELATIVE_ATOMIC_MASS = 0.00000000063e0
```

Definition at line 25 of file [pycodata.py](#).

**15.2.2.355 U\_ANGSTROM\_STAR**

```
float pycodata.U_ANGSTROM_STAR = 0.00000090e-10
```

Definition at line 28 of file [pycodata.py](#).

**15.2.2.356 U\_ATOMIC\_MASS\_CONSTANT**

```
float pycodata.U_ATOMIC_MASS_CONSTANT = 0.00000000050e-27
```

Definition at line 31 of file [pycodata.py](#).

**15.2.2.357 U\_ATOMIC\_MASS\_CONSTANT\_ENERGY\_EQUIVALENT**

```
float pycodata.U_ATOMIC_MASS_CONSTANT_ENERGY_EQUIVALENT = 0.00000000045e-10
```

Definition at line 34 of file [pycodata.py](#).

**15.2.2.358 U\_ATOMIC\_MASS\_CONSTANT\_ENERGY\_EQUIVALENT\_IN\_MEV**

```
float pycodata.U_ATOMIC_MASS_CONSTANT_ENERGY_EQUIVALENT_IN_MEV = 0.00000028e0
```

Definition at line 37 of file [pycodata.py](#).

**15.2.2.359 U\_ATOMIC\_MASS\_UNIT\_ELECTRON\_VOLT\_RELATIONSHIP**

```
float pycodata.U_ATOMIC_MASS_UNIT_ELECTRON_VOLT_RELATIONSHIP = 0.0000000028e8
```

Definition at line 40 of file [pycodata.py](#).

**15.2.2.360 U\_ATOMIC\_MASS\_UNIT\_HARTREE\_RELATIONSHIP**

```
float pycodata.U_ATOMIC_MASS_UNIT_HARTREE_RELATIONSHIP = 0.0000000010e7
```

Definition at line 43 of file [pycodata.py](#).

**15.2.2.361 U\_ATOMIC\_MASS\_UNIT\_HERTZ\_RELATIONSHIP**

```
float pycodata.U_ATOMIC_MASS_UNIT_HERTZ_RELATIONSHIP = 0.00000000068e23
```

Definition at line 46 of file [pycodata.py](#).

**15.2.2.362 U\_ATOMIC\_MASS\_UNIT\_INVERSE\_METER\_RELATIONSHIP**

```
float pycodata.U_ATOMIC_MASS_UNIT_INVERSE_METER_RELATIONSHIP = 0.0000000023e14
```

Definition at line 49 of file [pycodata.py](#).

**15.2.2.363 U\_ATOMIC\_MASS\_UNIT\_JOULE\_RELATIONSHIP**

```
float pycodata.U_ATOMIC_MASS_UNIT_JOULE_RELATIONSHIP = 0.00000000045e-10
```

Definition at line 52 of file [pycodata.py](#).

**15.2.2.364 U\_ATOMIC\_MASS\_UNIT\_KELVIN\_RELATIONSHIP**

```
float pycodata.U_ATOMIC_MASS_UNIT_KELVIN_RELATIONSHIP = 0.00000000033e13
```

Definition at line 55 of file [pycodata.py](#).

**15.2.2.365 U\_ATOMIC\_MASS\_UNIT\_KILOGRAM\_RELATIONSHIP**

```
float pycodata.U_ATOMIC_MASS_UNIT_KILOGRAM_RELATIONSHIP = 0.00000000050e-27
```

Definition at line 58 of file [pycodata.py](#).

**15.2.2.366 U\_ATOMIC\_UNIT\_OF\_1ST\_HYPERPOLARIZABILITY**

```
float pycodata.U_ATOMIC_UNIT_OF_1ST_HYPERPOLARIZABILITY = 0.0000000015e-53
```

Definition at line 61 of file [pycodata.py](#).

**15.2.2.367 U\_ATOMIC\_UNIT\_OF\_2ND\_HYPERPOLARIZABILITY**

```
float pycodata.U_ATOMIC_UNIT_OF_2ND_HYPERPOLARIZABILITY = 0.0000000038e-65
```

Definition at line 64 of file [pycodata.py](#).

**15.2.2.368 U\_ATOMIC\_UNIT\_OF\_ACTION**

```
float pycodata.U_ATOMIC_UNIT_OF_ACTION = 0.0e0
```

Definition at line 67 of file [pycodata.py](#).

**15.2.2.369 U\_ATOMIC\_UNIT\_OF\_CHARGE**

```
float pycodata.U_ATOMIC_UNIT_OF_CHARGE = 0.0e0
```

Definition at line 70 of file [pycodata.py](#).

**15.2.2.370 U\_ATOMIC\_UNIT\_OF\_CHARGE\_DENSITY**

```
float pycodata.U_ATOMIC_UNIT_OF_CHARGE_DENSITY = 0.00000000049e12
```

Definition at line 73 of file [pycodata.py](#).

**15.2.2.371 U\_ATOMIC\_UNIT\_OF\_CURRENT**

```
float pycodata.U_ATOMIC_UNIT_OF_CURRENT = 0.000000000013e-3
```

Definition at line 76 of file [pycodata.py](#).

**15.2.2.372 U\_ATOMIC\_UNIT\_OF\_ELECTRIC\_DIPOLE\_MOM**

```
float pycodata.U_ATOMIC_UNIT_OF_ELECTRIC_DIPOLE_MOM = 0.0000000013e-30
```

Definition at line 79 of file [pycodata.py](#).

**15.2.2.373 U\_ATOMIC\_UNIT\_OF\_ELECTRIC\_FIELD**

```
float pycodata.U_ATOMIC_UNIT_OF_ELECTRIC_FIELD = 0.00000000078e11
```

Definition at line 82 of file [pycodata.py](#).

**15.2.2.374 U\_ATOMIC\_UNIT\_OF\_ELECTRIC\_FIELD\_GRADIENT**

```
float pycodata.U_ATOMIC_UNIT_OF_ELECTRIC_FIELD_GRADIENT = 0.0000000029e21
```

Definition at line 85 of file [pycodata.py](#).



**15.2.2.375 U\_ATOMIC\_UNIT\_OF\_ELECTRIC\_POLARIZABILITY**

```
float pycodata.U_ATOMIC_UNIT_OF_ELECTRIC_POLARIZABILITY = 0.00000000050e-41
```

Definition at line 88 of file [pycodata.py](#).

**15.2.2.376 U\_ATOMIC\_UNIT\_OF\_ELECTRIC\_POTENTIAL**

```
float pycodata.U_ATOMIC_UNIT_OF_ELECTRIC_POTENTIAL = 0.000000000053e0
```

Definition at line 91 of file [pycodata.py](#).

**15.2.2.377 U\_ATOMIC\_UNIT\_OF\_ELECTRIC\_QUADRUPOLE\_MOM**

```
float pycodata.U_ATOMIC_UNIT_OF_ELECTRIC_QUADRUPOLE_MOM = 0.0000000014e-40
```

Definition at line 94 of file [pycodata.py](#).

**15.2.2.378 U\_ATOMIC\_UNIT\_OF\_ENERGY**

```
float pycodata.U_ATOMIC_UNIT_OF_ENERGY = 0.0000000000085e-18
```

Definition at line 97 of file [pycodata.py](#).

**15.2.2.379 U\_ATOMIC\_UNIT\_OF\_FORCE**

```
float pycodata.U_ATOMIC_UNIT_OF_FORCE = 0.0000000012e-8
```

Definition at line 100 of file [pycodata.py](#).

**15.2.2.380 U\_ATOMIC\_UNIT\_OF\_LENGTH**

```
float pycodata.U_ATOMIC_UNIT_OF_LENGTH = 0.00000000080e-11
```

Definition at line 103 of file [pycodata.py](#).

**15.2.2.381 U\_ATOMIC\_UNIT\_OF\_MAG\_\_DIPOLE\_MOM**

```
float pycodata.U_ATOMIC_UNIT_OF_MAG__DIPOLE_MOM = 0.00000000056e-23
```

Definition at line 106 of file [pycodata.py](#).

**15.2.2.382 U\_ATOMIC\_UNIT\_OF\_MAG\_\_FLUX\_DENSITY**

```
float pycodata.U_ATOMIC_UNIT_OF_MAG__FLUX_DENSITY = 0.00000000071e5
```

Definition at line 109 of file [pycodata.py](#).

**15.2.2.383 U\_ATOMIC\_UNIT\_OF\_MAGNETIZABILITY**

```
float pycodata.U_ATOMIC_UNIT_OF_MAGNETIZABILITY = 0.0000000048e-29
```

Definition at line 112 of file [pycodata.py](#).

**15.2.2.384 U\_ATOMIC\_UNIT\_OF\_MASS**

```
float pycodata.U_ATOMIC_UNIT_OF_MASS = 0.0000000028e-31
```

Definition at line 115 of file [pycodata.py](#).

**15.2.2.385 U\_ATOMIC\_UNIT\_OF\_MOMENTUM**

```
float pycodata.U_ATOMIC_UNIT_OF_MOMENTUM = 0.00000000030e-24
```

Definition at line 118 of file [pycodata.py](#).

**15.2.2.386 U\_ATOMIC\_UNIT\_OF\_PERMITTIVITY**

```
float pycodata.U_ATOMIC_UNIT_OF_PERMITTIVITY = 0.00000000017e-10
```

Definition at line 121 of file [pycodata.py](#).

**15.2.2.387 U\_ATOMIC\_UNIT\_OF\_TIME**

```
float pycodata.U_ATOMIC_UNIT_OF_TIME = 0.00000000000047e-17
```

Definition at line 124 of file [pycodata.py](#).

**15.2.2.388 U\_ATOMIC\_UNIT\_OF\_VELOCITY**

```
float pycodata.U_ATOMIC_UNIT_OF_VELOCITY = 0.000000000033e6
```

Definition at line 127 of file [pycodata.py](#).

**15.2.2.389 U\_AVOGADRO\_CONSTANT**

```
float pycodata.U_AVOGADRO_CONSTANT = 0.0e0
```

Definition at line 130 of file [pycodata.py](#).

**15.2.2.390 U\_BOHR\_MAGNETON**

```
float pycodata.U_BOHR_MAGNETON = 0.0000000028e-24
```

Definition at line 133 of file [pycodata.py](#).

**15.2.2.391 U\_BOHR\_MAGNETON\_IN\_EV\_T**

```
float pycodata.U_BOHR_MAGNETON_IN_EV_T = 0.0000000017e-5
```

Definition at line 136 of file [pycodata.py](#).

**15.2.2.392 U\_BOHR\_MAGNETON\_IN\_HZ\_T**

```
float pycodata.U_BOHR_MAGNETON_IN_HZ_T = 0.00000000042e10
```

Definition at line 139 of file [pycodata.py](#).

**15.2.2.393 U\_BOHR\_MAGNETON\_IN\_INVERSE\_METER\_PER\_TESLA**

```
float pycodata.U_BOHR_MAGNETON_IN_INVERSE_METER_PER_TESLA = 0.000000014e0
```

Definition at line 142 of file [pycodata.py](#).

**15.2.2.394 U\_BOHR\_MAGNETON\_IN\_K\_T**

```
float pycodata.U_BOHR_MAGNETON_IN_K_T = 0.00000000020e0
```

Definition at line 145 of file [pycodata.py](#).

**15.2.2.395 U\_BOHR\_RADIUS**

```
float pycodata.U_BOHR_RADIUS = 0.00000000080e-11
```

Definition at line 148 of file [pycodata.py](#).

**15.2.2.396 U\_BOLTZMANN\_CONSTANT**

```
float pycodata.U_BOLTZMANN_CONSTANT = 0.0e0
```

Definition at line 151 of file [pycodata.py](#).

**15.2.2.397 U\_BOLTZMANN\_CONSTANT\_IN\_EV\_K**

```
float pycodata.U_BOLTZMANN_CONSTANT_IN_EV_K = 0.0e0
```

Definition at line 154 of file [pycodata.py](#).

**15.2.2.398 U\_BOLTZMANN\_CONSTANT\_IN\_HZ\_K**

```
float pycodata.U_BOLTZMANN_CONSTANT_IN_HZ_K = 0.0e0
```

Definition at line 157 of file [pycodata.py](#).

**15.2.2.399 U\_BOLTZMANN\_CONSTANT\_IN\_INVERSE\_METER\_PER\_KELVIN**

```
float pycodata.U_BOLTZMANN_CONSTANT_IN_INVERSE_METER_PER_KELVIN = 0.0e0
```

Definition at line 160 of file [pycodata.py](#).

**15.2.2.400 U\_CHARACTERISTIC\_IMPEDANCE\_OF\_VACUUM**

```
float pycodata.U_CHARACTERISTIC_IMPEDANCE_OF_VACUUM = 0.000000057e0
```

Definition at line 163 of file [pycodata.py](#).

**15.2.2.401 U\_CLASSICAL\_ELECTRON\_RADIUS**

```
float pycodata.U_CLASSICAL_ELECTRON_RADIUS = 0.0000000013e-15
```

Definition at line 166 of file [pycodata.py](#).

**15.2.2.402 U\_COMPTON\_WAVELENGTH**

```
float pycodata.U_COMPTON_WAVELENGTH = 0.00000000073e-12
```

Definition at line 169 of file [pycodata.py](#).

**15.2.2.403 U\_CONDUCTANCE\_QUANTUM**

```
float pycodata.U_CONDUCTANCE_QUANTUM = 0.0e0
```

Definition at line 172 of file [pycodata.py](#).

**15.2.2.404 U\_CONVENTIONAL\_VALUE\_OF\_AMPERE\_90**

```
float pycodata.U_CONVENTIONAL_VALUE_OF_AMPERE_90 = 0.0e0
```

Definition at line 175 of file [pycodata.py](#).

**15.2.2.405 U\_CONVENTIONAL\_VALUE\_OF\_COULOMB\_90**

```
float pycodata.U_CONVENTIONAL_VALUE_OF_COULOMB_90 = 0.0e0
```

Definition at line 178 of file [pycodata.py](#).

**15.2.2.406 U\_CONVENTIONAL\_VALUE\_OF\_FARAD\_90**

```
float pycodata.U_CONVENTIONAL_VALUE_OF_FARAD_90 = 0.0e0
```

Definition at line 181 of file [pycodata.py](#).

**15.2.2.407 U\_CONVENTIONAL\_VALUE\_OF\_HENRY\_90**

```
float pycodata.U_CONVENTIONAL_VALUE_OF_HENRY_90 = 0.0e0
```

Definition at line 184 of file [pycodata.py](#).

**15.2.2.408 U\_CONVENTIONAL\_VALUE\_OF\_JOSEPHSON\_CONSTANT**

```
float pycodata.U_CONVENTIONAL_VALUE_OF_JOSEPHSON_CONSTANT = 0.0e0
```

Definition at line 187 of file [pycodata.py](#).

**15.2.2.409 U\_CONVENTIONAL\_VALUE\_OF\_OHM\_90**

```
float pycodata.U_CONVENTIONAL_VALUE_OF_OHM_90 = 0.0e0
```

Definition at line 190 of file [pycodata.py](#).

**15.2.2.410 U\_CONVENTIONAL\_VALUE\_OF\_VOLT\_90**

```
float pycodata.U_CONVENTIONAL_VALUE_OF_VOLT_90 = 0.0e0
```

Definition at line 193 of file [pycodata.py](#).

**15.2.2.411 U\_CONVENTIONAL\_VALUE\_OF\_VON\_KLITZING\_CONSTANT**

```
float pycodata.U_CONVENTIONAL_VALUE_OF_VON_KLITZING_CONSTANT = 0.0e0
```

Definition at line 196 of file [pycodata.py](#).

**15.2.2.412 U\_CONVENTIONAL\_VALUE\_OF\_WATT\_90**

```
float pycodata.U_CONVENTIONAL_VALUE_OF_WATT_90 = 0.0e0
```

Definition at line 199 of file [pycodata.py](#).

**15.2.2.413 U\_COPPER\_X\_UNIT**

```
float pycodata.U_COPPER_X_UNIT = 0.00000028e-13
```

Definition at line 202 of file [pycodata.py](#).

**15.2.2.414 U\_DEUTERON\_ELECTRON\_MAG\_\_MOM\_\_RATIO**

```
float pycodata.U_DEUTERON_ELECTRON_MAG__MOM__RATIO = 0.000000012e-4
```

Definition at line 205 of file [pycodata.py](#).

**15.2.2.415 U\_DEUTERON\_ELECTRON\_MASS\_RATIO**

```
float pycodata.U_DEUTERON_ELECTRON_MASS_RATIO = 0.00000013e0
```

Definition at line 208 of file [pycodata.py](#).

**15.2.2.416 U\_DEUTERON\_G\_FACTOR**

```
float pycodata.U_DEUTERON_G_FACTOR = 0.0000000022e0
```

Definition at line 211 of file [pycodata.py](#).

**15.2.2.417 U\_DEUTERON\_MAG\_\_MOM**

```
float pycodata.U_DEUTERON_MAG__MOM = 0.000000011e-27
```

Definition at line 214 of file [pycodata.py](#).

**15.2.2.418 U\_DEUTERON\_MAG\_\_MOM\_\_TO\_BOHR\_MAGNETON\_RATIO**

```
float pycodata.U_DEUTERON_MAG__MOM__TO_BOHR_MAGNETON_RATIO = 0.000000012e-4
```

Definition at line 217 of file [pycodata.py](#).

**15.2.2.419 U\_DEUTERON\_MAG\_\_MOM\_\_TO\_NUCLEAR\_MAGNETON\_RATIO**

```
float pycodata.U_DEUTERON_MAG__MOM__TO_NUCLEAR_MAGNETON_RATIO = 0.0000000022e0
```

Definition at line 220 of file [pycodata.py](#).

**15.2.2.420 U\_DEUTERON\_MASS**

```
float pycodata.U_DEUTERON_MASS = 0.0000000010e-27
```

Definition at line 223 of file [pycodata.py](#).

**15.2.2.421 U\_DEUTERON\_MASS\_ENERGY\_EQUIVALENT**

```
float pycodata.U_DEUTERON_MASS_ENERGY_EQUIVALENT = 0.00000000091e-10
```

Definition at line 226 of file [pycodata.py](#).

**15.2.2.422 U\_DEUTERON\_MASS\_ENERGY\_EQUIVALENT\_IN\_MEV**

```
float pycodata.U_DEUTERON_MASS_ENERGY_EQUIVALENT_IN_MEV = 0.00000057e0
```

Definition at line 229 of file [pycodata.py](#).



**15.2.2.423 U\_DEUTERON\_MASS\_IN\_U**

```
float pycodata.U_DEUTERON_MASS_IN_U = 0.000000000040e0
```

Definition at line 232 of file [pycodata.py](#).

**15.2.2.424 U\_DEUTERON\_MOLAR\_MASS**

```
float pycodata.U_DEUTERON_MOLAR_MASS = 0.00000000061e-3
```

Definition at line 235 of file [pycodata.py](#).

**15.2.2.425 U\_DEUTERON\_NEUTRON\_MAG\_\_MOM\_\_RATIO**

```
float pycodata.U_DEUTERON_NEUTRON_MAG__MOM__RATIO = 0.00000011e0
```

Definition at line 238 of file [pycodata.py](#).

**15.2.2.426 U\_DEUTERON\_PROTON\_MAG\_\_MOM\_\_RATIO**

```
float pycodata.U_DEUTERON_PROTON_MAG__MOM__RATIO = 0.00000000079e0
```

Definition at line 241 of file [pycodata.py](#).

**15.2.2.427 U\_DEUTERON\_PROTON\_MASS\_RATIO**

```
float pycodata.U_DEUTERON_PROTON_MASS_RATIO = 0.00000000011e0
```

Definition at line 244 of file [pycodata.py](#).

**15.2.2.428 U\_DEUTERON\_RELATIVE\_ATOMIC\_MASS**

```
float pycodata.U_DEUTERON_RELATIVE_ATOMIC_MASS = 0.000000000040e0
```

Definition at line 247 of file [pycodata.py](#).

**15.2.2.429 U\_DEUTERON\_RMS\_CHARGE\_RADIUS**

```
float pycodata.U_DEUTERON_RMS_CHARGE_RADIUS = 0.00074e-15
```

Definition at line 250 of file [pycodata.py](#).

**15.2.2.430 U\_ELECTRON\_CHARGE\_TO\_MASS\_QUOTIENT**

```
float pycodata.U_ELECTRON_CHARGE_TO_MASS_QUOTIENT = 0.00000000053e11
```

Definition at line 253 of file [pycodata.py](#).

**15.2.2.431 U\_ELECTRON\_DEUTERON\_MAG\_\_MOM\_\_RATIO**

```
float pycodata.U_ELECTRON_DEUTERON_MAG__MOM__RATIO = 0.0000056e0
```

Definition at line 256 of file [pycodata.py](#).

**15.2.2.432 U\_ELECTRON\_DEUTERON\_MASS\_RATIO**

```
float pycodata.U_ELECTRON_DEUTERON_MASS_RATIO = 0.000000000096e-4
```

Definition at line 259 of file [pycodata.py](#).

**15.2.2.433 U\_ELECTRON\_G\_FACTOR**

```
float pycodata.U_ELECTRON_G_FACTOR = 0.00000000000035e0
```

Definition at line 262 of file [pycodata.py](#).

**15.2.2.434 U\_ELECTRON\_GYROMAG\_\_RATIO**

```
float pycodata.U_ELECTRON_GYROMAG__RATIO = 0.00000000053e11
```

Definition at line 265 of file [pycodata.py](#).

**15.2.2.435 U\_ELECTRON\_GYROMAG\_\_RATIO\_IN\_MHZ\_T**

```
float pycodata.U_ELECTRON_GYROMAG__RATIO_IN_MHZ_T = 0.0000085e0
```

Definition at line 268 of file [pycodata.py](#).

**15.2.2.436 U\_ELECTRON\_HELION\_MASS\_RATIO**

```
float pycodata.U_ELECTRON_HELION_MASS_RATIO = 0.000000000079e-4
```

Definition at line 271 of file [pycodata.py](#).

**15.2.2.437 U\_ELECTRON\_MAG\_\_MOM**

```
float pycodata.U_ELECTRON_MAG__MOM = 0.0000000028e-24
```

Definition at line 274 of file [pycodata.py](#).

**15.2.2.438 U\_ELECTRON\_MAG\_\_MOM\_\_ANOMALY**

```
float pycodata.U_ELECTRON_MAG__MOM__ANOMALY = 0.00000000018e-3
```

Definition at line 277 of file [pycodata.py](#).

**15.2.2.439 U\_ELECTRON\_MAG\_\_MOM\_\_TO\_BOHR\_MAGNETON\_RATIO**

```
float pycodata.U_ELECTRON_MAG__MOM__TO_BOHR_MAGNETON_RATIO = 0.00000000000018e0
```

Definition at line 280 of file [pycodata.py](#).

**15.2.2.440 U\_ELECTRON\_MAG\_\_MOM\_\_TO\_NUCLEAR\_MAGNETON\_RATIO**

```
float pycodata.U_ELECTRON_MAG__MOM__TO_NUCLEAR_MAGNETON_RATIO = 0.00000011e0
```

Definition at line 283 of file [pycodata.py](#).

**15.2.2.441 U\_ELECTRON\_MASS**

```
float pycodata.U_ELECTRON_MASS = 0.0000000028e-31
```

Definition at line 286 of file [pycodata.py](#).

**15.2.2.442 U\_ELECTRON\_MASS\_ENERGY\_EQUIVALENT**

```
float pycodata.U_ELECTRON_MASS_ENERGY_EQUIVALENT = 0.0000000025e-14
```

Definition at line 289 of file [pycodata.py](#).

**15.2.2.443 U\_ELECTRON\_MASS\_ENERGY\_EQUIVALENT\_IN\_MEV**

```
float pycodata.U_ELECTRON_MASS_ENERGY_EQUIVALENT_IN_MEV = 0.00000000015e0
```

Definition at line 292 of file [pycodata.py](#).

**15.2.2.444 U\_ELECTRON\_MASS\_IN\_U**

```
float pycodata.U_ELECTRON_MASS_IN_U = 0.00000000016e-4
```

Definition at line 295 of file [pycodata.py](#).

**15.2.2.445 U\_ELECTRON\_MOLAR\_MASS**

```
float pycodata.U_ELECTRON_MOLAR_MASS = 0.00000000017e-7
```

Definition at line 298 of file [pycodata.py](#).

**15.2.2.446 U\_ELECTRON\_MUON\_MAG\_\_MOM\_\_RATIO**

```
float pycodata.U_ELECTRON_MUON_MAG__MOM__RATIO = 0.00000046e0
```

Definition at line 301 of file [pycodata.py](#).

**15.2.2.447 U\_ELECTRON\_MUON\_MASS\_RATIO**

```
float pycodata.U_ELECTRON_MUON_MASS_RATIO = 0.00000011e-3
```

Definition at line 304 of file [pycodata.py](#).

**15.2.2.448 U\_ELECTRON\_NEUTRON\_MAG\_\_MOM\_\_RATIO**

```
float pycodata.U_ELECTRON_NEUTRON_MAG__MOM__RATIO = 0.00023e0
```

Definition at line 307 of file [pycodata.py](#).

**15.2.2.449 U\_ELECTRON\_NEUTRON\_MASS\_RATIO**

```
float pycodata.U_ELECTRON_NEUTRON_MASS_RATIO = 0.0000000026e-4
```

Definition at line 310 of file [pycodata.py](#).

**15.2.2.450 U\_ELECTRON\_PROTON\_MAG\_\_MOM\_\_RATIO**

```
float pycodata.U_ELECTRON_PROTON_MAG__MOM__RATIO = 0.00000020e0
```

Definition at line 313 of file [pycodata.py](#).

**15.2.2.451 U\_ELECTRON\_PROTON\_MASS\_RATIO**

```
float pycodata.U_ELECTRON_PROTON_MASS_RATIO = 0.00000000033e-4
```

Definition at line 316 of file [pycodata.py](#).

**15.2.2.452 U\_ELECTRON\_RELATIVE\_ATOMIC\_MASS**

```
float pycodata.U_ELECTRON_RELATIVE_ATOMIC_MASS = 0.00000000016e-4
```

Definition at line 319 of file [pycodata.py](#).

**15.2.2.453 U\_ELECTRON\_TAU\_MASS\_RATIO**

```
float pycodata.U_ELECTRON_TAU_MASS_RATIO = 0.00019e-4
```

Definition at line 322 of file [pycodata.py](#).

**15.2.2.454 U\_ELECTRON\_TO\_ALPHA\_PARTICLE\_MASS\_RATIO**

```
float pycodata.U_ELECTRON_TO_ALPHA_PARTICLE_MASS_RATIO = 0.000000000045e-4
```

Definition at line 325 of file [pycodata.py](#).

**15.2.2.455 U\_ELECTRON\_TO\_SHIELDED\_HELION\_MAG\_\_MOM\_\_RATIO**

```
float pycodata.U_ELECTRON_TO_SHIELDED_HELION_MAG__MOM__RATIO = 0.000010e0
```

Definition at line 328 of file [pycodata.py](#).

**15.2.2.456 U\_ELECTRON\_TO\_SHIELDED\_PROTON\_MAG\_\_MOM\_\_RATIO**

```
float pycodata.U_ELECTRON_TO_SHIELDED_PROTON_MAG__MOM__RATIO = 0.0000072e0
```

Definition at line 331 of file [pycodata.py](#).

**15.2.2.457 U\_ELECTRON\_TRITON\_MASS\_RATIO**

```
float pycodata.U_ELECTRON_TRITON_MASS_RATIO = 0.000000000090e-4
```

Definition at line 334 of file [pycodata.py](#).

**15.2.2.458 U\_ELECTRON\_VOLT**

```
float pycodata.U_ELECTRON_VOLT = 0.0e0
```

Definition at line 337 of file [pycodata.py](#).

**15.2.2.459 U\_ELECTRON\_VOLT\_ATOMIC\_MASS\_UNIT\_RELATIONSHIP**

```
float pycodata.U_ELECTRON_VOLT_ATOMIC_MASS_UNIT_RELATIONSHIP = 0.00000000032e-9
```

Definition at line 340 of file [pycodata.py](#).

**15.2.2.460 U\_ELECTRON\_VOLT\_HARTREE\_RELATIONSHIP**

```
float pycodata.U_ELECTRON_VOLT_HARTREE_RELATIONSHIP = 0.000000000071e-2
```

Definition at line 343 of file [pycodata.py](#).

**15.2.2.461 U\_ELECTRON\_VOLT\_HERTZ\_RELATIONSHIP**

```
float pycodata.U_ELECTRON_VOLT_HERTZ_RELATIONSHIP = 0.0e0
```

Definition at line 346 of file [pycodata.py](#).

**15.2.2.462 U\_ELECTRON\_VOLT\_INVERSE\_METER\_RELATIONSHIP**

```
float pycodata.U_ELECTRON_VOLT_INVERSE_METER_RELATIONSHIP = 0.0e0
```

Definition at line 349 of file [pycodata.py](#).

**15.2.2.463 U\_ELECTRON\_VOLT\_JOULE\_RELATIONSHIP**

```
float pycodata.U_ELECTRON_VOLT_JOULE_RELATIONSHIP = 0.0e0
```

Definition at line 352 of file [pycodata.py](#).

**15.2.2.464 U\_ELECTRON\_VOLT\_KELVIN\_RELATIONSHIP**

```
float pycodata.U_ELECTRON_VOLT_KELVIN_RELATIONSHIP = 0.0e0
```

Definition at line 355 of file [pycodata.py](#).

**15.2.2.465 U\_ELECTRON\_VOLT\_KILOGRAM\_RELATIONSHIP**

```
float pycodata.U_ELECTRON_VOLT_KILOGRAM_RELATIONSHIP = 0.0e0
```

Definition at line 358 of file [pycodata.py](#).

**15.2.2.466 U\_ELEMENTARY\_CHARGE**

```
float pycodata.U_ELEMENTARY_CHARGE = 0.0e0
```

Definition at line 361 of file [pycodata.py](#).

**15.2.2.467 U\_ELEMENTARY\_CHARGE\_OVER\_H\_BAR**

```
float pycodata.U_ELEMENTARY_CHARGE_OVER_H_BAR = 0.0e0
```

Definition at line 364 of file [pycodata.py](#).

**15.2.2.468 U\_FARADAY\_CONSTANT**

```
float pycodata.U_FARADAY_CONSTANT = 0.0e0
```

Definition at line 367 of file [pycodata.py](#).

**15.2.2.469 U\_FERMI\_COUPLING\_CONSTANT**

```
float pycodata.U_FERMI_COUPLING_CONSTANT = 0.0000006e-5
```

Definition at line 370 of file [pycodata.py](#).

**15.2.2.470 U\_FINE\_STRUCTURE\_CONSTANT**

```
float pycodata.U_FINE_STRUCTURE_CONSTANT = 0.0000000011e-3
```

Definition at line 373 of file [pycodata.py](#).



**15.2.2.471 U\_FIRST\_RADIATION\_CONSTANT**

```
float pycodata.U_FIRST_RADIATION_CONSTANT = 0.0e0
```

Definition at line 376 of file [pycodata.py](#).

**15.2.2.472 U\_FIRST\_RADIATION\_CONSTANT\_FOR\_SPECTRAL\_RADIANCE**

```
float pycodata.U_FIRST_RADIATION_CONSTANT_FOR_SPECTRAL_RADIANCE = 0.0e0
```

Definition at line 379 of file [pycodata.py](#).

**15.2.2.473 U\_HARTREE\_ATOMIC\_MASS\_UNIT\_RELATIONSHIP**

```
float pycodata.U_HARTREE_ATOMIC_MASS_UNIT_RELATIONSHIP = 0.00000000088e-8
```

Definition at line 382 of file [pycodata.py](#).

**15.2.2.474 U\_HARTREE\_ELECTRON\_VOLT\_RELATIONSHIP**

```
float pycodata.U_HARTREE_ELECTRON_VOLT_RELATIONSHIP = 0.000000000053e0
```

Definition at line 385 of file [pycodata.py](#).

**15.2.2.475 U\_HARTREE\_ENERGY**

```
float pycodata.U_HARTREE_ENERGY = 0.0000000000085e-18
```

Definition at line 388 of file [pycodata.py](#).

**15.2.2.476 U\_HARTREE\_ENERGY\_IN\_EV**

```
float pycodata.U_HARTREE_ENERGY_IN_EV = 0.000000000053e0
```

Definition at line 391 of file [pycodata.py](#).

**15.2.2.477 U\_HARTREE\_HERTZ\_RELATIONSHIP**

```
float pycodata.U_HARTREE_HERTZ_RELATIONSHIP = 0.000000000013e15
```

Definition at line 394 of file [pycodata.py](#).

**15.2.2.478 U\_HARTREE\_INVERSE\_METER\_RELATIONSHIP**

```
float pycodata.U_HARTREE_INVERSE_METER_RELATIONSHIP = 0.0000000000043e7
```

Definition at line 397 of file [pycodata.py](#).

**15.2.2.479 U\_HARTREE\_JOULE\_RELATIONSHIP**

```
float pycodata.U_HARTREE_JOULE_RELATIONSHIP = 0.0000000000085e-18
```

Definition at line 400 of file [pycodata.py](#).

**15.2.2.480 U\_HARTREE\_KELVIN\_RELATIONSHIP**

```
float pycodata.U_HARTREE_KELVIN_RELATIONSHIP = 0.0000000000061e5
```

Definition at line 403 of file [pycodata.py](#).

**15.2.2.481 U\_HARTREE\_KILOGRAM\_RELATIONSHIP**

```
float pycodata.U_HARTREE_KILOGRAM_RELATIONSHIP = 0.0000000000094e-35
```

Definition at line 406 of file [pycodata.py](#).

**15.2.2.482 U\_HELION\_ELECTRON\_MASS\_RATIO**

```
float pycodata.U_HELION_ELECTRON_MASS_RATIO = 0.00000024e0
```

Definition at line 409 of file [pycodata.py](#).

**15.2.2.483 U\_HELION\_G\_FACTOR**

```
float pycodata.U_HELION_G_FACTOR = 0.000000050e0
```

Definition at line 412 of file [pycodata.py](#).

**15.2.2.484 U\_HELION\_MAG\_\_MOM**

```
float pycodata.U_HELION_MAG__MOM = 0.000000013e-26
```

Definition at line 415 of file [pycodata.py](#).

**15.2.2.485 U\_HELION\_MAG\_\_MOM\_\_TO\_BOHR\_MAGNETON\_RATIO**

```
float pycodata.U_HELION_MAG__MOM__TO_BOHR_MAGNETON_RATIO = 0.000000014e-3
```

Definition at line 418 of file [pycodata.py](#).

**15.2.2.486 U\_HELION\_MAG\_\_MOM\_\_TO\_NUCLEAR\_MAGNETON\_RATIO**

```
float pycodata.U_HELION_MAG__MOM__TO_NUCLEAR_MAGNETON_RATIO = 0.000000025e0
```

Definition at line 421 of file [pycodata.py](#).

**15.2.2.487 U\_HELION\_MASS**

```
float pycodata.U_HELION_MASS = 0.0000000015e-27
```

Definition at line 424 of file [pycodata.py](#).

**15.2.2.488 U\_HELION\_MASS\_ENERGY\_EQUIVALENT**

```
float pycodata.U_HELION_MASS_ENERGY_EQUIVALENT = 0.0000000014e-10
```

Definition at line 427 of file [pycodata.py](#).

**15.2.2.489 U\_HELION\_MASS\_ENERGY\_EQUIVALENT\_IN\_MEV**

```
float pycodata.U_HELION_MASS_ENERGY_EQUIVALENT_IN_MEV = 0.00000085e0
```

Definition at line 430 of file [pycodata.py](#).

**15.2.2.490 U\_HELION\_MASS\_IN\_U**

```
float pycodata.U_HELION_MASS_IN_U = 0.000000000097e0
```

Definition at line 433 of file [pycodata.py](#).

**15.2.2.491 U\_HELION\_MOLAR\_MASS**

```
float pycodata.U_HELION_MOLAR_MASS = 0.00000000091e-3
```

Definition at line 436 of file [pycodata.py](#).

**15.2.2.492 U\_HELION\_PROTON\_MASS\_RATIO**

```
float pycodata.U_HELION_PROTON_MASS_RATIO = 0.00000000013e0
```

Definition at line 439 of file [pycodata.py](#).

**15.2.2.493 U\_HELION\_RELATIVE\_ATOMIC\_MASS**

```
float pycodata.U_HELION_RELATIVE_ATOMIC_MASS = 0.00000000097e0
```

Definition at line 442 of file [pycodata.py](#).

**15.2.2.494 U\_HELION\_SHIELDING\_SHIFT**

```
float pycodata.U_HELION_SHIELDING_SHIFT = 0.000010e-5
```

Definition at line 445 of file [pycodata.py](#).

**15.2.2.495 U\_HERTZ\_ATOMIC\_MASS\_UNIT\_RELATIONSHIP**

```
float pycodata.U_HERTZ_ATOMIC_MASS_UNIT_RELATIONSHIP = 0.0000000013e-24
```

Definition at line 448 of file [pycodata.py](#).

**15.2.2.496 U\_HERTZ\_ELECTRON\_VOLT\_RELATIONSHIP**

```
float pycodata.U_HERTZ_ELECTRON_VOLT_RELATIONSHIP = 0.0e0
```

Definition at line 451 of file [pycodata.py](#).

**15.2.2.497 U\_HERTZ\_HARTREE\_RELATIONSHIP**

```
float pycodata.U_HERTZ_HARTREE_RELATIONSHIP = 0.0000000000029e-16
```

Definition at line 454 of file [pycodata.py](#).

**15.2.2.498 U\_HERTZ\_INVERSE\_METER\_RELATIONSHIP**

```
float pycodata.U_HERTZ_INVERSE_METER_RELATIONSHIP = 0.0e0
```

Definition at line 457 of file [pycodata.py](#).

**15.2.2.499 U\_HERTZ\_JOULE\_RELATIONSHIP**

```
float pycodata.U_HERTZ_JOULE_RELATIONSHIP = 0.0e0
```

Definition at line 460 of file [pycodata.py](#).

**15.2.2.500 U\_HERTZ\_KELVIN\_RELATIONSHIP**

```
float pycodata.U_HERTZ_KELVIN_RELATIONSHIP = 0.0e0
```

Definition at line 463 of file [pycodata.py](#).

**15.2.2.501 U\_HERTZ\_KILOGRAM\_RELATIONSHIP**

```
float pycodata.U_HERTZ_KILOGRAM_RELATIONSHIP = 0.0e0
```

Definition at line 466 of file [pycodata.py](#).

**15.2.2.502 U\_HYPERFINE\_TRANSITION\_FREQUENCY\_OF\_CS\_133**

```
float pycodata.U_HYPERFINE_TRANSITION_FREQUENCY_OF_CS_133 = 0.0e0
```

Definition at line 469 of file [pycodata.py](#).

**15.2.2.503 U\_INVERSE\_FINE\_STRUCTURE\_CONSTANT**

```
float pycodata.U_INVERSE_FINE_STRUCTURE_CONSTANT = 0.000000021e0
```

Definition at line 472 of file [pycodata.py](#).

**15.2.2.504 U\_INVERSE\_METER\_ATOMIC\_MASS\_UNIT\_RELATIONSHIP**

```
float pycodata.U_INVERSE_METER_ATOMIC_MASS_UNIT_RELATIONSHIP = 0.00000000040e-15
```

Definition at line 475 of file [pycodata.py](#).

**15.2.2.505 U\_INVERSE\_METER\_ELECTRON\_VOLT\_RELATIONSHIP**

```
float pycodata.U_INVERSE_METER_ELECTRON_VOLT_RELATIONSHIP = 0.0e0
```

Definition at line 478 of file [pycodata.py](#).

**15.2.2.506 U\_INVERSE\_METER\_HARTREE\_RELATIONSHIP**

```
float pycodata.U_INVERSE_METER_HARTREE_RELATIONSHIP = 0.0000000000088e-8
```

Definition at line 481 of file [pycodata.py](#).

**15.2.2.507 U\_INVERSE\_METER\_HERTZ\_RELATIONSHIP**

```
float pycodata.U_INVERSE_METER_HERTZ_RELATIONSHIP = 0.0e0
```

Definition at line 484 of file [pycodata.py](#).

**15.2.2.508 U\_INVERSE\_METER\_JOULE\_RELATIONSHIP**

```
float pycodata.U_INVERSE_METER_JOULE_RELATIONSHIP = 0.0e0
```

Definition at line 487 of file [pycodata.py](#).

**15.2.2.509 U\_INVERSE\_METER\_KELVIN\_RELATIONSHIP**

```
float pycodata.U_INVERSE_METER_KELVIN_RELATIONSHIP = 0.0e0
```

Definition at line 490 of file [pycodata.py](#).

**15.2.2.510 U\_INVERSE\_METER\_KILOGRAM\_RELATIONSHIP**

```
float pycodata.U_INVERSE_METER_KILOGRAM_RELATIONSHIP = 0.0e0
```

Definition at line 493 of file [pycodata.py](#).

**15.2.2.511 U\_INVERSE\_OF\_CONDUCTANCE\_QUANTUM**

```
float pycodata.U_INVERSE_OF_CONDUCTANCE_QUANTUM = 0.0e0
```

Definition at line 496 of file [pycodata.py](#).

**15.2.2.512 U\_JOSEPHSON\_CONSTANT**

```
float pycodata.U_JOSEPHSON_CONSTANT = 0.0e0
```

Definition at line 499 of file [pycodata.py](#).

**15.2.2.513 U\_JOULE\_ATOMIC\_MASS\_UNIT\_RELATIONSHIP**

```
float pycodata.U_JOULE_ATOMIC_MASS_UNIT_RELATIONSHIP = 0.0000000020e9
```

Definition at line 502 of file [pycodata.py](#).

**15.2.2.514 U\_JOULE\_ELECTRON\_VOLT\_RELATIONSHIP**

```
float pycodata.U_JOULE_ELECTRON_VOLT_RELATIONSHIP = 0.0e0
```

Definition at line 505 of file [pycodata.py](#).

**15.2.2.515 U\_JOULE\_HARTREE\_RELATIONSHIP**

```
float pycodata.U_JOULE_HARTREE_RELATIONSHIP = 0.0000000000045e17
```

Definition at line 508 of file [pycodata.py](#).

**15.2.2.516 U\_JOULE\_HERTZ\_RELATIONSHIP**

```
float pycodata.U_JOULE_HERTZ_RELATIONSHIP = 0.0e0
```

Definition at line 511 of file [pycodata.py](#).

**15.2.2.517 U\_JOULE\_INVERSE\_METER\_RELATIONSHIP**

```
float pycodata.U_JOULE_INVERSE_METER_RELATIONSHIP = 0.0e0
```

Definition at line 514 of file [pycodata.py](#).

**15.2.2.518 U\_JOULE\_KELVIN\_RELATIONSHIP**

```
float pycodata.U_JOULE_KELVIN_RELATIONSHIP = 0.0e0
```

Definition at line 517 of file [pycodata.py](#).



**15.2.2.519 U\_JOULE\_KILOGRAM\_RELATIONSHIP**

```
float pycodata.U_JOULE_KILOGRAM_RELATIONSHIP = 0.0e0
```

Definition at line 520 of file [pycodata.py](#).

**15.2.2.520 U\_KELVIN\_ATOMIC\_MASS\_UNIT\_RELATIONSHIP**

```
float pycodata.U_KELVIN_ATOMIC_MASS_UNIT_RELATIONSHIP = 0.0000000028e-14
```

Definition at line 523 of file [pycodata.py](#).

**15.2.2.521 U\_KELVIN\_ELECTRON\_VOLT\_RELATIONSHIP**

```
float pycodata.U_KELVIN_ELECTRON_VOLT_RELATIONSHIP = 0.0e0
```

Definition at line 526 of file [pycodata.py](#).

**15.2.2.522 U\_KELVIN\_HARTREE\_RELATIONSHIP**

```
float pycodata.U_KELVIN_HARTREE_RELATIONSHIP = 0.0000000000061e-6
```

Definition at line 529 of file [pycodata.py](#).

**15.2.2.523 U\_KELVIN\_HERTZ\_RELATIONSHIP**

```
float pycodata.U_KELVIN_HERTZ_RELATIONSHIP = 0.0e0
```

Definition at line 532 of file [pycodata.py](#).

**15.2.2.524 U\_KELVIN\_INVERSE\_METER\_RELATIONSHIP**

```
float pycodata.U_KELVIN_INVERSE_METER_RELATIONSHIP = 0.0e0
```

Definition at line 535 of file [pycodata.py](#).

**15.2.2.525 U\_KELVIN\_JOULE\_RELATIONSHIP**

```
float pycodata.U_KELVIN_JOULE_RELATIONSHIP = 0.0e0
```

Definition at line 538 of file [pycodata.py](#).

**15.2.2.526 U\_KELVIN\_KILOGRAM\_RELATIONSHIP**

```
float pycodata.U_KELVIN_KILOGRAM_RELATIONSHIP = 0.0e0
```

Definition at line 541 of file [pycodata.py](#).

**15.2.2.527 U\_KILOGRAM\_ATOMIC\_MASS\_UNIT\_RELATIONSHIP**

```
float pycodata.U_KILOGRAM_ATOMIC_MASS_UNIT_RELATIONSHIP = 0.0000000018e26
```

Definition at line 544 of file [pycodata.py](#).

**15.2.2.528 U\_KILOGRAM\_ELECTRON\_VOLT\_RELATIONSHIP**

```
float pycodata.U_KILOGRAM_ELECTRON_VOLT_RELATIONSHIP = 0.0e0
```

Definition at line 547 of file [pycodata.py](#).

**15.2.2.529 U\_KILOGRAM\_HARTREE\_RELATIONSHIP**

```
float pycodata.U_KILOGRAM_HARTREE_RELATIONSHIP = 0.00000000000040e34
```

Definition at line 550 of file [pycodata.py](#).

**15.2.2.530 U\_KILOGRAM\_HERTZ\_RELATIONSHIP**

```
float pycodata.U_KILOGRAM_HERTZ_RELATIONSHIP = 0.0e0
```

Definition at line 553 of file [pycodata.py](#).

**15.2.2.531 U\_KILOGRAM\_INVERSE\_METER\_RELATIONSHIP**

```
float pycodata.U_KILOGRAM_INVERSE_METER_RELATIONSHIP = 0.0e0
```

Definition at line 556 of file [pycodata.py](#).

**15.2.2.532 U\_KILOGRAM\_JOULE\_RELATIONSHIP**

```
float pycodata.U_KILOGRAM_JOULE_RELATIONSHIP = 0.0e0
```

Definition at line 559 of file [pycodata.py](#).

**15.2.2.533 U\_KILOGRAM\_KELVIN\_RELATIONSHIP**

```
float pycodata.U_KILOGRAM_KELVIN_RELATIONSHIP = 0.0e0
```

Definition at line 562 of file [pycodata.py](#).

**15.2.2.534 U\_LATTICE\_PARAMETER\_OF\_SILICON**

```
float pycodata.U_LATTICE_PARAMETER_OF_SILICON = 0.000000089e-10
```

Definition at line 565 of file [pycodata.py](#).

**15.2.2.535 U\_LATTICE\_SPACING\_OF\_IDEAL\_SI\_\_220**

```
float pycodata.U_LATTICE_SPACING_OF_IDEAL_SI__220 = 0.000000032e-10
```

Definition at line 568 of file [pycodata.py](#).

**15.2.2.536 U\_LOSCHMIDT\_CONSTANT\_\_273\_15\_K\_\_100\_KPA**

```
float pycodata.U_LOSCHMIDT_CONSTANT__273_15_K__100_KPA = 0.0e0
```

Definition at line 571 of file [pycodata.py](#).

**15.2.2.537 U\_LOSCHMIDT\_CONSTANT\_\_273\_15\_K\_\_101\_325\_KPA**

```
float pycodata.U_LOSCHMIDT_CONSTANT__273_15_K__101_325_KPA = 0.0e0
```

Definition at line 574 of file [pycodata.py](#).

**15.2.2.538 U\_LUMINOUS EFFICACY**

```
float pycodata.U_LUMINOUS EFFICACY = 0.0e0
```

Definition at line 577 of file [pycodata.py](#).

**15.2.2.539 U\_MAG\_\_FLUX\_QUANTUM**

```
float pycodata.U_MAG__FLUX_QUANTUM = 0.0e0
```

Definition at line 580 of file [pycodata.py](#).

**15.2.2.540 U\_MOLAR\_GAS\_CONSTANT**

```
float pycodata.U_MOLAR_GAS_CONSTANT = 0.0e0
```

Definition at line 583 of file [pycodata.py](#).

**15.2.2.541 U\_MOLAR\_MASS\_CONSTANT**

```
float pycodata.U_MOLAR_MASS_CONSTANT = 0.00000000030e-3
```

Definition at line 586 of file [pycodata.py](#).

**15.2.2.542 U\_MOLAR\_MASS\_OF CARBON\_12**

```
float pycodata.U_MOLAR_MASS_OF CARBON_12 = 0.0000000036e-3
```

Definition at line 589 of file [pycodata.py](#).

**15.2.2.543 U\_MOLAR\_PLANCK\_CONSTANT**

```
float pycodata.U_MOLAR_PLANCK_CONSTANT = 0.0e0
```

Definition at line 592 of file [pycodata.py](#).

**15.2.2.544 U\_MOLAR\_VOLUME\_OF\_IDEAL\_GAS\_\_273\_15\_K\_\_100\_KPA**

```
float pycodata.U_MOLAR_VOLUME_OF_IDEAL_GAS__273_15_K__100_KPA = 0.0e0
```

Definition at line 595 of file [pycodata.py](#).

**15.2.2.545 U\_MOLAR\_VOLUME\_OF\_IDEAL\_GAS\_\_273\_15\_K\_\_101\_325\_KPA**

```
float pycodata.U_MOLAR_VOLUME_OF_IDEAL_GAS__273_15_K__101_325_KPA = 0.0e0
```

Definition at line 598 of file [pycodata.py](#).

**15.2.2.546 U\_MOLAR\_VOLUME\_OF\_SILICON**

```
float pycodata.U_MOLAR_VOLUME_OF_SILICON = 0.000000060e-5
```

Definition at line 601 of file [pycodata.py](#).

**15.2.2.547 U\_MOLYBDENUM\_X\_UNIT**

```
float pycodata.U_MOLYBDENUM_X_UNIT = 0.00000053e-13
```

Definition at line 604 of file [pycodata.py](#).

**15.2.2.548 U\_MUON\_COMPTON\_WAVELENGTH**

```
float pycodata.U_MUON_COMPTON_WAVELENGTH = 0.000000026e-14
```

Definition at line 607 of file [pycodata.py](#).

**15.2.2.549 U\_MUON\_ELECTRON\_MASS\_RATIO**

```
float pycodata.U_MUON_ELECTRON_MASS_RATIO = 0.0000046e0
```

Definition at line 610 of file [pycodata.py](#).

**15.2.2.550 U\_MUON\_G\_FACTOR**

```
float pycodata.U_MUON_G_FACTOR = 0.0000000013e0
```

Definition at line 613 of file [pycodata.py](#).

**15.2.2.551 U\_MUON\_MAG\_\_MOM**

```
float pycodata.U_MUON_MAG__MOM = 0.00000010e-26
```

Definition at line 616 of file [pycodata.py](#).

**15.2.2.552 U\_MUON\_MAG\_\_MOM\_\_ANOMALY**

```
float pycodata.U_MUON_MAG__MOM__ANOMALY = 0.00000063e-3
```

Definition at line 619 of file [pycodata.py](#).

**15.2.2.553 U\_MUON\_MAG\_\_MOM\_\_TO\_BOHR\_MAGNETON\_RATIO**

```
float pycodata.U_MUON_MAG__MOM__TO_BOHR_MAGNETON_RATIO = 0.00000011e-3
```

Definition at line 622 of file [pycodata.py](#).

**15.2.2.554 U\_MUON\_MAG\_\_MOM\_\_TO\_NUCLEAR\_MAGNETON\_RATIO**

```
float pycodata.U_MUON_MAG__MOM__TO_NUCLEAR_MAGNETON_RATIO = 0.00000020e0
```

Definition at line 625 of file [pycodata.py](#).

**15.2.2.555 U\_MUON\_MASS**

```
float pycodata.U_MUON_MASS = 0.000000042e-28
```

Definition at line 628 of file [pycodata.py](#).

**15.2.2.556 U\_MUON\_MASS\_ENERGY\_EQUIVALENT**

```
float pycodata.U_MUON_MASS_ENERGY_EQUIVALENT = 0.000000038e-11
```

Definition at line 631 of file [pycodata.py](#).

**15.2.2.557 U\_MUON\_MASS\_ENERGY\_EQUIVALENT\_IN\_MEV**

```
float pycodata.U_MUON_MASS_ENERGY_EQUIVALENT_IN_MEV = 0.0000023e0
```

Definition at line 634 of file [pycodata.py](#).

**15.2.2.558 U\_MUON\_MASS\_IN\_U**

```
float pycodata.U_MUON_MASS_IN_U = 0.0000000025e0
```

Definition at line 637 of file [pycodata.py](#).

**15.2.2.559 U\_MUON\_MOLAR\_MASS**

```
float pycodata.U_MUON_MOLAR_MASS = 0.000000025e-4
```

Definition at line 640 of file [pycodata.py](#).

**15.2.2.560 U\_MUON\_NEUTRON\_MASS\_RATIO**

```
float pycodata.U_MUON_NEUTRON_MASS_RATIO = 0.0000000025e0
```

Definition at line 643 of file [pycodata.py](#).

**15.2.2.561 U\_MUON\_PROTON\_MAG\_MOM\_RATIO**

```
float pycodata.U_MUON_PROTON_MAG_MOM_RATIO = 0.000000071e0
```

Definition at line 646 of file [pycodata.py](#).

**15.2.2.562 U\_MUON\_PROTON\_MASS\_RATIO**

```
float pycodata.U_MUON_PROTON_MASS_RATIO = 0.0000000025e0
```

Definition at line 649 of file [pycodata.py](#).

**15.2.2.563 U\_MUON\_TAU\_MASS\_RATIO**

```
float pycodata.U_MUON_TAU_MASS_RATIO = 0.00040e-2
```

Definition at line 652 of file [pycodata.py](#).

**15.2.2.564 U\_NATURAL\_UNIT\_OF\_ACTION**

```
float pycodata.U_NATURAL_UNIT_OF_ACTION = 0.0e0
```

Definition at line 655 of file [pycodata.py](#).

**15.2.2.565 U\_NATURAL\_UNIT\_OF\_ACTION\_IN\_EV\_S**

```
float pycodata.U_NATURAL_UNIT_OF_ACTION_IN_EV_S = 0.0e0
```

Definition at line 658 of file [pycodata.py](#).

**15.2.2.566 U\_NATURAL\_UNIT\_OF\_ENERGY**

```
float pycodata.U_NATURAL_UNIT_OF_ENERGY = 0.0000000025e-14
```

Definition at line 661 of file [pycodata.py](#).



**15.2.2.567 U\_NATURAL\_UNIT\_OF\_ENERGY\_IN\_MEV**

```
float pycodata.U_NATURAL_UNIT_OF_ENERGY_IN_MEV = 0.00000000015e0
```

Definition at line 664 of file [pycodata.py](#).

**15.2.2.568 U\_NATURAL\_UNIT\_OF\_LENGTH**

```
float pycodata.U_NATURAL_UNIT_OF_LENGTH = 0.0000000012e-13
```

Definition at line 667 of file [pycodata.py](#).

**15.2.2.569 U\_NATURAL\_UNIT\_OF\_MASS**

```
float pycodata.U_NATURAL_UNIT_OF_MASS = 0.0000000028e-31
```

Definition at line 670 of file [pycodata.py](#).

**15.2.2.570 U\_NATURAL\_UNIT\_OF\_MOMENTUM**

```
float pycodata.U_NATURAL_UNIT_OF_MOMENTUM = 0.00000000082e-22
```

Definition at line 673 of file [pycodata.py](#).

**15.2.2.571 U\_NATURAL\_UNIT\_OF\_MOMENTUM\_IN\_MEV\_C**

```
float pycodata.U_NATURAL_UNIT_OF_MOMENTUM_IN_MEV_C = 0.00000000015e0
```

Definition at line 676 of file [pycodata.py](#).

**15.2.2.572 U\_NATURAL\_UNIT\_OF\_TIME**

```
float pycodata.U_NATURAL_UNIT_OF_TIME = 0.00000000039e-21
```

Definition at line 679 of file [pycodata.py](#).

**15.2.2.573 U\_NATURAL\_UNIT\_OF\_VELOCITY**

```
float pycodata.U_NATURAL_UNIT_OF_VELOCITY = 0.0e0
```

Definition at line 682 of file [pycodata.py](#).

**15.2.2.574 U\_NEUTRON\_COMPTON\_WAVELENGTH**

```
float pycodata.U_NEUTRON_COMPTON_WAVELENGTH = 0.00000000075e-15
```

Definition at line 685 of file [pycodata.py](#).

**15.2.2.575 U\_NEUTRON\_ELECTRON\_MAG\_\_MOM\_\_RATIO**

```
float pycodata.U_NEUTRON_ELECTRON_MAG__MOM__RATIO = 0.00000025e-3
```

Definition at line 688 of file [pycodata.py](#).

**15.2.2.576 U\_NEUTRON\_ELECTRON\_MASS\_RATIO**

```
float pycodata.U_NEUTRON_ELECTRON_MASS_RATIO = 0.00000089e0
```

Definition at line 691 of file [pycodata.py](#).

**15.2.2.577 U\_NEUTRON\_G\_FACTOR**

```
float pycodata.U_NEUTRON_G_FACTOR = 0.00000090e0
```

Definition at line 694 of file [pycodata.py](#).

**15.2.2.578 U\_NEUTRON\_GYROMAG\_\_RATIO**

```
float pycodata.U_NEUTRON_GYROMAG__RATIO = 0.00000043e8
```

Definition at line 697 of file [pycodata.py](#).

**15.2.2.579 U\_NEUTRON\_GYROMAG\_RATIO\_IN\_MHZ\_T**

```
float pycodata.U_NEUTRON_GYROMAG_RATIO_IN_MHZ_T = 0.0000069e0
```

Definition at line 700 of file [pycodata.py](#).

**15.2.2.580 U\_NEUTRON\_MAG\_MOM**

```
float pycodata.U_NEUTRON_MAG_MOM = 0.0000023e-27
```

Definition at line 703 of file [pycodata.py](#).

**15.2.2.581 U\_NEUTRON\_MAG\_MOM\_TO\_BOHR\_MAGNETON\_RATIO**

```
float pycodata.U_NEUTRON_MAG_MOM_TO_BOHR_MAGNETON_RATIO = 0.00000025e-3
```

Definition at line 706 of file [pycodata.py](#).

**15.2.2.582 U\_NEUTRON\_MAG\_MOM\_TO\_NUCLEAR\_MAGNETON\_RATIO**

```
float pycodata.U_NEUTRON_MAG_MOM_TO_NUCLEAR_MAGNETON_RATIO = 0.00000045e0
```

Definition at line 709 of file [pycodata.py](#).

**15.2.2.583 U\_NEUTRON\_MASS**

```
float pycodata.U_NEUTRON_MASS = 0.00000000095e-27
```

Definition at line 712 of file [pycodata.py](#).

**15.2.2.584 U\_NEUTRON\_MASS\_ENERGY\_EQUIVALENT**

```
float pycodata.U_NEUTRON_MASS_ENERGY_EQUIVALENT = 0.00000000086e-10
```

Definition at line 715 of file [pycodata.py](#).

**15.2.2.585 U\_NEUTRON\_MASS\_ENERGY\_EQUIVALENT\_IN\_MEV**

```
float pycodata.U_NEUTRON_MASS_ENERGY_EQUIVALENT_IN_MEV = 0.00000054e0
```

Definition at line 718 of file [pycodata.py](#).

**15.2.2.586 U\_NEUTRON\_MASS\_IN\_U**

```
float pycodata.U_NEUTRON_MASS_IN_U = 0.00000000049e0
```

Definition at line 721 of file [pycodata.py](#).

**15.2.2.587 U\_NEUTRON\_MOLAR\_MASS**

```
float pycodata.U_NEUTRON_MOLAR_MASS = 0.00000000057e-3
```

Definition at line 724 of file [pycodata.py](#).

**15.2.2.588 U\_NEUTRON\_MUON\_MASS\_RATIO**

```
float pycodata.U_NEUTRON_MUON_MASS_RATIO = 0.00000020e0
```

Definition at line 727 of file [pycodata.py](#).

**15.2.2.589 U\_NEUTRON\_PROTON\_MAG\_\_MOM\_\_RATIO**

```
float pycodata.U_NEUTRON_PROTON_MAG__MOM__RATIO = 0.00000016e0
```

Definition at line 730 of file [pycodata.py](#).

**15.2.2.590 U\_NEUTRON\_PROTON\_MASS\_DIFFERENCE**

```
float pycodata.U_NEUTRON_PROTON_MASS_DIFFERENCE = 0.00000082e-30
```

Definition at line 733 of file [pycodata.py](#).

**15.2.2.591 U\_NEUTRON\_PROTON\_MASS\_DIFFERENCE\_ENERGY\_EQUIVALENT**

```
float pycodata.U_NEUTRON_PROTON_MASS_DIFFERENCE_ENERGY_EQUIVALENT = 0.00000074e-13
```

Definition at line 736 of file [pycodata.py](#).

**15.2.2.592 U\_NEUTRON\_PROTON\_MASS\_DIFFERENCE\_ENERGY\_EQUIVALENT\_IN\_MEV**

```
float pycodata.U_NEUTRON_PROTON_MASS_DIFFERENCE_ENERGY_EQUIVALENT_IN_MEV = 0.00000046e0
```

Definition at line 739 of file [pycodata.py](#).

**15.2.2.593 U\_NEUTRON\_PROTON\_MASS\_DIFFERENCE\_IN\_U**

```
float pycodata.U_NEUTRON_PROTON_MASS_DIFFERENCE_IN_U = 0.00000049e-3
```

Definition at line 742 of file [pycodata.py](#).

**15.2.2.594 U\_NEUTRON\_PROTON\_MASS\_RATIO**

```
float pycodata.U_NEUTRON_PROTON_MASS_RATIO = 0.00000000049e0
```

Definition at line 745 of file [pycodata.py](#).

**15.2.2.595 U\_NEUTRON\_RELATIVE\_ATOMIC\_MASS**

```
float pycodata.U_NEUTRON_RELATIVE_ATOMIC_MASS = 0.00000000049e0
```

Definition at line 748 of file [pycodata.py](#).

**15.2.2.596 U\_NEUTRON\_TAU\_MASS\_RATIO**

```
float pycodata.U_NEUTRON_TAU_MASS_RATIO = 0.000036e0
```

Definition at line 751 of file [pycodata.py](#).

**15.2.2.597 U\_NEUTRON\_TO\_SHIELDED\_PROTON\_MAG\_MOM\_RATIO**

```
float pycodata.U_NEUTRON_TO_SHIELDED_PROTON_MAG_MOM_RATIO = 0.00000016e0
```

Definition at line 754 of file [pycodata.py](#).

**15.2.2.598 U\_NEWTONIAN\_CONSTANT\_OF\_GRAVITATION**

```
float pycodata.U_NEWTONIAN_CONSTANT_OF_GRAVITATION = 0.00015e-11
```

Definition at line 757 of file [pycodata.py](#).

**15.2.2.599 U\_NEWTONIAN\_CONSTANT\_OF\_GRAVITATION\_OVER\_H\_BAR\_C**

```
float pycodata.U_NEWTONIAN_CONSTANT_OF_GRAVITATION_OVER_H_BAR_C = 0.00015e-39
```

Definition at line 760 of file [pycodata.py](#).

**15.2.2.600 U\_NUCLEAR\_MAGNETON**

```
float pycodata.U_NUCLEAR_MAGNETON = 0.0000000015e-27
```

Definition at line 763 of file [pycodata.py](#).

**15.2.2.601 U\_NUCLEAR\_MAGNETON\_IN\_EV\_T**

```
float pycodata.U_NUCLEAR_MAGNETON_IN_EV_T = 0.00000000096e-8
```

Definition at line 766 of file [pycodata.py](#).

**15.2.2.602 U\_NUCLEAR\_MAGNETON\_IN\_INVERSE\_METER\_PER\_TESLA**

```
float pycodata.U_NUCLEAR_MAGNETON_IN_INVERSE_METER_PER_TESLA = 0.00000000078e-2
```

Definition at line 769 of file [pycodata.py](#).

**15.2.2.603 U\_NUCLEAR\_MAGNETON\_IN\_K\_T**

```
float pycodata.U_NUCLEAR_MAGNETON_IN_K_T = 0.0000000011e-4
```

Definition at line 772 of file [pycodata.py](#).

**15.2.2.604 U\_NUCLEAR\_MAGNETON\_IN\_MHZ\_T**

```
float pycodata.U_NUCLEAR_MAGNETON_IN_MHZ_T = 0.0000000023e0
```

Definition at line 775 of file [pycodata.py](#).

**15.2.2.605 U\_PLANCK\_CONSTANT**

```
float pycodata.U_PLANCK_CONSTANT = 0.0e0
```

Definition at line 778 of file [pycodata.py](#).

**15.2.2.606 U\_PLANCK\_CONSTANT\_IN\_EV\_HZ**

```
float pycodata.U_PLANCK_CONSTANT_IN_EV_HZ = 0.0e0
```

Definition at line 781 of file [pycodata.py](#).

**15.2.2.607 U\_PLANCK\_LENGTH**

```
float pycodata.U_PLANCK_LENGTH = 0.000018e-35
```

Definition at line 784 of file [pycodata.py](#).

**15.2.2.608 U\_PLANCK\_MASS**

```
float pycodata.U_PLANCK_MASS = 0.000024e-8
```

Definition at line 787 of file [pycodata.py](#).

**15.2.2.609 U\_PLANCK\_MASS\_ENERGY\_EQUIVALENT\_IN\_GEV**

```
float pycodata.U_PLANCK_MASS_ENERGY_EQUIVALENT_IN_GEV = 0.000014e19
```

Definition at line 790 of file [pycodata.py](#).

**15.2.2.610 U\_PLANCK\_TEMPERATURE**

```
float pycodata.U_PLANCK_TEMPERATURE = 0.000016e32
```

Definition at line 793 of file [pycodata.py](#).

**15.2.2.611 U\_PLANCK\_TIME**

```
float pycodata.U_PLANCK_TIME = 0.000060e-44
```

Definition at line 796 of file [pycodata.py](#).

**15.2.2.612 U\_PROTON\_CHARGE\_TO\_MASS\_QUOTIENT**

```
float pycodata.U_PROTON_CHARGE_TO_MASS_QUOTIENT = 0.0000000029e7
```

Definition at line 799 of file [pycodata.py](#).

**15.2.2.613 U\_PROTON\_COMPTON\_WAVELENGTH**

```
float pycodata.U_PROTON_COMPTON_WAVELENGTH = 0.00000000040e-15
```

Definition at line 802 of file [pycodata.py](#).

**15.2.2.614 U\_PROTON\_ELECTRON\_MASS\_RATIO**

```
float pycodata.U_PROTON_ELECTRON_MASS_RATIO = 0.00000011e0
```

Definition at line 805 of file [pycodata.py](#).



**15.2.2.615 U\_PROTON\_G\_FACTOR**

```
float pycodata.U_PROTON_G_FACTOR = 0.0000000016e0
```

Definition at line 808 of file [pycodata.py](#).

**15.2.2.616 U\_PROTON\_GYROMAG\_RATIO**

```
float pycodata.U_PROTON_GYROMAG_RATIO = 0.0000000011e8
```

Definition at line 811 of file [pycodata.py](#).

**15.2.2.617 U\_PROTON\_GYROMAG\_RATIO\_IN\_MHZ\_T**

```
float pycodata.U_PROTON_GYROMAG_RATIO_IN_MHZ_T = 0.000000018e0
```

Definition at line 814 of file [pycodata.py](#).

**15.2.2.618 U\_PROTON\_MAG\_MOM**

```
float pycodata.U_PROTON_MAG_MOM = 0.00000000060e-26
```

Definition at line 817 of file [pycodata.py](#).

**15.2.2.619 U\_PROTON\_MAG\_MOM\_TO\_BOHR\_MAGNETON\_RATIO**

```
float pycodata.U_PROTON_MAG_MOM_TO_BOHR_MAGNETON_RATIO = 0.00000000046e-3
```

Definition at line 820 of file [pycodata.py](#).

**15.2.2.620 U\_PROTON\_MAG\_MOM\_TO\_NUCLEAR\_MAGNETON\_RATIO**

```
float pycodata.U_PROTON_MAG_MOM_TO_NUCLEAR_MAGNETON_RATIO = 0.00000000082e0
```

Definition at line 823 of file [pycodata.py](#).

**15.2.2.621 U\_PROTON\_MAG\_\_SHIELDING\_CORRECTION**

```
float pycodata.U_PROTON_MAG__SHIELDING_CORRECTION = 0.0011e-5
```

Definition at line 826 of file [pycodata.py](#).

**15.2.2.622 U\_PROTON\_MASS**

```
float pycodata.U_PROTON_MASS = 0.00000000051e-27
```

Definition at line 829 of file [pycodata.py](#).

**15.2.2.623 U\_PROTON\_MASS\_ENERGY\_EQUIVALENT**

```
float pycodata.U_PROTON_MASS_ENERGY_EQUIVALENT = 0.00000000046e-10
```

Definition at line 832 of file [pycodata.py](#).

**15.2.2.624 U\_PROTON\_MASS\_ENERGY\_EQUIVALENT\_IN\_MEV**

```
float pycodata.U_PROTON_MASS_ENERGY_EQUIVALENT_IN_MEV = 0.00000029e0
```

Definition at line 835 of file [pycodata.py](#).

**15.2.2.625 U\_PROTON\_MASS\_IN\_U**

```
float pycodata.U_PROTON_MASS_IN_U = 0.00000000053e0
```

Definition at line 838 of file [pycodata.py](#).

**15.2.2.626 U\_PROTON\_MOLAR\_MASS**

```
float pycodata.U_PROTON_MOLAR_MASS = 0.00000000031e-3
```

Definition at line 841 of file [pycodata.py](#).

**15.2.2.627 U\_PROTON\_MUON\_MASS\_RATIO**

```
float pycodata.U_PROTON_MUON_MASS_RATIO = 0.00000020e0
```

Definition at line 844 of file [pycodata.py](#).

**15.2.2.628 U\_PROTON\_NEUTRON\_MAG\_\_MOM\_\_RATIO**

```
float pycodata.U_PROTON_NEUTRON_MAG__MOM__RATIO = 0.00000034e0
```

Definition at line 847 of file [pycodata.py](#).

**15.2.2.629 U\_PROTON\_NEUTRON\_MASS\_RATIO**

```
float pycodata.U_PROTON_NEUTRON_MASS_RATIO = 0.00000000049e0
```

Definition at line 850 of file [pycodata.py](#).

**15.2.2.630 U\_PROTON\_RELATIVE\_ATOMIC\_MASS**

```
float pycodata.U_PROTON_RELATIVE_ATOMIC_MASS = 0.00000000053e0
```

Definition at line 853 of file [pycodata.py](#).

**15.2.2.631 U\_PROTON\_RMS\_CHARGE\_RADIUS**

```
float pycodata.U_PROTON_RMS_CHARGE_RADIUS = 0.019e-16
```

Definition at line 856 of file [pycodata.py](#).

**15.2.2.632 U\_PROTON\_TAU\_MASS\_RATIO**

```
float pycodata.U_PROTON_TAU_MASS_RATIO = 0.000036e0
```

Definition at line 859 of file [pycodata.py](#).

**15.2.2.633 U\_QUANTUM\_OF\_CIRCULATION**

```
float pycodata.U_QUANTUM_OF_CIRCULATION = 0.0000000011e-4
```

Definition at line 862 of file [pycodata.py](#).

**15.2.2.634 U\_QUANTUM\_OF\_CIRCULATION\_TIMES\_2**

```
float pycodata.U_QUANTUM_OF_CIRCULATION_TIMES_2 = 0.0000000022e-4
```

Definition at line 865 of file [pycodata.py](#).

**15.2.2.635 U\_REDUCED\_COMPTON\_WAVELENGTH**

```
float pycodata.U_REDUCED_COMPTON_WAVELENGTH = 0.0000000012e-13
```

Definition at line 868 of file [pycodata.py](#).

**15.2.2.636 U\_REDUCED\_MUON\_COMPTON\_WAVELENGTH**

```
float pycodata.U_REDUCED_MUON_COMPTON_WAVELENGTH = 0.000000042e-15
```

Definition at line 871 of file [pycodata.py](#).

**15.2.2.637 U\_REDUCED\_NEUTRON\_COMPTON\_WAVELENGTH**

```
float pycodata.U_REDUCED_NEUTRON_COMPTON_WAVELENGTH = 0.0000000012e-16
```

Definition at line 874 of file [pycodata.py](#).

**15.2.2.638 U\_REDUCED\_PLANCK\_CONSTANT**

```
float pycodata.U_REDUCED_PLANCK_CONSTANT = 0.0e0
```

Definition at line 877 of file [pycodata.py](#).

**15.2.2.639 U\_REduced\_PLANCK\_CONSTANT\_IN\_EV\_S**

```
float pycodata.U_REduced_PLANCK_CONSTANT_IN_EV_S = 0.0e0
```

Definition at line 880 of file [pycodata.py](#).

**15.2.2.640 U\_REduced\_PLANCK\_CONSTANT\_TIMES\_C\_IN\_MEV\_FM**

```
float pycodata.U_REduced_PLANCK_CONSTANT_TIMES_C_IN_MEV_FM = 0.0e0
```

Definition at line 883 of file [pycodata.py](#).

**15.2.2.641 U\_REduced\_PROTON\_COMPTON\_WAVELENGTH**

```
float pycodata.U_REduced_PROTON_COMPTON_WAVELENGTH = 0.00000000064e-16
```

Definition at line 886 of file [pycodata.py](#).

**15.2.2.642 U\_REduced\_TAU\_COMPTON\_WAVELENGTH**

```
float pycodata.U_REduced_TAU_COMPTON_WAVELENGTH = 0.000075e-16
```

Definition at line 889 of file [pycodata.py](#).

**15.2.2.643 U\_RYDBERG\_CONSTANT**

```
float pycodata.U_RYDBERG_CONSTANT = 0.000021e0
```

Definition at line 892 of file [pycodata.py](#).

**15.2.2.644 U\_RYDBERG\_CONSTANT\_TIMES\_C\_IN\_HZ**

```
float pycodata.U_RYDBERG_CONSTANT_TIMES_C_IN_HZ = 0.000000000064e15
```

Definition at line 895 of file [pycodata.py](#).

**15.2.2.645 U\_RYDBERG\_CONSTANT\_TIMES\_HC\_IN\_EV**

```
float pycodata.U_RYDBERG_CONSTANT_TIMES_HC_IN_EV = 0.000000000026e0
```

Definition at line 898 of file [pycodata.py](#).

**15.2.2.646 U\_RYDBERG\_CONSTANT\_TIMES\_HC\_IN\_J**

```
float pycodata.U_RYDBERG_CONSTANT_TIMES_HC_IN_J = 0.0000000000042e-18
```

Definition at line 901 of file [pycodata.py](#).

**15.2.2.647 U\_SACKUR\_TETRODE\_CONSTANT\_\_1\_K\_\_100\_KPA**

```
float pycodata.U_SACKUR_TETRODE_CONSTANT__1_K__100_KPA = 0.00000000045e0
```

Definition at line 904 of file [pycodata.py](#).

**15.2.2.648 U\_SACKUR\_TETRODE\_CONSTANT\_\_1\_K\_\_101\_325\_KPA**

```
float pycodata.U_SACKUR_TETRODE_CONSTANT__1_K__101_325_KPA = 0.00000000045e0
```

Definition at line 907 of file [pycodata.py](#).

**15.2.2.649 U\_SECOND\_RADIATION\_CONSTANT**

```
float pycodata.U_SECOND_RADIATION_CONSTANT = 0.0e0
```

Definition at line 910 of file [pycodata.py](#).

**15.2.2.650 U\_SHIELDED\_HELION\_GYROMAG\_\_RATIO**

```
float pycodata.U_SHIELDED_HELION_GYROMAG__RATIO = 0.000000024e8
```

Definition at line 913 of file [pycodata.py](#).

**15.2.2.651 U\_SHIELDED\_HELION\_GYROMAG\_\_RATIO\_IN\_MHZ\_T**

```
float pycodata.U_SHIELDED_HELION_GYROMAG__RATIO_IN_MHZ_T = 0.00000038e0
```

Definition at line 916 of file [pycodata.py](#).

**15.2.2.652 U\_SHIELDED\_HELION\_MAG\_\_MOM**

```
float pycodata.U_SHIELDED_HELION_MAG__MOM = 0.000000013e-26
```

Definition at line 919 of file [pycodata.py](#).

**15.2.2.653 U\_SHIELDED\_HELION\_MAG\_\_MOM\_\_TO\_BOHR\_MAGNETON\_RATIO**

```
float pycodata.U_SHIELDED_HELION_MAG__MOM__TO_BOHR_MAGNETON_RATIO = 0.000000014e-3
```

Definition at line 922 of file [pycodata.py](#).

**15.2.2.654 U\_SHIELDED\_HELION\_MAG\_\_MOM\_\_TO\_NUCLEAR\_MAGNETON\_RATIO**

```
float pycodata.U_SHIELDED_HELION_MAG__MOM__TO_NUCLEAR_MAGNETON_RATIO = 0.000000025e0
```

Definition at line 925 of file [pycodata.py](#).

**15.2.2.655 U\_SHIELDED\_HELION\_TO\_PROTON\_MAG\_\_MOM\_\_RATIO**

```
float pycodata.U_SHIELDED_HELION_TO_PROTON_MAG__MOM__RATIO = 0.0000000089e0
```

Definition at line 928 of file [pycodata.py](#).

**15.2.2.656 U\_SHIELDED\_HELION\_TO\_SHIELDED\_PROTON\_MAG\_\_MOM\_\_RATIO**

```
float pycodata.U_SHIELDED_HELION_TO_SHIELDED_PROTON_MAG__MOM__RATIO = 0.0000000033e0
```

Definition at line 931 of file [pycodata.py](#).

**15.2.2.657 U\_SHIELDED\_PROTON\_GYROMAG\_\_RATIO**

```
float pycodata.U_SHIELDED_PROTON_GYROMAG__RATIO = 0.000000029e8
```

Definition at line 934 of file [pycodata.py](#).

**15.2.2.658 U\_SHIELDED\_PROTON\_GYROMAG\_\_RATIO\_IN\_MHZ\_T**

```
float pycodata.U_SHIELDED_PROTON_GYROMAG__RATIO_IN_MHZ_T = 0.00000046e0
```

Definition at line 937 of file [pycodata.py](#).

**15.2.2.659 U\_SHIELDED\_PROTON\_MAG\_\_MOM**

```
float pycodata.U_SHIELDED_PROTON_MAG__MOM = 0.000000015e-26
```

Definition at line 940 of file [pycodata.py](#).

**15.2.2.660 U\_SHIELDED\_PROTON\_MAG\_\_MOM\_\_TO\_BOHR\_MAGNETON\_RATIO**

```
float pycodata.U_SHIELDED_PROTON_MAG__MOM__TO_BOHR_MAGNETON_RATIO = 0.000000017e-3
```

Definition at line 943 of file [pycodata.py](#).

**15.2.2.661 U\_SHIELDED\_PROTON\_MAG\_\_MOM\_\_TO\_NUCLEAR\_MAGNETON\_RATIO**

```
float pycodata.U_SHIELDED_PROTON_MAG__MOM__TO_NUCLEAR_MAGNETON_RATIO = 0.000000030e0
```

Definition at line 946 of file [pycodata.py](#).

**15.2.2.662 U\_SHIELDING\_DIFFERENCE\_OF\_D\_AND\_P\_IN\_HD**

```
float pycodata.U_SHIELDING_DIFFERENCE_OF_D_AND_P_IN_HD = 0.0020e-8
```

Definition at line 949 of file [pycodata.py](#).



**15.2.2.663 U\_SHIELDING\_DIFFERENCE\_OF\_T\_AND\_P\_IN\_HT**

```
float pycodata.U_SHIELDING_DIFFERENCE_OF_T_AND_P_IN_HT = 0.0020e-8
```

Definition at line 952 of file [pycodata.py](#).

**15.2.2.664 U\_SPEED\_OF\_LIGHT\_IN\_VACUUM**

```
float pycodata.U_SPEED_OF_LIGHT_IN_VACUUM = 0.0e0
```

Definition at line 955 of file [pycodata.py](#).

**15.2.2.665 U\_STANDARD\_ACCELERATION\_OF\_GRAVITY**

```
float pycodata.U_STANDARD_ACCELERATION_OF_GRAVITY = 0.0e0
```

Definition at line 958 of file [pycodata.py](#).

**15.2.2.666 U\_STANDARD\_ATMOSPHERE**

```
float pycodata.U_STANDARD_ATMOSPHERE = 0.0e0
```

Definition at line 961 of file [pycodata.py](#).

**15.2.2.667 U\_STANDARD\_STATE\_PRESSURE**

```
float pycodata.U_STANDARD_STATE_PRESSURE = 0.0e0
```

Definition at line 964 of file [pycodata.py](#).

**15.2.2.668 U\_STEFAN\_BOLTZMANN\_CONSTANT**

```
float pycodata.U_STEFAN_BOLTZMANN_CONSTANT = 0.0e0
```

Definition at line 967 of file [pycodata.py](#).

**15.2.2.669 U\_TAU\_COMPTON\_WAVELENGTH**

```
float pycodata.U_TAU_COMPTON_WAVELENGTH = 0.00047e-16
```

Definition at line 970 of file [pycodata.py](#).

**15.2.2.670 U\_TAU\_ELECTRON\_MASS\_RATIO**

```
float pycodata.U_TAU_ELECTRON_MASS_RATIO = 0.23e0
```

Definition at line 973 of file [pycodata.py](#).

**15.2.2.671 U\_TAU\_ENERGY\_EQUIVALENT**

```
float pycodata.U_TAU_ENERGY_EQUIVALENT = 0.12e0
```

Definition at line 976 of file [pycodata.py](#).

**15.2.2.672 U\_TAU\_MASS**

```
float pycodata.U_TAU_MASS = 0.00021e-27
```

Definition at line 979 of file [pycodata.py](#).

**15.2.2.673 U\_TAU\_MASS\_ENERGY\_EQUIVALENT**

```
float pycodata.U_TAU_MASS_ENERGY_EQUIVALENT = 0.00019e-10
```

Definition at line 982 of file [pycodata.py](#).

**15.2.2.674 U\_TAU\_MASS\_IN\_U**

```
float pycodata.U_TAU_MASS_IN_U = 0.00013e0
```

Definition at line 985 of file [pycodata.py](#).

**15.2.2.675 U\_TAU\_MOLAR\_MASS**

```
float pycodata.U_TAU_MOLAR_MASS = 0.00013e-3
```

Definition at line 988 of file [pycodata.py](#).

**15.2.2.676 U\_TAU\_MUON\_MASS\_RATIO**

```
float pycodata.U_TAU_MUON_MASS_RATIO = 0.0011e0
```

Definition at line 991 of file [pycodata.py](#).

**15.2.2.677 U\_TAU\_NEUTRON\_MASS\_RATIO**

```
float pycodata.U_TAU_NEUTRON_MASS_RATIO = 0.00013e0
```

Definition at line 994 of file [pycodata.py](#).

**15.2.2.678 U\_TAU\_PROTON\_MASS\_RATIO**

```
float pycodata.U_TAU_PROTON_MASS_RATIO = 0.00013e0
```

Definition at line 997 of file [pycodata.py](#).

**15.2.2.679 U\_THOMSON\_CROSS\_SECTION**

```
float pycodata.U_THOMSON_CROSS_SECTION = 0.0000000060e-29
```

Definition at line 1000 of file [pycodata.py](#).

**15.2.2.680 U\_TRITON\_ELECTRON\_MASS\_RATIO**

```
float pycodata.U_TRITON_ELECTRON_MASS_RATIO = 0.00000027e0
```

Definition at line 1003 of file [pycodata.py](#).

**15.2.2.681 U\_TRITON\_G\_FACTOR**

```
float pycodata.U_TRITON_G_FACTOR = 0.000000012e0
```

Definition at line 1006 of file [pycodata.py](#).

**15.2.2.682 U\_TRITON\_MAG\_\_MOM**

```
float pycodata.U_TRITON_MAG__MOM = 0.0000000030e-26
```

Definition at line 1009 of file [pycodata.py](#).

**15.2.2.683 U\_TRITON\_MAG\_\_MOM\_\_TO\_BOHR\_MAGNETON\_RATIO**

```
float pycodata.U_TRITON_MAG__MOM__TO_BOHR_MAGNETON_RATIO = 0.0000000032e-3
```

Definition at line 1012 of file [pycodata.py](#).

**15.2.2.684 U\_TRITON\_MAG\_\_MOM\_\_TO\_NUCLEAR\_MAGNETON\_RATIO**

```
float pycodata.U_TRITON_MAG__MOM__TO_NUCLEAR_MAGNETON_RATIO = 0.0000000059e0
```

Definition at line 1015 of file [pycodata.py](#).

**15.2.2.685 U\_TRITON\_MASS**

```
float pycodata.U_TRITON_MASS = 0.0000000015e-27
```

Definition at line 1018 of file [pycodata.py](#).

**15.2.2.686 U\_TRITON\_MASS\_ENERGY\_EQUIVALENT**

```
float pycodata.U_TRITON_MASS_ENERGY_EQUIVALENT = 0.0000000014e-10
```

Definition at line 1021 of file [pycodata.py](#).

**15.2.2.687 U\_TRITON\_MASS\_ENERGY\_EQUIVALENT\_IN\_MEV**

```
float pycodata.U_TRITON_MASS_ENERGY_EQUIVALENT_IN_MEV = 0.00000085e0
```

Definition at line 1024 of file [pycodata.py](#).

**15.2.2.688 U\_TRITON\_MASS\_IN\_U**

```
float pycodata.U_TRITON_MASS_IN_U = 0.00000000012e0
```

Definition at line 1027 of file [pycodata.py](#).

**15.2.2.689 U\_TRITON\_MOLAR\_MASS**

```
float pycodata.U_TRITON_MOLAR_MASS = 0.00000000092e-3
```

Definition at line 1030 of file [pycodata.py](#).

**15.2.2.690 U\_TRITON\_PROTON\_MASS\_RATIO**

```
float pycodata.U_TRITON_PROTON_MASS_RATIO = 0.00000000015e0
```

Definition at line 1033 of file [pycodata.py](#).

**15.2.2.691 U\_TRITON\_RELATIVE\_ATOMIC\_MASS**

```
float pycodata.U_TRITON_RELATIVE_ATOMIC_MASS = 0.00000000012e0
```

Definition at line 1036 of file [pycodata.py](#).

**15.2.2.692 U\_TRITON\_TO\_PROTON\_MAG\_\_MOM\_\_RATIO**

```
float pycodata.U_TRITON_TO_PROTON_MAG__MOM__RATIO = 0.0000000021e0
```

Definition at line 1039 of file [pycodata.py](#).

**15.2.2.693 U\_UNIFIED\_ATOMIC\_MASS\_UNIT**

```
float pycodata.U_UNIFIED_ATOMIC_MASS_UNIT = 0.00000000050e-27
```

Definition at line [1042](#) of file [pycodata.py](#).

**15.2.2.694 U\_VACUUM\_ELECTRIC\_PERMITTIVITY**

```
float pycodata.U_VACUUM_ELECTRIC_PERMITTIVITY = 0.0000000013e-12
```

Definition at line [1045](#) of file [pycodata.py](#).

**15.2.2.695 U\_VACUUM\_MAG\_\_PERMEABILITY**

```
float pycodata.U_VACUUM_MAG__PERMEABILITY = 0.00000000019e-6
```

Definition at line [1048](#) of file [pycodata.py](#).

**15.2.2.696 U\_VON\_KLITZING\_CONSTANT**

```
float pycodata.U_VON_KLITZING_CONSTANT = 0.0e0
```

Definition at line [1051](#) of file [pycodata.py](#).

**15.2.2.697 U\_W\_TO\_Z\_MASS\_RATIO**

```
float pycodata.U_W_TO_Z_MASS_RATIO = 0.00017e0
```

Definition at line [1063](#) of file [pycodata.py](#).

**15.2.2.698 U\_WEAK\_MIXING\_ANGLE**

```
float pycodata.U_WEAK_MIXING_ANGLE = 0.00030e0
```

Definition at line [1054](#) of file [pycodata.py](#).

**15.2.2.699 U\_WIEN\_FREQUENCY\_DISPLACEMENT\_LAW\_CONSTANT**

```
float pycodata.U_WIEN_FREQUENCY_DISPLACEMENT_LAW_CONSTANT = 0.0e0
```

Definition at line [1057](#) of file [pycodata.py](#).

**15.2.2.700 U\_WIEN\_WAVELENGTH\_DISPLACEMENT\_LAW\_CONSTANT**

```
float pycodata.U_WIEN_WAVELENGTH_DISPLACEMENT_LAW_CONSTANT = 0.0e0
```

Definition at line [1060](#) of file [pycodata.py](#).

**15.2.2.701 UNIFIED\_ATOMIC\_MASS\_UNIT**

```
float pycodata.UNIFIED_ATOMIC_MASS_UNIT = 1.66053906660e-27
```

Definition at line [1041](#) of file [pycodata.py](#).

**15.2.2.702 VACUUM\_ELECTRIC\_PERMITTIVITY**

```
float pycodata.VACUUM_ELECTRIC_PERMITTIVITY = 8.8541878128e-12
```

Definition at line [1044](#) of file [pycodata.py](#).

**15.2.2.703 VACUUM\_MAG\_\_PERMEABILITY**

```
float pycodata.VACUUM_MAG__PERMEABILITY = 1.25663706212e-6
```

Definition at line [1047](#) of file [pycodata.py](#).

**15.2.2.704 VON\_KLITZING\_CONSTANT**

```
float pycodata.VON_KLITZING_CONSTANT = 25812.80745e0
```

Definition at line [1050](#) of file [pycodata.py](#).

**15.2.2.705 W\_TO\_Z\_MASS\_RATIO**

```
float pycodata.W_TO_Z_MASS_RATIO = 0.88153e0
```

Definition at line [1062](#) of file [pycodata.py](#).

**15.2.2.706 WEAK\_MIXING\_ANGLE**

```
float pycodata.WEAK_MIXING_ANGLE = 0.22290e0
```

Definition at line [1053](#) of file [pycodata.py](#).

**15.2.2.707 WIEN\_FREQUENCY\_DISPLACEMENT\_LAW\_CONSTANT**

```
float pycodata.WIEN_FREQUENCY_DISPLACEMENT_LAW_CONSTANT = 5.878925757e10
```

Definition at line [1056](#) of file [pycodata.py](#).

**15.2.2.708 WIEN\_WAVELENGTH\_DISPLACEMENT\_LAW\_CONSTANT**

```
float pycodata.WIEN_WAVELENGTH_DISPLACEMENT_LAW_CONSTANT = 2.897771955e-3
```

Definition at line [1059](#) of file [pycodata.py](#).



## Chapter 16

# Data Type Documentation

### 16.1 `codata_file_props` Struct Reference

Properties of the file for the codata raw data.

#### Data Fields

- `size_t` [n](#)
- `size_t` [index\\_header\\_end](#)
- `char` [codata\\_path](#) [18]
- `char` [year](#) [5]
- `char` [fmodule\\_path](#) [18]

#### 16.1.1 Detailed Description

Properties of the file for the codata raw data.

Definition at line [18](#) of file [generator.c](#).

#### 16.1.2 Field Documentation

##### 16.1.2.1 `codata_path`

```
char codata_file_props::codata_path[18]
```

Filepath to the raw codata constants.

Definition at line [21](#) of file [generator.c](#).

#### 16.1.2.2 fmodule\_path

```
char codata_file_props::fmodule_path[18]
```

Filepath of the generated Fortran module.

Definition at line 23 of file [generator.c](#).

#### 16.1.2.3 index\_header\_end

```
size_t codata_file_props::index_header_end
```

Number of lines for the header.

Definition at line 20 of file [generator.c](#).

#### 16.1.2.4 n

```
size_t codata_file_props::n
```

Number of lines.

Definition at line 19 of file [generator.c](#).

#### 16.1.2.5 year

```
char codata_file_props::year[5]
```

Year of release of the codata constants.

Definition at line 22 of file [generator.c](#).

The documentation for this struct was generated from the following file:

- [/Users/milan/programs/codata/src/generator.c](#)

## Chapter 17

# File Documentation

**17.1** [getting\\_started/install.md](#) File Reference

**17.2** [getting\\_started/license.md](#) File Reference

**17.3** [getting\\_started/requirements.md](#) File Reference

**17.4** [releases/0.1.0-notes.md](#) File Reference

**17.5** [releases/0.2.0-notes.md](#) File Reference

**17.6** [releases/0.2.1-notes.md](#) File Reference

**17.7** [releases/0.3.0-notes.md](#) File Reference

**17.8** [releases/0.4.0-notes.md](#) File Reference

**17.9** [releases/0.5.0-notes.md](#) File Reference

**17.10** [releases/0.6.0-notes.md](#) File Reference

**17.11** [/Users/milan/programs/codata/README.md](#) File Reference

**17.12** [/Users/milan/programs/codata/src/ccodata.h](#) File Reference

Codata module - autogenerated.

## Variables

- const double ALPHA\_PARTICLE\_ELECTRON\_MASS\_RATIO =7294.29954142e0
- const double U\_ALPHA\_PARTICLE\_ELECTRON\_MASS\_RATIO =0.00000024e0
- const double ALPHA\_PARTICLE\_MASS =6.6446573357e-27
- const double U\_ALPHA\_PARTICLE\_MASS =0.0000000020e-27
- const double ALPHA\_PARTICLE\_MASS\_ENERGY\_EQUIVALENT =5.9719201914e-10
- const double U\_ALPHA\_PARTICLE\_MASS\_ENERGY\_EQUIVALENT =0.0000000018e-10
- const double ALPHA\_PARTICLE\_MASS\_ENERGY\_EQUIVALENT\_IN\_MEV =3727.3794066e0
- const double U\_ALPHA\_PARTICLE\_MASS\_ENERGY\_EQUIVALENT\_IN\_MEV =0.0000011e0
- const double ALPHA\_PARTICLE\_MASS\_IN\_U =4.001506179127e0
- const double U\_ALPHA\_PARTICLE\_MASS\_IN\_U =0.000000000063e0
- const double ALPHA\_PARTICLE\_MOLAR\_MASS =4.0015061777e-3
- const double U\_ALPHA\_PARTICLE\_MOLAR\_MASS =0.0000000012e-3
- const double ALPHA\_PARTICLE\_PROTON\_MASS\_RATIO =3.97259969009e0
- const double U\_ALPHA\_PARTICLE\_PROTON\_MASS\_RATIO =0.00000000022e0
- const double ALPHA\_PARTICLE\_RELATIVE\_ATOMIC\_MASS =4.001506179127e0
- const double U\_ALPHA\_PARTICLE\_RELATIVE\_ATOMIC\_MASS =0.000000000063e0
- const double ANGSTROM\_STAR =1.00001495e-10
- const double U\_ANGSTROM\_STAR =0.00000090e-10
- const double ATOMIC\_MASS\_CONSTANT =1.66053906660e-27
- const double U\_ATOMIC\_MASS\_CONSTANT =0.00000000050e-27
- const double ATOMIC\_MASS\_CONSTANT\_ENERGY\_EQUIVALENT =1.49241808560e-10
- const double U\_ATOMIC\_MASS\_CONSTANT\_ENERGY\_EQUIVALENT =0.00000000045e-10
- const double ATOMIC\_MASS\_CONSTANT\_ENERGY\_EQUIVALENT\_IN\_MEV =931.49410242e0
- const double U\_ATOMIC\_MASS\_CONSTANT\_ENERGY\_EQUIVALENT\_IN\_MEV =0.00000028e0
- const double ATOMIC\_MASS\_UNIT\_ELECTRON\_VOLT\_RELATIONSHIP =9.3149410242e8
- const double U\_ATOMIC\_MASS\_UNIT\_ELECTRON\_VOLT\_RELATIONSHIP =0.0000000028e8
- const double ATOMIC\_MASS\_UNIT\_HARTREE\_RELATIONSHIP =3.4231776874e7
- const double U\_ATOMIC\_MASS\_UNIT\_HARTREE\_RELATIONSHIP =0.0000000010e7
- const double ATOMIC\_MASS\_UNIT\_HERTZ\_RELATIONSHIP =2.25234271871e23
- const double U\_ATOMIC\_MASS\_UNIT\_HERTZ\_RELATIONSHIP =0.00000000068e23
- const double ATOMIC\_MASS\_UNIT\_INVERSE\_METER\_RELATIONSHIP =7.5130066104e14
- const double U\_ATOMIC\_MASS\_UNIT\_INVERSE\_METER\_RELATIONSHIP =0.0000000023e14
- const double ATOMIC\_MASS\_UNIT\_JOULE\_RELATIONSHIP =1.49241808560e-10
- const double U\_ATOMIC\_MASS\_UNIT\_JOULE\_RELATIONSHIP =0.00000000045e-10
- const double ATOMIC\_MASS\_UNIT\_KELVIN\_RELATIONSHIP =1.08095401916e13
- const double U\_ATOMIC\_MASS\_UNIT\_KELVIN\_RELATIONSHIP =0.00000000033e13
- const double ATOMIC\_MASS\_UNIT\_KILOGRAM\_RELATIONSHIP =1.66053906660e-27
- const double U\_ATOMIC\_MASS\_UNIT\_KILOGRAM\_RELATIONSHIP =0.00000000050e-27
- const double ATOMIC\_UNIT\_OF\_1ST\_HYPERPOLARIZABILITY =3.2063613061e-53
- const double U\_ATOMIC\_UNIT\_OF\_1ST\_HYPERPOLARIZABILITY =0.0000000015e-53
- const double ATOMIC\_UNIT\_OF\_2ND\_HYPERPOLARIZABILITY =6.2353799905e-65
- const double U\_ATOMIC\_UNIT\_OF\_2ND\_HYPERPOLARIZABILITY =0.0000000038e-65
- const double ATOMIC\_UNIT\_OF\_ACTION =1.054571817e-34
- const double U\_ATOMIC\_UNIT\_OF\_ACTION =0.0e0
- const double ATOMIC\_UNIT\_OF\_CHARGE =1.602176634e-19
- const double U\_ATOMIC\_UNIT\_OF\_CHARGE =0.0e0
- const double ATOMIC\_UNIT\_OF\_CHARGE\_DENSITY =1.08120238457e12
- const double U\_ATOMIC\_UNIT\_OF\_CHARGE\_DENSITY =0.00000000049e12
- const double ATOMIC\_UNIT\_OF\_CURRENT =6.623618237510e-3
- const double U\_ATOMIC\_UNIT\_OF\_CURRENT =0.000000000013e-3
- const double ATOMIC\_UNIT\_OF\_ELECTRIC\_DIPOLE\_MOM =8.4783536255e-30
- const double U\_ATOMIC\_UNIT\_OF\_ELECTRIC\_DIPOLE\_MOM =0.0000000013e-30
- const double ATOMIC\_UNIT\_OF\_ELECTRIC\_FIELD =5.14220674763e11

- const double `U_ATOMIC_UNIT_OF_ELECTRIC_FIELD` =0.00000000078e11
- const double `ATOMIC_UNIT_OF_ELECTRIC_FIELD_GRADIENT` =9.7173624292e21
- const double `U_ATOMIC_UNIT_OF_ELECTRIC_FIELD_GRADIENT` =0.0000000029e21
- const double `ATOMIC_UNIT_OF_ELECTRIC_POLARIZABILITY` =1.64877727436e-41
- const double `U_ATOMIC_UNIT_OF_ELECTRIC_POLARIZABILITY` =0.00000000050e-41
- const double `ATOMIC_UNIT_OF_ELECTRIC_POTENTIAL` =27.211386245988e0
- const double `U_ATOMIC_UNIT_OF_ELECTRIC_POTENTIAL` =0.000000000053e0
- const double `ATOMIC_UNIT_OF_ELECTRIC_QUADRUPOLE_MOM` =4.4865515246e-40
- const double `U_ATOMIC_UNIT_OF_ELECTRIC_QUADRUPOLE_MOM` =0.0000000014e-40
- const double `ATOMIC_UNIT_OF_ENERGY` =4.3597447222071e-18
- const double `U_ATOMIC_UNIT_OF_ENERGY` =0.000000000085e-18
- const double `ATOMIC_UNIT_OF_FORCE` =8.2387234983e-8
- const double `U_ATOMIC_UNIT_OF_FORCE` =0.0000000012e-8
- const double `ATOMIC_UNIT_OF_LENGTH` =5.29177210903e-11
- const double `U_ATOMIC_UNIT_OF_LENGTH` =0.00000000080e-11
- const double `ATOMIC_UNIT_OF_MAG_DIPOLE_MOM` =1.85480201566e-23
- const double `U_ATOMIC_UNIT_OF_MAG_DIPOLE_MOM` =0.00000000056e-23
- const double `ATOMIC_UNIT_OF_MAG_FLUX_DENSITY` =2.35051756758e5
- const double `U_ATOMIC_UNIT_OF_MAG_FLUX_DENSITY` =0.00000000071e5
- const double `ATOMIC_UNIT_OF_MAGNETIZABILITY` =7.8910366008e-29
- const double `U_ATOMIC_UNIT_OF_MAGNETIZABILITY` =0.0000000048e-29
- const double `ATOMIC_UNIT_OF_MASS` =9.1093837015e-31
- const double `U_ATOMIC_UNIT_OF_MASS` =0.0000000028e-31
- const double `ATOMIC_UNIT_OF_MOMENTUM` =1.99285191410e-24
- const double `U_ATOMIC_UNIT_OF_MOMENTUM` =0.00000000030e-24
- const double `ATOMIC_UNIT_OF_PERMITTIVITY` =1.11265005545e-10
- const double `U_ATOMIC_UNIT_OF_PERMITTIVITY` =0.00000000017e-10
- const double `ATOMIC_UNIT_OF_TIME` =2.4188843265857e-17
- const double `U_ATOMIC_UNIT_OF_TIME` =0.000000000047e-17
- const double `ATOMIC_UNIT_OF_VELOCITY` =2.18769126364e6
- const double `U_ATOMIC_UNIT_OF_VELOCITY` =0.00000000033e6
- const double `AVOGADRO_CONSTANT` =6.02214076e23
- const double `U_AVOGADRO_CONSTANT` =0.0e0
- const double `BOHR_MAGNETON` =9.2740100783e-24
- const double `U_BOHR_MAGNETON` =0.0000000028e-24
- const double `BOHR_MAGNETON_IN_EV_T` =5.7883818060e-5
- const double `U_BOHR_MAGNETON_IN_EV_T` =0.0000000017e-5
- const double `BOHR_MAGNETON_IN_HZ_T` =1.39962449361e10
- const double `U_BOHR_MAGNETON_IN_HZ_T` =0.00000000042e10
- const double `BOHR_MAGNETON_IN_INVERSE_METER_PER_TESLA` =46.686447783e0
- const double `U_BOHR_MAGNETON_IN_INVERSE_METER_PER_TESLA` =0.000000014e0
- const double `BOHR_MAGNETON_IN_K_T` =0.67171381563e0
- const double `U_BOHR_MAGNETON_IN_K_T` =0.00000000020e0
- const double `BOHR_RADIUS` =5.29177210903e-11
- const double `U_BOHR_RADIUS` =0.00000000080e-11
- const double `BOLTZMANN_CONSTANT` =1.380649e-23
- const double `U_BOLTZMANN_CONSTANT` =0.0e0
- const double `BOLTZMANN_CONSTANT_IN_EV_K` =8.617333262e-5
- const double `U_BOLTZMANN_CONSTANT_IN_EV_K` =0.0e0
- const double `BOLTZMANN_CONSTANT_IN_HZ_K` =2.083661912e10
- const double `U_BOLTZMANN_CONSTANT_IN_HZ_K` =0.0e0
- const double `BOLTZMANN_CONSTANT_IN_INVERSE_METER_PER_KELVIN` =69.50348004e0
- const double `U_BOLTZMANN_CONSTANT_IN_INVERSE_METER_PER_KELVIN` =0.0e0
- const double `CHARACTERISTIC_IMPEDANCE_OF_VACUUM` =376.730313668e0
- const double `U_CHARACTERISTIC_IMPEDANCE_OF_VACUUM` =0.000000057e0

- const double CLASSICAL\_ELECTRON\_RADIUS =2.8179403262e-15
- const double U\_CLASSICAL\_ELECTRON\_RADIUS =0.0000000013e-15
- const double COMPTON\_WAVELENGTH =2.42631023867e-12
- const double U\_COMPTON\_WAVELENGTH =0.00000000073e-12
- const double CONDUCTANCE\_QUANTUM =7.748091729e-5
- const double U\_CONDUCTANCE\_QUANTUM =0.0e0
- const double CONVENTIONAL\_VALUE\_OF\_AMPERE\_90 =1.00000008887e0
- const double U\_CONVENTIONAL\_VALUE\_OF\_AMPERE\_90 =0.0e0
- const double CONVENTIONAL\_VALUE\_OF\_COULOMB\_90 =1.00000008887e0
- const double U\_CONVENTIONAL\_VALUE\_OF\_COULOMB\_90 =0.0e0
- const double CONVENTIONAL\_VALUE\_OF\_FARAD\_90 =0.99999998220e0
- const double U\_CONVENTIONAL\_VALUE\_OF\_FARAD\_90 =0.0e0
- const double CONVENTIONAL\_VALUE\_OF\_HENRY\_90 =1.00000001779e0
- const double U\_CONVENTIONAL\_VALUE\_OF\_HENRY\_90 =0.0e0
- const double CONVENTIONAL\_VALUE\_OF\_JOSEPHSON\_CONSTANT =483597.9e9
- const double U\_CONVENTIONAL\_VALUE\_OF\_JOSEPHSON\_CONSTANT =0.0e0
- const double CONVENTIONAL\_VALUE\_OF\_OHM\_90 =1.00000001779e0
- const double U\_CONVENTIONAL\_VALUE\_OF\_OHM\_90 =0.0e0
- const double CONVENTIONAL\_VALUE\_OF\_VOLT\_90 =1.00000010666e0
- const double U\_CONVENTIONAL\_VALUE\_OF\_VOLT\_90 =0.0e0
- const double CONVENTIONAL\_VALUE\_OF\_VON\_KLITZING\_CONSTANT =25812.807e0
- const double U\_CONVENTIONAL\_VALUE\_OF\_VON\_KLITZING\_CONSTANT =0.0e0
- const double CONVENTIONAL\_VALUE\_OF\_WATT\_90 =1.00000019553e0
- const double U\_CONVENTIONAL\_VALUE\_OF\_WATT\_90 =0.0e0
- const double COPPER\_X\_UNIT =1.00207697e-13
- const double U\_COPPER\_X\_UNIT =0.00000028e-13
- const double DEUTERON\_ELECTRON\_MAG\_MOM\_RATIO =-4.664345551e-4
- const double U\_DEUTERON\_ELECTRON\_MAG\_MOM\_RATIO =0.000000012e-4
- const double DEUTERON\_ELECTRON\_MASS\_RATIO =3670.48296788e0
- const double U\_DEUTERON\_ELECTRON\_MASS\_RATIO =0.00000013e0
- const double DEUTERON\_G\_FACTOR =0.8574382338e0
- const double U\_DEUTERON\_G\_FACTOR =0.0000000022e0
- const double DEUTERON\_MAG\_MOM =4.330735094e-27
- const double U\_DEUTERON\_MAG\_MOM =0.000000011e-27
- const double DEUTERON\_MAG\_MOM\_TO\_BOHR\_MAGNETON\_RATIO =4.669754570e-4
- const double U\_DEUTERON\_MAG\_MOM\_TO\_BOHR\_MAGNETON\_RATIO =0.000000012e-4
- const double DEUTERON\_MAG\_MOM\_TO\_NUCLEAR\_MAGNETON\_RATIO =0.8574382338e0
- const double U\_DEUTERON\_MAG\_MOM\_TO\_NUCLEAR\_MAGNETON\_RATIO =0.0000000022e0
- const double DEUTERON\_MASS =3.3435837724e-27
- const double U\_DEUTERON\_MASS =0.0000000010e-27
- const double DEUTERON\_MASS\_ENERGY\_EQUIVALENT =3.00506323102e-10
- const double U\_DEUTERON\_MASS\_ENERGY\_EQUIVALENT =0.00000000091e-10
- const double DEUTERON\_MASS\_ENERGY\_EQUIVALENT\_IN\_MEV =1875.61294257e0
- const double U\_DEUTERON\_MASS\_ENERGY\_EQUIVALENT\_IN\_MEV =0.00000057e0
- const double DEUTERON\_MASS\_IN\_U =2.013553212745e0
- const double U\_DEUTERON\_MASS\_IN\_U =0.00000000040e0
- const double DEUTERON\_MOLAR\_MASS =2.01355321205e-3
- const double U\_DEUTERON\_MOLAR\_MASS =0.00000000061e-3
- const double DEUTERON\_NEUTRON\_MAG\_MOM\_RATIO =-0.44820653e0
- const double U\_DEUTERON\_NEUTRON\_MAG\_MOM\_RATIO =0.00000011e0
- const double DEUTERON\_PROTON\_MAG\_MOM\_RATIO =0.30701220939e0
- const double U\_DEUTERON\_PROTON\_MAG\_MOM\_RATIO =0.00000000079e0
- const double DEUTERON\_PROTON\_MASS\_RATIO =1.99900750139e0
- const double U\_DEUTERON\_PROTON\_MASS\_RATIO =0.00000000011e0
- const double DEUTERON\_RELATIVE\_ATOMIC\_MASS =2.013553212745e0

- const double `U_DEUTERON_RELATIVE_ATOMIC_MASS` =0.000000000040e0
- const double `DEUTERON_RMS_CHARGE_RADIUS` =2.12799e-15
- const double `U_DEUTERON_RMS_CHARGE_RADIUS` =0.00074e-15
- const double `ELECTRON_CHARGE_TO_MASS_QUOTIENT` =-1.75882001076e11
- const double `U_ELECTRON_CHARGE_TO_MASS_QUOTIENT` =0.000000000053e11
- const double `ELECTRON_DEUTERON_MAG_MOM_RATIO` =-2143.9234915e0
- const double `U_ELECTRON_DEUTERON_MAG_MOM_RATIO` =0.0000056e0
- const double `ELECTRON_DEUTERON_MASS_RATIO` =2.724437107462e-4
- const double `U_ELECTRON_DEUTERON_MASS_RATIO` =0.000000000096e-4
- const double `ELECTRON_G_FACTOR` =-2.00231930436256e0
- const double `U_ELECTRON_G_FACTOR` =0.0000000000035e0
- const double `ELECTRON_GYROMAG_RATIO` =1.76085963023e11
- const double `U_ELECTRON_GYROMAG_RATIO` =0.000000000053e11
- const double `ELECTRON_GYROMAG_RATIO_IN_MHZ_T` =28024.9514242e0
- const double `U_ELECTRON_GYROMAG_RATIO_IN_MHZ_T` =0.0000085e0
- const double `ELECTRON_HELION_MASS_RATIO` =1.819543074573e-4
- const double `U_ELECTRON_HELION_MASS_RATIO` =0.000000000079e-4
- const double `ELECTRON_MAG_MOM` =-9.2847647043e-24
- const double `U_ELECTRON_MAG_MOM` =0.0000000028e-24
- const double `ELECTRON_MAG_MOM_ANOMALY` =1.15965218128e-3
- const double `U_ELECTRON_MAG_MOM_ANOMALY` =0.00000000018e-3
- const double `ELECTRON_MAG_MOM_TO_BOHR_MAGNETON_RATIO` =-1.00115965218128e0
- const double `U_ELECTRON_MAG_MOM_TO_BOHR_MAGNETON_RATIO` =0.00000000000018e0
- const double `ELECTRON_MAG_MOM_TO_NUCLEAR_MAGNETON_RATIO` =-1838.28197188e0
- const double `U_ELECTRON_MAG_MOM_TO_NUCLEAR_MAGNETON_RATIO` =0.00000011e0
- const double `ELECTRON_MASS` =9.1093837015e-31
- const double `U_ELECTRON_MASS` =0.0000000028e-31
- const double `ELECTRON_MASS_ENERGY_EQUIVALENT` =8.1871057769e-14
- const double `U_ELECTRON_MASS_ENERGY_EQUIVALENT` =0.0000000025e-14
- const double `ELECTRON_MASS_ENERGY_EQUIVALENT_IN_MEV` =0.51099895000e0
- const double `U_ELECTRON_MASS_ENERGY_EQUIVALENT_IN_MEV` =0.00000000015e0
- const double `ELECTRON_MASS_IN_U` =5.48579909065e-4
- const double `U_ELECTRON_MASS_IN_U` =0.00000000016e-4
- const double `ELECTRON_MOLAR_MASS` =5.4857990888e-7
- const double `U_ELECTRON_MOLAR_MASS` =0.0000000017e-7
- const double `ELECTRON_MUON_MAG_MOM_RATIO` =206.7669883e0
- const double `U_ELECTRON_MUON_MAG_MOM_RATIO` =0.0000046e0
- const double `ELECTRON_MUON_MASS_RATIO` =4.83633169e-3
- const double `U_ELECTRON_MUON_MASS_RATIO` =0.00000011e-3
- const double `ELECTRON_NEUTRON_MAG_MOM_RATIO` =960.92050e0
- const double `U_ELECTRON_NEUTRON_MAG_MOM_RATIO` =0.00023e0
- const double `ELECTRON_NEUTRON_MASS_RATIO` =5.4386734424e-4
- const double `U_ELECTRON_NEUTRON_MASS_RATIO` =0.0000000026e-4
- const double `ELECTRON_PROTON_MAG_MOM_RATIO` =-658.21068789e0
- const double `U_ELECTRON_PROTON_MAG_MOM_RATIO` =0.00000020e0
- const double `ELECTRON_PROTON_MASS_RATIO` =5.44617021487e-4
- const double `U_ELECTRON_PROTON_MASS_RATIO` =0.00000000033e-4
- const double `ELECTRON_RELATIVE_ATOMIC_MASS` =5.48579909065e-4
- const double `U_ELECTRON_RELATIVE_ATOMIC_MASS` =0.00000000016e-4
- const double `ELECTRON_TAU_MASS_RATIO` =2.87585e-4
- const double `U_ELECTRON_TAU_MASS_RATIO` =0.00019e-4
- const double `ELECTRON_TO_ALPHA_PARTICLE_MASS_RATIO` =1.370933554787e-4
- const double `U_ELECTRON_TO_ALPHA_PARTICLE_MASS_RATIO` =0.000000000045e-4
- const double `ELECTRON_TO_SHIELDED_HELION_MAG_MOM_RATIO` =864.058257e0
- const double `U_ELECTRON_TO_SHIELDED_HELION_MAG_MOM_RATIO` =0.000010e0

- const double ELECTRON\_TO\_SHIELDED\_PROTON\_MAG\_MOM\_RATIO =-658.2275971e0
- const double U\_ELECTRON\_TO\_SHIELDED\_PROTON\_MAG\_MOM\_RATIO =0.0000072e0
- const double ELECTRON\_TRITON\_MASS\_RATIO =1.819200062251e-4
- const double U\_ELECTRON\_TRITON\_MASS\_RATIO =0.000000000090e-4
- const double ELECTRON\_VOLT =1.602176634e-19
- const double U\_ELECTRON\_VOLT =0.0e0
- const double ELECTRON\_VOLT\_ATOMIC\_MASS\_UNIT\_RELATIONSHIP =1.07354410233e-9
- const double U\_ELECTRON\_VOLT\_ATOMIC\_MASS\_UNIT\_RELATIONSHIP =0.00000000032e-9
- const double ELECTRON\_VOLT\_HARTREE\_RELATIONSHIP =3.6749322175655e-2
- const double U\_ELECTRON\_VOLT\_HARTREE\_RELATIONSHIP =0.000000000071e-2
- const double ELECTRON\_VOLT\_HERTZ\_RELATIONSHIP =2.417989242e14
- const double U\_ELECTRON\_VOLT\_HERTZ\_RELATIONSHIP =0.0e0
- const double ELECTRON\_VOLT\_INVERSE\_METER\_RELATIONSHIP =8.065543937e5
- const double U\_ELECTRON\_VOLT\_INVERSE\_METER\_RELATIONSHIP =0.0e0
- const double ELECTRON\_VOLT\_JOULE\_RELATIONSHIP =1.602176634e-19
- const double U\_ELECTRON\_VOLT\_JOULE\_RELATIONSHIP =0.0e0
- const double ELECTRON\_VOLT\_KELVIN\_RELATIONSHIP =1.160451812e4
- const double U\_ELECTRON\_VOLT\_KELVIN\_RELATIONSHIP =0.0e0
- const double ELECTRON\_VOLT\_KILOGRAM\_RELATIONSHIP =1.782661921e-36
- const double U\_ELECTRON\_VOLT\_KILOGRAM\_RELATIONSHIP =0.0e0
- const double ELEMENTARY\_CHARGE =1.602176634e-19
- const double U\_ELEMENTARY\_CHARGE =0.0e0
- const double ELEMENTARY\_CHARGE\_OVER\_H\_BAR =1.519267447e15
- const double U\_ELEMENTARY\_CHARGE\_OVER\_H\_BAR =0.0e0
- const double FARADAY\_CONSTANT =96485.33212e0
- const double U\_FARADAY\_CONSTANT =0.0e0
- const double FERMI\_COUPLING\_CONSTANT =1.1663787e-5
- const double U\_FERMI\_COUPLING\_CONSTANT =0.0000006e-5
- const double FINE\_STRUCTURE\_CONSTANT =7.2973525693e-3
- const double U\_FINE\_STRUCTURE\_CONSTANT =0.0000000011e-3
- const double FIRST\_RADIATION\_CONSTANT =3.741771852e-16
- const double U\_FIRST\_RADIATION\_CONSTANT =0.0e0
- const double FIRST\_RADIATION\_CONSTANT\_FOR\_SPECTRAL\_RADIANCE =1.191042972e-16
- const double U\_FIRST\_RADIATION\_CONSTANT\_FOR\_SPECTRAL\_RADIANCE =0.0e0
- const double HARTREE\_ATOMIC\_MASS\_UNIT\_RELATIONSHIP =2.92126232205e-8
- const double U\_HARTREE\_ATOMIC\_MASS\_UNIT\_RELATIONSHIP =0.00000000088e-8
- const double HARTREE\_ELECTRON\_VOLT\_RELATIONSHIP =27.211386245988e0
- const double U\_HARTREE\_ELECTRON\_VOLT\_RELATIONSHIP =0.00000000053e0
- const double HARTREE\_ENERGY =4.3597447222071e-18
- const double U\_HARTREE\_ENERGY =0.000000000085e-18
- const double HARTREE\_ENERGY\_IN\_EV =27.211386245988e0
- const double U\_HARTREE\_ENERGY\_IN\_EV =0.00000000053e0
- const double HARTREE\_HERTZ\_RELATIONSHIP =6.579683920502e15
- const double U\_HARTREE\_HERTZ\_RELATIONSHIP =0.00000000013e15
- const double HARTREE\_INVERSE\_METER\_RELATIONSHIP =2.1947463136320e7
- const double U\_HARTREE\_INVERSE\_METER\_RELATIONSHIP =0.000000000043e7
- const double HARTREE\_JOULE\_RELATIONSHIP =4.3597447222071e-18
- const double U\_HARTREE\_JOULE\_RELATIONSHIP =0.000000000085e-18
- const double HARTREE\_KELVIN\_RELATIONSHIP =3.1577502480407e5
- const double U\_HARTREE\_KELVIN\_RELATIONSHIP =0.000000000061e5
- const double HARTREE\_KILOGRAM\_RELATIONSHIP =4.8508702095432e-35
- const double U\_HARTREE\_KILOGRAM\_RELATIONSHIP =0.000000000094e-35
- const double HELION\_ELECTRON\_MASS\_RATIO =5495.88528007e0
- const double U\_HELION\_ELECTRON\_MASS\_RATIO =0.00000024e0
- const double HELION\_G\_FACTOR =-4.255250615e0



- const double `U_HELION_G_FACTOR` =0.000000050e0
- const double `HELION_MAG_MOM` =-1.074617532e-26
- const double `U_HELION_MAG_MOM` =0.000000013e-26
- const double `HELION_MAG_MOM_TO_BOHR_MAGNETON_RATIO` =-1.158740958e-3
- const double `U_HELION_MAG_MOM_TO_BOHR_MAGNETON_RATIO` =0.000000014e-3
- const double `HELION_MAG_MOM_TO_NUCLEAR_MAGNETON_RATIO` =-2.127625307e0
- const double `U_HELION_MAG_MOM_TO_NUCLEAR_MAGNETON_RATIO` =0.000000025e0
- const double `HELION_MASS` =5.0064127796e-27
- const double `U_HELION_MASS` =0.0000000015e-27
- const double `HELION_MASS_ENERGY_EQUIVALENT` =4.4995394125e-10
- const double `U_HELION_MASS_ENERGY_EQUIVALENT` =0.0000000014e-10
- const double `HELION_MASS_ENERGY_EQUIVALENT_IN_MEV` =2808.39160743e0
- const double `U_HELION_MASS_ENERGY_EQUIVALENT_IN_MEV` =0.00000085e0
- const double `HELION_MASS_IN_U` =3.014932247175e0
- const double `U_HELION_MASS_IN_U` =0.000000000097e0
- const double `HELION_MOLAR_MASS` =3.01493224613e-3
- const double `U_HELION_MOLAR_MASS` =0.00000000091e-3
- const double `HELION_PROTON_MASS_RATIO` =2.99315267167e0
- const double `U_HELION_PROTON_MASS_RATIO` =0.00000000013e0
- const double `HELION_RELATIVE_ATOMIC_MASS` =3.014932247175e0
- const double `U_HELION_RELATIVE_ATOMIC_MASS` =0.000000000097e0
- const double `HELION_SHIELDING_SHIFT` =5.996743e-5
- const double `U_HELION_SHIELDING_SHIFT` =0.000010e-5
- const double `HERTZ_ATOMIC_MASS_UNIT_RELATIONSHIP` =4.4398216652e-24
- const double `U_HERTZ_ATOMIC_MASS_UNIT_RELATIONSHIP` =0.0000000013e-24
- const double `HERTZ_ELECTRON_VOLT_RELATIONSHIP` =4.135667696e-15
- const double `U_HERTZ_ELECTRON_VOLT_RELATIONSHIP` =0.0e0
- const double `HERTZ_HARTREE_RELATIONSHIP` =1.5198298460570e-16
- const double `U_HERTZ_HARTREE_RELATIONSHIP` =0.000000000029e-16
- const double `HERTZ_INVERSE_METER_RELATIONSHIP` =3.335640951e-9
- const double `U_HERTZ_INVERSE_METER_RELATIONSHIP` =0.0e0
- const double `HERTZ_JOULE_RELATIONSHIP` =6.62607015e-34
- const double `U_HERTZ_JOULE_RELATIONSHIP` =0.0e0
- const double `HERTZ_KELVIN_RELATIONSHIP` =4.799243073e-11
- const double `U_HERTZ_KELVIN_RELATIONSHIP` =0.0e0
- const double `HERTZ_KILOGRAM_RELATIONSHIP` =7.372497323e-51
- const double `U_HERTZ_KILOGRAM_RELATIONSHIP` =0.0e0
- const double `HYPERFINE_TRANSITION_FREQUENCY_OF_CS_133` =9192631770.0e0
- const double `U_HYPERFINE_TRANSITION_FREQUENCY_OF_CS_133` =0.0e0
- const double `INVERSE_FINE_STRUCTURE_CONSTANT` =137.035999084e0
- const double `U_INVERSE_FINE_STRUCTURE_CONSTANT` =0.000000021e0
- const double `INVERSE_METER_ATOMIC_MASS_UNIT_RELATIONSHIP` =1.33102505010e-15
- const double `U_INVERSE_METER_ATOMIC_MASS_UNIT_RELATIONSHIP` =0.00000000040e-15
- const double `INVERSE_METER_ELECTRON_VOLT_RELATIONSHIP` =1.239841984e-6
- const double `U_INVERSE_METER_ELECTRON_VOLT_RELATIONSHIP` =0.0e0
- const double `INVERSE_METER_HARTREE_RELATIONSHIP` =4.5563352529120e-8
- const double `U_INVERSE_METER_HARTREE_RELATIONSHIP` =0.000000000088e-8
- const double `INVERSE_METER_HERTZ_RELATIONSHIP` =299792458.0e0
- const double `U_INVERSE_METER_HERTZ_RELATIONSHIP` =0.0e0
- const double `INVERSE_METER_JOULE_RELATIONSHIP` =1.986445857e-25
- const double `U_INVERSE_METER_JOULE_RELATIONSHIP` =0.0e0
- const double `INVERSE_METER_KELVIN_RELATIONSHIP` =1.438776877e-2
- const double `U_INVERSE_METER_KELVIN_RELATIONSHIP` =0.0e0
- const double `INVERSE_METER_KILOGRAM_RELATIONSHIP` =2.210219094e-42
- const double `U_INVERSE_METER_KILOGRAM_RELATIONSHIP` =0.0e0

- const double [INVERSE\\_OF\\_CONDUCTANCE\\_QUANTUM](#) =12906.40372e0
- const double [U\\_INVERSE\\_OF\\_CONDUCTANCE\\_QUANTUM](#) =0.0e0
- const double [JOSEPHSON\\_CONSTANT](#) =483597.8484e9
- const double [U\\_JOSEPHSON\\_CONSTANT](#) =0.0e0
- const double [JOULE\\_ATOMIC\\_MASS\\_UNIT\\_RELATIONSHIP](#) =6.7005352565e9
- const double [U\\_JOULE\\_ATOMIC\\_MASS\\_UNIT\\_RELATIONSHIP](#) =0.0000000020e9
- const double [JOULE\\_ELECTRON\\_VOLT\\_RELATIONSHIP](#) =6.241509074e18
- const double [U\\_JOULE\\_ELECTRON\\_VOLT\\_RELATIONSHIP](#) =0.0e0
- const double [JOULE\\_HARTREE\\_RELATIONSHIP](#) =2.2937122783963e17
- const double [U\\_JOULE\\_HARTREE\\_RELATIONSHIP](#) =0.000000000045e17
- const double [JOULE\\_HERTZ\\_RELATIONSHIP](#) =1.509190179e33
- const double [U\\_JOULE\\_HERTZ\\_RELATIONSHIP](#) =0.0e0
- const double [JOULE\\_INVERSE\\_METER\\_RELATIONSHIP](#) =5.034116567e24
- const double [U\\_JOULE\\_INVERSE\\_METER\\_RELATIONSHIP](#) =0.0e0
- const double [JOULE\\_KELVIN\\_RELATIONSHIP](#) =7.242970516e22
- const double [U\\_JOULE\\_KELVIN\\_RELATIONSHIP](#) =0.0e0
- const double [JOULE\\_KILOGRAM\\_RELATIONSHIP](#) =1.112650056e-17
- const double [U\\_JOULE\\_KILOGRAM\\_RELATIONSHIP](#) =0.0e0
- const double [KELVIN\\_ATOMIC\\_MASS\\_UNIT\\_RELATIONSHIP](#) =9.2510873014e-14
- const double [U\\_KELVIN\\_ATOMIC\\_MASS\\_UNIT\\_RELATIONSHIP](#) =0.0000000028e-14
- const double [KELVIN\\_ELECTRON\\_VOLT\\_RELATIONSHIP](#) =8.617333262e-5
- const double [U\\_KELVIN\\_ELECTRON\\_VOLT\\_RELATIONSHIP](#) =0.0e0
- const double [KELVIN\\_HARTREE\\_RELATIONSHIP](#) =3.1668115634556e-6
- const double [U\\_KELVIN\\_HARTREE\\_RELATIONSHIP](#) =0.0000000000061e-6
- const double [KELVIN\\_HERTZ\\_RELATIONSHIP](#) =2.083661912e10
- const double [U\\_KELVIN\\_HERTZ\\_RELATIONSHIP](#) =0.0e0
- const double [KELVIN\\_INVERSE\\_METER\\_RELATIONSHIP](#) =69.50348004e0
- const double [U\\_KELVIN\\_INVERSE\\_METER\\_RELATIONSHIP](#) =0.0e0
- const double [KELVIN\\_JOULE\\_RELATIONSHIP](#) =1.380649e-23
- const double [U\\_KELVIN\\_JOULE\\_RELATIONSHIP](#) =0.0e0
- const double [KELVIN\\_KILOGRAM\\_RELATIONSHIP](#) =1.536179187e-40
- const double [U\\_KELVIN\\_KILOGRAM\\_RELATIONSHIP](#) =0.0e0
- const double [KILOGRAM\\_ATOMIC\\_MASS\\_UNIT\\_RELATIONSHIP](#) =6.0221407621e26
- const double [U\\_KILOGRAM\\_ATOMIC\\_MASS\\_UNIT\\_RELATIONSHIP](#) =0.0000000018e26
- const double [KILOGRAM\\_ELECTRON\\_VOLT\\_RELATIONSHIP](#) =5.609588603e35
- const double [U\\_KILOGRAM\\_ELECTRON\\_VOLT\\_RELATIONSHIP](#) =0.0e0
- const double [KILOGRAM\\_HARTREE\\_RELATIONSHIP](#) =2.0614857887409e34
- const double [U\\_KILOGRAM\\_HARTREE\\_RELATIONSHIP](#) =0.000000000040e34
- const double [KILOGRAM\\_HERTZ\\_RELATIONSHIP](#) =1.356392489e50
- const double [U\\_KILOGRAM\\_HERTZ\\_RELATIONSHIP](#) =0.0e0
- const double [KILOGRAM\\_INVERSE\\_METER\\_RELATIONSHIP](#) =4.524438335e41
- const double [U\\_KILOGRAM\\_INVERSE\\_METER\\_RELATIONSHIP](#) =0.0e0
- const double [KILOGRAM\\_JOULE\\_RELATIONSHIP](#) =8.987551787e16
- const double [U\\_KILOGRAM\\_JOULE\\_RELATIONSHIP](#) =0.0e0
- const double [KILOGRAM\\_KELVIN\\_RELATIONSHIP](#) =6.509657260e39
- const double [U\\_KILOGRAM\\_KELVIN\\_RELATIONSHIP](#) =0.0e0
- const double [LATTICE\\_PARAMETER\\_OF\\_SILICON](#) =5.431020511e-10
- const double [U\\_LATTICE\\_PARAMETER\\_OF\\_SILICON](#) =0.000000089e-10
- const double [LATTICE\\_SPACING\\_OF\\_IDEAL\\_SI\\_220](#) =1.920155716e-10
- const double [U\\_LATTICE\\_SPACING\\_OF\\_IDEAL\\_SI\\_220](#) =0.000000032e-10
- const double [LOSCHMIDT\\_CONSTANT\\_273\\_15\\_K\\_100\\_KPA](#) =2.651645804e25
- const double [U\\_LOSCHMIDT\\_CONSTANT\\_273\\_15\\_K\\_100\\_KPA](#) =0.0e0
- const double [LOSCHMIDT\\_CONSTANT\\_273\\_15\\_K\\_101\\_325\\_KPA](#) =2.686780111e25
- const double [U\\_LOSCHMIDT\\_CONSTANT\\_273\\_15\\_K\\_101\\_325\\_KPA](#) =0.0e0
- const double [LUMINOUS EFFICACY](#) =683.0e0

- const double `U_LUMINOUS_EFFICACY` =0.0e0
- const double `MAG_FLUX_QUANTUM` =2.067833848e-15
- const double `U_MAG_FLUX_QUANTUM` =0.0e0
- const double `MOLAR_GAS_CONSTANT` =8.314462618e0
- const double `U_MOLAR_GAS_CONSTANT` =0.0e0
- const double `MOLAR_MASS_CONSTANT` =0.99999999965e-3
- const double `U_MOLAR_MASS_CONSTANT` =0.00000000030e-3
- const double `MOLAR_MASS_OF_CARBON_12` =11.9999999958e-3
- const double `U_MOLAR_MASS_OF_CARBON_12` =0.00000000036e-3
- const double `MOLAR_PLANCK_CONSTANT` =3.990312712e-10
- const double `U_MOLAR_PLANCK_CONSTANT` =0.0e0
- const double `MOLAR_VOLUME_OF IDEAL GAS_273_15_K_100_KPA` =22.71095464e-3
- const double `U_MOLAR_VOLUME_OF IDEAL GAS_273_15_K_100_KPA` =0.0e0
- const double `MOLAR_VOLUME_OF IDEAL GAS_273_15_K_101_325_KPA` =22.41396954e-3
- const double `U_MOLAR_VOLUME_OF IDEAL GAS_273_15_K_101_325_KPA` =0.0e0
- const double `MOLAR_VOLUME_OF SILICON` =1.205883199e-5
- const double `U_MOLAR_VOLUME_OF SILICON` =0.000000060e-5
- const double `MOLYBDENUM_X_UNIT` =1.00209952e-13
- const double `U_MOLYBDENUM_X_UNIT` =0.00000053e-13
- const double `MUON_COMPTON_WAVELENGTH` =1.173444110e-14
- const double `U_MUON_COMPTON_WAVELENGTH` =0.000000026e-14
- const double `MUON_ELECTRON_MASS_RATIO` =206.7682830e0
- const double `U_MUON_ELECTRON_MASS_RATIO` =0.0000046e0
- const double `MUON_G_FACTOR` =-2.0023318418e0
- const double `U_MUON_G_FACTOR` =0.000000013e0
- const double `MUON_MAG_MOM` =-4.49044830e-26
- const double `U_MUON_MAG_MOM` =0.00000010e-26
- const double `MUON_MAG_MOM_ANOMALY` =1.16592089e-3
- const double `U_MUON_MAG_MOM_ANOMALY` =0.00000063e-3
- const double `MUON_MAG_MOM_TO_BOHR_MAGNETON_RATIO` =-4.84197047e-3
- const double `U_MUON_MAG_MOM_TO_BOHR_MAGNETON_RATIO` =0.00000011e-3
- const double `MUON_MAG_MOM_TO_NUCLEAR_MAGNETON_RATIO` =-8.89059703e0
- const double `U_MUON_MAG_MOM_TO_NUCLEAR_MAGNETON_RATIO` =0.00000020e0
- const double `MUON_MASS` =1.883531627e-28
- const double `U_MUON_MASS` =0.000000042e-28
- const double `MUON_MASS_ENERGY EQUIVALENT` =1.692833804e-11
- const double `U_MUON_MASS_ENERGY EQUIVALENT` =0.000000038e-11
- const double `MUON_MASS_ENERGY EQUIVALENT_IN_MEV` =105.6583755e0
- const double `U_MUON_MASS_ENERGY EQUIVALENT_IN_MEV` =0.0000023e0
- const double `MUON_MASS_IN_U` =0.1134289259e0
- const double `U_MUON_MASS_IN_U` =0.0000000025e0
- const double `MUON_MOLAR_MASS` =1.134289259e-4
- const double `U_MUON_MOLAR_MASS` =0.000000025e-4
- const double `MUON_NEUTRON_MASS_RATIO` =0.1124545170e0
- const double `U_MUON_NEUTRON_MASS_RATIO` =0.0000000025e0
- const double `MUON_PROTON_MAG_MOM_RATIO` =-3.183345142e0
- const double `U_MUON_PROTON_MAG_MOM_RATIO` =0.000000071e0
- const double `MUON_PROTON_MASS_RATIO` =0.1126095264e0
- const double `U_MUON_PROTON_MASS_RATIO` =0.0000000025e0
- const double `MUON_TAU_MASS_RATIO` =5.94635e-2
- const double `U_MUON_TAU_MASS_RATIO` =0.00040e-2
- const double `NATURAL_UNIT_OF ACTION` =1.054571817e-34
- const double `U_NATURAL_UNIT_OF ACTION` =0.0e0
- const double `NATURAL_UNIT_OF ACTION_IN_EV_S` =6.582119569e-16
- const double `U_NATURAL_UNIT_OF ACTION_IN_EV_S` =0.0e0

- const double `NATURAL_UNIT_OF_ENERGY` =8.1871057769e-14
- const double `U_NATURAL_UNIT_OF_ENERGY` =0.0000000025e-14
- const double `NATURAL_UNIT_OF_ENERGY_IN_MEV` =0.51099895000e0
- const double `U_NATURAL_UNIT_OF_ENERGY_IN_MEV` =0.00000000015e0
- const double `NATURAL_UNIT_OF_LENGTH` =3.8615926796e-13
- const double `U_NATURAL_UNIT_OF_LENGTH` =0.0000000012e-13
- const double `NATURAL_UNIT_OF_MASS` =9.1093837015e-31
- const double `U_NATURAL_UNIT_OF_MASS` =0.0000000028e-31
- const double `NATURAL_UNIT_OF_MOMENTUM` =2.73092453075e-22
- const double `U_NATURAL_UNIT_OF_MOMENTUM` =0.00000000082e-22
- const double `NATURAL_UNIT_OF_MOMENTUM_IN_MEV_C` =0.51099895000e0
- const double `U_NATURAL_UNIT_OF_MOMENTUM_IN_MEV_C` =0.00000000015e0
- const double `NATURAL_UNIT_OF_TIME` =1.28808866819e-21
- const double `U_NATURAL_UNIT_OF_TIME` =0.00000000039e-21
- const double `NATURAL_UNIT_OF_VELOCITY` =299792458.0e0
- const double `U_NATURAL_UNIT_OF_VELOCITY` =0.0e0
- const double `NEUTRON_COMPTON_WAVELENGTH` =1.31959090581e-15
- const double `U_NEUTRON_COMPTON_WAVELENGTH` =0.00000000075e-15
- const double `NEUTRON_ELECTRON_MAG_MOM_RATIO` =1.04066882e-3
- const double `U_NEUTRON_ELECTRON_MAG_MOM_RATIO` =0.000000025e-3
- const double `NEUTRON_ELECTRON_MASS_RATIO` =1838.68366173e0
- const double `U_NEUTRON_ELECTRON_MASS_RATIO` =0.00000089e0
- const double `NEUTRON_G_FACTOR` =-3.82608545e0
- const double `U_NEUTRON_G_FACTOR` =0.00000090e0
- const double `NEUTRON_GYROMAG_RATIO` =1.83247171e8
- const double `U_NEUTRON_GYROMAG_RATIO` =0.00000043e8
- const double `NEUTRON_GYROMAG_RATIO_IN_MHZ_T` =29.1646931e0
- const double `U_NEUTRON_GYROMAG_RATIO_IN_MHZ_T` =0.0000069e0
- const double `NEUTRON_MAG_MOM` =-9.6623651e-27
- const double `U_NEUTRON_MAG_MOM` =0.0000023e-27
- const double `NEUTRON_MAG_MOM_TO_BOHR_MAGNETON_RATIO` =-1.04187563e-3
- const double `U_NEUTRON_MAG_MOM_TO_BOHR_MAGNETON_RATIO` =0.00000025e-3
- const double `NEUTRON_MAG_MOM_TO_NUCLEAR_MAGNETON_RATIO` =-1.91304273e0
- const double `U_NEUTRON_MAG_MOM_TO_NUCLEAR_MAGNETON_RATIO` =0.00000045e0
- const double `NEUTRON_MASS` =1.67492749804e-27
- const double `U_NEUTRON_MASS` =0.00000000095e-27
- const double `NEUTRON_MASS_ENERGY_EQUIVALENT` =1.50534976287e-10
- const double `U_NEUTRON_MASS_ENERGY_EQUIVALENT` =0.00000000086e-10
- const double `NEUTRON_MASS_ENERGY_EQUIVALENT_IN_MEV` =939.56542052e0
- const double `U_NEUTRON_MASS_ENERGY_EQUIVALENT_IN_MEV` =0.00000054e0
- const double `NEUTRON_MASS_IN_U` =1.00866491595e0
- const double `U_NEUTRON_MASS_IN_U` =0.00000000049e0
- const double `NEUTRON_MOLAR_MASS` =1.00866491560e-3
- const double `U_NEUTRON_MOLAR_MASS` =0.00000000057e-3
- const double `NEUTRON_MUON_MASS_RATIO` =8.89248406e0
- const double `U_NEUTRON_MUON_MASS_RATIO` =0.00000020e0
- const double `NEUTRON_PROTON_MAG_MOM_RATIO` =-0.68497934e0
- const double `U_NEUTRON_PROTON_MAG_MOM_RATIO` =0.00000016e0
- const double `NEUTRON_PROTON_MASS_DIFFERENCE` =2.30557435e-30
- const double `U_NEUTRON_PROTON_MASS_DIFFERENCE` =0.00000082e-30
- const double `NEUTRON_PROTON_MASS_DIFFERENCE_ENERGY_EQUIVALENT` =2.07214689e-13
- const double `U_NEUTRON_PROTON_MASS_DIFFERENCE_ENERGY_EQUIVALENT` =0.00000074e-13
- const double `NEUTRON_PROTON_MASS_DIFFERENCE_ENERGY_EQUIVALENT_IN_MEV` =1.↵  
29333236e0

- const double [U\\_NEUTRON\\_PROTON\\_MASS\\_DIFFERENCE\\_ENERGY\\_EQUIVALENT\\_IN\\_MEV](#) =0.↵  
00000046e0
- const double [NEUTRON\\_PROTON\\_MASS\\_DIFFERENCE\\_IN\\_U](#) =1.38844933e-3
- const double [U\\_NEUTRON\\_PROTON\\_MASS\\_DIFFERENCE\\_IN\\_U](#) =0.00000049e-3
- const double [NEUTRON\\_PROTON\\_MASS\\_RATIO](#) =1.00137841931e0
- const double [U\\_NEUTRON\\_PROTON\\_MASS\\_RATIO](#) =0.00000000049e0
- const double [NEUTRON\\_RELATIVE\\_ATOMIC\\_MASS](#) =1.00866491595e0
- const double [U\\_NEUTRON\\_RELATIVE\\_ATOMIC\\_MASS](#) =0.00000000049e0
- const double [NEUTRON\\_TAU\\_MASS\\_RATIO](#) =0.528779e0
- const double [U\\_NEUTRON\\_TAU\\_MASS\\_RATIO](#) =0.000036e0
- const double [NEUTRON\\_TO\\_SHIELDED\\_PROTON\\_MAG\\_MOM\\_RATIO](#) =-0.68499694e0
- const double [U\\_NEUTRON\\_TO\\_SHIELDED\\_PROTON\\_MAG\\_MOM\\_RATIO](#) =0.00000016e0
- const double [NEWTONIAN\\_CONSTANT\\_OF\\_GRAVITATION](#) =6.67430e-11
- const double [U\\_NEWTONIAN\\_CONSTANT\\_OF\\_GRAVITATION](#) =0.00015e-11
- const double [NEWTONIAN\\_CONSTANT\\_OF\\_GRAVITATION\\_OVER\\_H\\_BAR\\_C](#) =6.70883e-39
- const double [U\\_NEWTONIAN\\_CONSTANT\\_OF\\_GRAVITATION\\_OVER\\_H\\_BAR\\_C](#) =0.00015e-39
- const double [NUCLEAR\\_MAGNETON](#) =5.0507837461e-27
- const double [U\\_NUCLEAR\\_MAGNETON](#) =0.0000000015e-27
- const double [NUCLEAR\\_MAGNETON\\_IN\\_EV\\_T](#) =3.15245125844e-8
- const double [U\\_NUCLEAR\\_MAGNETON\\_IN\\_EV\\_T](#) =0.00000000096e-8
- const double [NUCLEAR\\_MAGNETON\\_IN\\_INVERSE\\_METER\\_PER\\_TESLA](#) =2.54262341353e-2
- const double [U\\_NUCLEAR\\_MAGNETON\\_IN\\_INVERSE\\_METER\\_PER\\_TESLA](#) =0.00000000078e-2
- const double [NUCLEAR\\_MAGNETON\\_IN\\_K\\_T](#) =3.6582677756e-4
- const double [U\\_NUCLEAR\\_MAGNETON\\_IN\\_K\\_T](#) =0.0000000011e-4
- const double [NUCLEAR\\_MAGNETON\\_IN\\_MHZ\\_T](#) =7.6225932291e0
- const double [U\\_NUCLEAR\\_MAGNETON\\_IN\\_MHZ\\_T](#) =0.0000000023e0
- const double [PLANCK\\_CONSTANT](#) =6.62607015e-34
- const double [U\\_PLANCK\\_CONSTANT](#) =0.0e0
- const double [PLANCK\\_CONSTANT\\_IN\\_EV\\_HZ](#) =4.135667696e-15
- const double [U\\_PLANCK\\_CONSTANT\\_IN\\_EV\\_HZ](#) =0.0e0
- const double [PLANCK\\_LENGTH](#) =1.616255e-35
- const double [U\\_PLANCK\\_LENGTH](#) =0.000018e-35
- const double [PLANCK\\_MASS](#) =2.176434e-8
- const double [U\\_PLANCK\\_MASS](#) =0.000024e-8
- const double [PLANCK\\_MASS\\_ENERGY\\_EQUIVALENT\\_IN\\_GEV](#) =1.220890e19
- const double [U\\_PLANCK\\_MASS\\_ENERGY\\_EQUIVALENT\\_IN\\_GEV](#) =0.000014e19
- const double [PLANCK\\_TEMPERATURE](#) =1.416784e32
- const double [U\\_PLANCK\\_TEMPERATURE](#) =0.000016e32
- const double [PLANCK\\_TIME](#) =5.391247e-44
- const double [U\\_PLANCK\\_TIME](#) =0.000060e-44
- const double [PROTON\\_CHARGE\\_TO\\_MASS\\_QUOTIENT](#) =9.5788331560e7
- const double [U\\_PROTON\\_CHARGE\\_TO\\_MASS\\_QUOTIENT](#) =0.0000000029e7
- const double [PROTON\\_COMPTON\\_WAVELENGTH](#) =1.32140985539e-15
- const double [U\\_PROTON\\_COMPTON\\_WAVELENGTH](#) =0.00000000040e-15
- const double [PROTON\\_ELECTRON\\_MASS\\_RATIO](#) =1836.15267343e0
- const double [U\\_PROTON\\_ELECTRON\\_MASS\\_RATIO](#) =0.00000011e0
- const double [PROTON\\_G\\_FACTOR](#) =5.5856946893e0
- const double [U\\_PROTON\\_G\\_FACTOR](#) =0.0000000016e0
- const double [PROTON\\_GYROMAG\\_RATIO](#) =2.6752218744e8
- const double [U\\_PROTON\\_GYROMAG\\_RATIO](#) =0.0000000011e8
- const double [PROTON\\_GYROMAG\\_RATIO\\_IN\\_MHZ\\_T](#) =42.577478518e0
- const double [U\\_PROTON\\_GYROMAG\\_RATIO\\_IN\\_MHZ\\_T](#) =0.000000018e0
- const double [PROTON\\_MAG\\_MOM](#) =1.41060679736e-26
- const double [U\\_PROTON\\_MAG\\_MOM](#) =0.00000000060e-26
- const double [PROTON\\_MAG\\_MOM\\_TO\\_BOHR\\_MAGNETON\\_RATIO](#) =1.52103220230e-3



- const double [U\\_PROTON\\_MAG\\_MOM\\_TO\\_BOHR\\_MAGNETON\\_RATIO](#) =0.00000000046e-3
- const double [PROTON\\_MAG\\_MOM\\_TO\\_NUCLEAR\\_MAGNETON\\_RATIO](#) =2.79284734463e0
- const double [U\\_PROTON\\_MAG\\_MOM\\_TO\\_NUCLEAR\\_MAGNETON\\_RATIO](#) =0.00000000082e0
- const double [PROTON\\_MAG\\_SHIELDING\\_CORRECTION](#) =2.5689e-5
- const double [U\\_PROTON\\_MAG\\_SHIELDING\\_CORRECTION](#) =0.0011e-5
- const double [PROTON\\_MASS](#) =1.67262192369e-27
- const double [U\\_PROTON\\_MASS](#) =0.00000000051e-27
- const double [PROTON\\_MASS\\_ENERGY\\_EQUIVALENT](#) =1.50327761598e-10
- const double [U\\_PROTON\\_MASS\\_ENERGY\\_EQUIVALENT](#) =0.00000000046e-10
- const double [PROTON\\_MASS\\_ENERGY\\_EQUIVALENT\\_IN\\_MEV](#) =938.27208816e0
- const double [U\\_PROTON\\_MASS\\_ENERGY\\_EQUIVALENT\\_IN\\_MEV](#) =0.00000029e0
- const double [PROTON\\_MASS\\_IN\\_U](#) =1.007276466621e0
- const double [U\\_PROTON\\_MASS\\_IN\\_U](#) =0.00000000053e0
- const double [PROTON\\_MOLAR\\_MASS](#) =1.00727646627e-3
- const double [U\\_PROTON\\_MOLAR\\_MASS](#) =0.00000000031e-3
- const double [PROTON\\_MUON\\_MASS\\_RATIO](#) =8.88024337e0
- const double [U\\_PROTON\\_MUON\\_MASS\\_RATIO](#) =0.00000020e0
- const double [PROTON\\_NEUTRON\\_MAG\\_MOM\\_RATIO](#) =-1.45989805e0
- const double [U\\_PROTON\\_NEUTRON\\_MAG\\_MOM\\_RATIO](#) =0.00000034e0
- const double [PROTON\\_NEUTRON\\_MASS\\_RATIO](#) =0.99862347812e0
- const double [U\\_PROTON\\_NEUTRON\\_MASS\\_RATIO](#) =0.00000000049e0
- const double [PROTON\\_RELATIVE\\_ATOMIC\\_MASS](#) =1.007276466621e0
- const double [U\\_PROTON\\_RELATIVE\\_ATOMIC\\_MASS](#) =0.00000000053e0
- const double [PROTON\\_RMS\\_CHARGE\\_RADIUS](#) =8.414e-16
- const double [U\\_PROTON\\_RMS\\_CHARGE\\_RADIUS](#) =0.019e-16
- const double [PROTON\\_TAU\\_MASS\\_RATIO](#) =0.528051e0
- const double [U\\_PROTON\\_TAU\\_MASS\\_RATIO](#) =0.000036e0
- const double [QUANTUM\\_OF\\_CIRCULATION](#) =3.6369475516e-4
- const double [U\\_QUANTUM\\_OF\\_CIRCULATION](#) =0.0000000011e-4
- const double [QUANTUM\\_OF\\_CIRCULATION\\_TIMES\\_2](#) =7.2738951032e-4
- const double [U\\_QUANTUM\\_OF\\_CIRCULATION\\_TIMES\\_2](#) =0.0000000022e-4
- const double [REDUCED\\_COMPTON\\_WAVELENGTH](#) =3.8615926796e-13
- const double [U\\_REDUCED\\_COMPTON\\_WAVELENGTH](#) =0.0000000012e-13
- const double [REDUCED\\_MUON\\_COMPTON\\_WAVELENGTH](#) =1.867594306e-15
- const double [U\\_REDUCED\\_MUON\\_COMPTON\\_WAVELENGTH](#) =0.000000042e-15
- const double [REDUCED\\_NEUTRON\\_COMPTON\\_WAVELENGTH](#) =2.1001941552e-16
- const double [U\\_REDUCED\\_NEUTRON\\_COMPTON\\_WAVELENGTH](#) =0.0000000012e-16
- const double [REDUCED\\_PLANCK\\_CONSTANT](#) =1.054571817e-34
- const double [U\\_REDUCED\\_PLANCK\\_CONSTANT](#) =0.0e0
- const double [REDUCED\\_PLANCK\\_CONSTANT\\_IN\\_EV\\_S](#) =6.582119569e-16
- const double [U\\_REDUCED\\_PLANCK\\_CONSTANT\\_IN\\_EV\\_S](#) =0.0e0
- const double [REDUCED\\_PLANCK\\_CONSTANT\\_TIMES\\_C\\_IN\\_MEV\\_FM](#) =197.3269804e0
- const double [U\\_REDUCED\\_PLANCK\\_CONSTANT\\_TIMES\\_C\\_IN\\_MEV\\_FM](#) =0.0e0
- const double [REDUCED\\_PROTON\\_COMPTON\\_WAVELENGTH](#) =2.10308910336e-16
- const double [U\\_REDUCED\\_PROTON\\_COMPTON\\_WAVELENGTH](#) =0.00000000064e-16
- const double [REDUCED\\_TAU\\_COMPTON\\_WAVELENGTH](#) =1.110538e-16
- const double [U\\_REDUCED\\_TAU\\_COMPTON\\_WAVELENGTH](#) =0.000075e-16
- const double [RYDBERG\\_CONSTANT](#) =10973731.568160e0
- const double [U\\_RYDBERG\\_CONSTANT](#) =0.000021e0
- const double [RYDBERG\\_CONSTANT\\_TIMES\\_C\\_IN\\_HZ](#) =3.2898419602508e15
- const double [U\\_RYDBERG\\_CONSTANT\\_TIMES\\_C\\_IN\\_HZ](#) =0.000000000064e15
- const double [RYDBERG\\_CONSTANT\\_TIMES\\_HC\\_IN\\_EV](#) =13.605693122994e0
- const double [U\\_RYDBERG\\_CONSTANT\\_TIMES\\_HC\\_IN\\_EV](#) =0.00000000026e0
- const double [RYDBERG\\_CONSTANT\\_TIMES\\_HC\\_IN\\_J](#) =2.1798723611035e-18
- const double [U\\_RYDBERG\\_CONSTANT\\_TIMES\\_HC\\_IN\\_J](#) =0.000000000042e-18

- const double [SACKUR\\_TETRODE\\_CONSTANT\\_1\\_K\\_100\\_KPA](#) =-1.15170753706e0
- const double [U\\_SACKUR\\_TETRODE\\_CONSTANT\\_1\\_K\\_100\\_KPA](#) =0.00000000045e0
- const double [SACKUR\\_TETRODE\\_CONSTANT\\_1\\_K\\_101\\_325\\_KPA](#) =-1.16487052358e0
- const double [U\\_SACKUR\\_TETRODE\\_CONSTANT\\_1\\_K\\_101\\_325\\_KPA](#) =0.00000000045e0
- const double [SECOND\\_RADIATION\\_CONSTANT](#) =1.438776877e-2
- const double [U\\_SECOND\\_RADIATION\\_CONSTANT](#) =0.0e0
- const double [SHIELDED\\_HELION\\_GYROMAG\\_RATIO](#) =2.037894569e8
- const double [U\\_SHIELDED\\_HELION\\_GYROMAG\\_RATIO](#) =0.000000024e8
- const double [SHIELDED\\_HELION\\_GYROMAG\\_RATIO\\_IN\\_MHZ\\_T](#) =32.43409942e0
- const double [U\\_SHIELDED\\_HELION\\_GYROMAG\\_RATIO\\_IN\\_MHZ\\_T](#) =0.00000038e0
- const double [SHIELDED\\_HELION\\_MAG\\_MOM](#) =-1.074553090e-26
- const double [U\\_SHIELDED\\_HELION\\_MAG\\_MOM](#) =0.000000013e-26
- const double [SHIELDED\\_HELION\\_MAG\\_MOM\\_TO\\_BOHR\\_MAGNETON\\_RATIO](#) =-1.158671471e-3
- const double [U\\_SHIELDED\\_HELION\\_MAG\\_MOM\\_TO\\_BOHR\\_MAGNETON\\_RATIO](#) =0.000000014e-3
- const double [SHIELDED\\_HELION\\_MAG\\_MOM\\_TO\\_NUCLEAR\\_MAGNETON\\_RATIO](#) =-2.127497719e0
- const double [U\\_SHIELDED\\_HELION\\_MAG\\_MOM\\_TO\\_NUCLEAR\\_MAGNETON\\_RATIO](#) =0.000000025e0
- const double [SHIELDED\\_HELION\\_TO\\_PROTON\\_MAG\\_MOM\\_RATIO](#) =-0.7617665618e0
- const double [U\\_SHIELDED\\_HELION\\_TO\\_PROTON\\_MAG\\_MOM\\_RATIO](#) =0.0000000089e0
- const double [SHIELDED\\_HELION\\_TO\\_SHIELDED\\_PROTON\\_MAG\\_MOM\\_RATIO](#) =-0.7617861313e0
- const double [U\\_SHIELDED\\_HELION\\_TO\\_SHIELDED\\_PROTON\\_MAG\\_MOM\\_RATIO](#) =0.0000000033e0
- const double [SHIELDED\\_PROTON\\_GYROMAG\\_RATIO](#) =2.675153151e8
- const double [U\\_SHIELDED\\_PROTON\\_GYROMAG\\_RATIO](#) =0.000000029e8
- const double [SHIELDED\\_PROTON\\_GYROMAG\\_RATIO\\_IN\\_MHZ\\_T](#) =42.57638474e0
- const double [U\\_SHIELDED\\_PROTON\\_GYROMAG\\_RATIO\\_IN\\_MHZ\\_T](#) =0.00000046e0
- const double [SHIELDED\\_PROTON\\_MAG\\_MOM](#) =1.410570560e-26
- const double [U\\_SHIELDED\\_PROTON\\_MAG\\_MOM](#) =0.000000015e-26
- const double [SHIELDED\\_PROTON\\_MAG\\_MOM\\_TO\\_BOHR\\_MAGNETON\\_RATIO](#) =1.520993128e-3
- const double [U\\_SHIELDED\\_PROTON\\_MAG\\_MOM\\_TO\\_BOHR\\_MAGNETON\\_RATIO](#) =0.000000017e-3
- const double [SHIELDED\\_PROTON\\_MAG\\_MOM\\_TO\\_NUCLEAR\\_MAGNETON\\_RATIO](#) =2.792775599e0
- const double [U\\_SHIELDED\\_PROTON\\_MAG\\_MOM\\_TO\\_NUCLEAR\\_MAGNETON\\_RATIO](#) =0.000000030e0
- const double [SHIELDING\\_DIFFERENCE\\_OF\\_D\\_AND\\_P\\_IN\\_HD](#) =2.0200e-8
- const double [U\\_SHIELDING\\_DIFFERENCE\\_OF\\_D\\_AND\\_P\\_IN\\_HD](#) =0.0020e-8
- const double [SHIELDING\\_DIFFERENCE\\_OF\\_T\\_AND\\_P\\_IN\\_HT](#) =2.4140e-8
- const double [U\\_SHIELDING\\_DIFFERENCE\\_OF\\_T\\_AND\\_P\\_IN\\_HT](#) =0.0020e-8
- const double [SPEED\\_OF\\_LIGHT\\_IN\\_VACUUM](#) =299792458.0e0
- const double [U\\_SPEED\\_OF\\_LIGHT\\_IN\\_VACUUM](#) =0.0e0
- const double [STANDARD\\_ACCELERATION\\_OF\\_GRAVITY](#) =9.80665e0
- const double [U\\_STANDARD\\_ACCELERATION\\_OF\\_GRAVITY](#) =0.0e0
- const double [STANDARD\\_ATMOSPHERE](#) =101325.0e0
- const double [U\\_STANDARD\\_ATMOSPHERE](#) =0.0e0
- const double [STANDARD\\_STATE\\_PRESSURE](#) =100000.0e0
- const double [U\\_STANDARD\\_STATE\\_PRESSURE](#) =0.0e0
- const double [STEFAN\\_BOLTZMANN\\_CONSTANT](#) =5.670374419e-8
- const double [U\\_STEFAN\\_BOLTZMANN\\_CONSTANT](#) =0.0e0
- const double [TAU\\_COMPTON\\_WAVELENGTH](#) =6.97771e-16
- const double [U\\_TAU\\_COMPTON\\_WAVELENGTH](#) =0.00047e-16
- const double [TAU\\_ELECTRON\\_MASS\\_RATIO](#) =3477.23e0
- const double [U\\_TAU\\_ELECTRON\\_MASS\\_RATIO](#) =0.23e0
- const double [TAU\\_ENERGY\\_EQUIVALENT](#) =1776.86e0
- const double [U\\_TAU\\_ENERGY\\_EQUIVALENT](#) =0.12e0
- const double [TAU\\_MASS](#) =3.16754e-27
- const double [U\\_TAU\\_MASS](#) =0.00021e-27
- const double [TAU\\_MASS\\_ENERGY\\_EQUIVALENT](#) =2.84684e-10
- const double [U\\_TAU\\_MASS\\_ENERGY\\_EQUIVALENT](#) =0.00019e-10
- const double [TAU\\_MASS\\_IN\\_U](#) =1.90754e0

- const double `U_TAU_MASS_IN_U` =0.00013e0
- const double `TAU_MOLAR_MASS` =1.90754e-3
- const double `U_TAU_MOLAR_MASS` =0.00013e-3
- const double `TAU_MUON_MASS_RATIO` =16.8170e0
- const double `U_TAU_MUON_MASS_RATIO` =0.0011e0
- const double `TAU_NEUTRON_MASS_RATIO` =1.89115e0
- const double `U_TAU_NEUTRON_MASS_RATIO` =0.00013e0
- const double `TAU_PROTON_MASS_RATIO` =1.89376e0
- const double `U_TAU_PROTON_MASS_RATIO` =0.00013e0
- const double `THOMSON_CROSS_SECTION` =6.6524587321e-29
- const double `U_THOMSON_CROSS_SECTION` =0.0000000060e-29
- const double `TRITON_ELECTRON_MASS_RATIO` =5496.92153573e0
- const double `U_TRITON_ELECTRON_MASS_RATIO` =0.00000027e0
- const double `TRITON_G_FACTOR` =5.957924931e0
- const double `U_TRITON_G_FACTOR` =0.000000012e0
- const double `TRITON_MAG_MOM` =1.5046095202e-26
- const double `U_TRITON_MAG_MOM` =0.0000000030e-26
- const double `TRITON_MAG_MOM_TO_BOHR_MAGNETON_RATIO` =1.6223936651e-3
- const double `U_TRITON_MAG_MOM_TO_BOHR_MAGNETON_RATIO` =0.0000000032e-3
- const double `TRITON_MAG_MOM_TO_NUCLEAR_MAGNETON_RATIO` =2.9789624656e0
- const double `U_TRITON_MAG_MOM_TO_NUCLEAR_MAGNETON_RATIO` =0.0000000059e0
- const double `TRITON_MASS` =5.0073567446e-27
- const double `U_TRITON_MASS` =0.0000000015e-27
- const double `TRITON_MASS_ENERGY_EQUIVALENT` =4.5003878060e-10
- const double `U_TRITON_MASS_ENERGY_EQUIVALENT` =0.0000000014e-10
- const double `TRITON_MASS_ENERGY_EQUIVALENT_IN_MEV` =2808.92113298e0
- const double `U_TRITON_MASS_ENERGY_EQUIVALENT_IN_MEV` =0.00000085e0
- const double `TRITON_MASS_IN_U` =3.01550071621e0
- const double `U_TRITON_MASS_IN_U` =0.00000000012e0
- const double `TRITON_MOLAR_MASS` =3.01550071517e-3
- const double `U_TRITON_MOLAR_MASS` =0.00000000092e-3
- const double `TRITON_PROTON_MASS_RATIO` =2.99371703414e0
- const double `U_TRITON_PROTON_MASS_RATIO` =0.00000000015e0
- const double `TRITON_RELATIVE_ATOMIC_MASS` =3.01550071621e0
- const double `U_TRITON_RELATIVE_ATOMIC_MASS` =0.00000000012e0
- const double `TRITON_TO_PROTON_MAG_MOM_RATIO` =1.0666399191e0
- const double `U_TRITON_TO_PROTON_MAG_MOM_RATIO` =0.0000000021e0
- const double `UNIFIED_ATOMIC_MASS_UNIT` =1.66053906660e-27
- const double `U_UNIFIED_ATOMIC_MASS_UNIT` =0.00000000050e-27
- const double `VACUUM_ELECTRIC_PERMITTIVITY` =8.8541878128e-12
- const double `U_VACUUM_ELECTRIC_PERMITTIVITY` =0.0000000013e-12
- const double `VACUUM_MAG_PERMEABILITY` =1.25663706212e-6
- const double `U_VACUUM_MAG_PERMEABILITY` =0.00000000019e-6
- const double `VON_KLITZING_CONSTANT` =25812.80745e0
- const double `U_VON_KLITZING_CONSTANT` =0.0e0
- const double `WEAK_MIXING_ANGLE` =0.22290e0
- const double `U_WEAK_MIXING_ANGLE` =0.00030e0
- const double `WIEN_FREQUENCY_DISPLACEMENT_LAW_CONSTANT` =5.878925757e10
- const double `U_WIEN_FREQUENCY_DISPLACEMENT_LAW_CONSTANT` =0.0e0
- const double `WIEN_WAVELENGTH_DISPLACEMENT_LAW_CONSTANT` =2.897771955e-3
- const double `U_WIEN_WAVELENGTH_DISPLACEMENT_LAW_CONSTANT` =0.0e0
- const double `W_TO_Z_MASS_RATIO` =0.88153e0
- const double `U_W_TO_Z_MASS_RATIO` =0.00017e0



## 17.12.1 Detailed Description

Codata module - autogenerated.

Definition in file [ccodata.h](#).

## 17.12.2 Variable Documentation

### 17.12.2.1 ALPHA\_PARTICLE\_ELECTRON\_MASS\_RATIO

```
const double ALPHA_PARTICLE_ELECTRON_MASS_RATIO =7294.29954142e0
```

Definition at line 6 of file [ccodata.h](#).

### 17.12.2.2 ALPHA\_PARTICLE\_MASS

```
const double ALPHA_PARTICLE_MASS =6.6446573357e-27
```

kg

Definition at line 9 of file [ccodata.h](#).

### 17.12.2.3 ALPHA\_PARTICLE\_MASS\_ENERGY\_EQUIVALENT

```
const double ALPHA_PARTICLE_MASS_ENERGY_EQUIVALENT =5.9719201914e-10
```

J

Definition at line 12 of file [ccodata.h](#).

### 17.12.2.4 ALPHA\_PARTICLE\_MASS\_ENERGY\_EQUIVALENT\_IN\_MEV

```
const double ALPHA_PARTICLE_MASS_ENERGY_EQUIVALENT_IN_MEV =3727.3794066e0
```

MeV

Definition at line 15 of file [ccodata.h](#).

#### 17.12.2.5 ALPHA\_PARTICLE\_MASS\_IN\_U

```
const double ALPHA_PARTICLE_MASS_IN_U =4.001506179127e0
```

u

Definition at line 18 of file [ccodata.h](#).

#### 17.12.2.6 ALPHA\_PARTICLE\_MOLAR\_MASS

```
const double ALPHA_PARTICLE_MOLAR_MASS =4.0015061777e-3
```

kg mol<sup>-1</sup>

Definition at line 21 of file [ccodata.h](#).

#### 17.12.2.7 ALPHA\_PARTICLE\_PROTON\_MASS\_RATIO

```
const double ALPHA_PARTICLE_PROTON_MASS_RATIO =3.97259969009e0
```

Definition at line 24 of file [ccodata.h](#).

#### 17.12.2.8 ALPHA\_PARTICLE\_RELATIVE\_ATOMIC\_MASS

```
const double ALPHA_PARTICLE_RELATIVE_ATOMIC_MASS =4.001506179127e0
```

Definition at line 27 of file [ccodata.h](#).

#### 17.12.2.9 ANGSTROM\_STAR

```
const double ANGSTROM_STAR =1.00001495e-10
```

m

Definition at line 30 of file [ccodata.h](#).

#### 17.12.2.10 ATOMIC\_MASS\_CONSTANT

```
const double ATOMIC_MASS_CONSTANT =1.66053906660e-27
```

kg

Definition at line 33 of file [ccodata.h](#).

#### 17.12.2.11 ATOMIC\_MASS\_CONSTANT\_ENERGY\_EQUIVALENT

```
const double ATOMIC_MASS_CONSTANT_ENERGY_EQUIVALENT =1.49241808560e-10
```

J

Definition at line 36 of file [ccodata.h](#).

#### 17.12.2.12 ATOMIC\_MASS\_CONSTANT\_ENERGY\_EQUIVALENT\_IN\_MEV

```
const double ATOMIC_MASS_CONSTANT_ENERGY_EQUIVALENT_IN_MEV =931.49410242e0
```

MeV

Definition at line 39 of file [ccodata.h](#).

#### 17.12.2.13 ATOMIC\_MASS\_UNIT\_ELECTRON\_VOLT\_RELATIONSHIP

```
const double ATOMIC_MASS_UNIT_ELECTRON_VOLT_RELATIONSHIP =9.3149410242e8
```

eV

Definition at line 42 of file [ccodata.h](#).

#### 17.12.2.14 ATOMIC\_MASS\_UNIT\_HARTREE\_RELATIONSHIP

```
const double ATOMIC_MASS_UNIT_HARTREE_RELATIONSHIP =3.4231776874e7
```

E<sub>h</sub>

Definition at line 45 of file [ccodata.h](#).

#### 17.12.2.15 ATOMIC\_MASS\_UNIT\_HERTZ\_RELATIONSHIP

```
const double ATOMIC_MASS_UNIT_HERTZ_RELATIONSHIP =2.25234271871e23
```

Hz

Definition at line 48 of file [ccodata.h](#).

#### 17.12.2.16 ATOMIC\_MASS\_UNIT\_INVERSE\_METER\_RELATIONSHIP

```
const double ATOMIC_MASS_UNIT_INVERSE_METER_RELATIONSHIP =7.5130066104e14
```

$\text{m}^{-1}$

Definition at line 51 of file [ccodata.h](#).

#### 17.12.2.17 ATOMIC\_MASS\_UNIT\_JOULE\_RELATIONSHIP

```
const double ATOMIC_MASS_UNIT_JOULE_RELATIONSHIP =1.49241808560e-10
```

J

Definition at line 54 of file [ccodata.h](#).

#### 17.12.2.18 ATOMIC\_MASS\_UNIT\_KELVIN\_RELATIONSHIP

```
const double ATOMIC_MASS_UNIT_KELVIN_RELATIONSHIP =1.08095401916e13
```

K

Definition at line 57 of file [ccodata.h](#).

#### 17.12.2.19 ATOMIC\_MASS\_UNIT\_KILOGRAM\_RELATIONSHIP

```
const double ATOMIC_MASS_UNIT_KILOGRAM_RELATIONSHIP =1.66053906660e-27
```

kg

Definition at line 60 of file [ccodata.h](#).

#### 17.12.2.20 ATOMIC\_UNIT\_OF\_1ST\_HYPERPOLARIZABILITY

```
const double ATOMIC_UNIT_OF_1ST_HYPERPOLARIZABILITY =3.2063613061e-53
```

$\text{C}^3 \text{m}^3 \text{J}^{-2}$

Definition at line 63 of file [ccodata.h](#).

#### 17.12.2.21 ATOMIC\_UNIT\_OF\_2ND\_HYPERPOLARIZABILITY

```
const double ATOMIC_UNIT_OF_2ND_HYPERPOLARIZABILITY =6.2353799905e-65
```

$\text{C}^4 \text{m}^4 \text{J}^{-3}$

Definition at line 66 of file [ccodata.h](#).

#### 17.12.2.22 ATOMIC\_UNIT\_OF\_ACTION

```
const double ATOMIC_UNIT_OF_ACTION =1.054571817e-34
```

J s

Definition at line 69 of file [ccodata.h](#).

#### 17.12.2.23 ATOMIC\_UNIT\_OF\_CHARGE

```
const double ATOMIC_UNIT_OF_CHARGE =1.602176634e-19
```

C

Definition at line 72 of file [ccodata.h](#).

#### 17.12.2.24 ATOMIC\_UNIT\_OF\_CHARGE\_DENSITY

```
const double ATOMIC_UNIT_OF_CHARGE_DENSITY =1.08120238457e12
```

$\text{C m}^{-3}$

Definition at line 75 of file [ccodata.h](#).

#### 17.12.2.25 ATOMIC\_UNIT\_OF\_CURRENT

```
const double ATOMIC_UNIT_OF_CURRENT =6.623618237510e-3
```

A

Definition at line 78 of file [ccodata.h](#).

#### 17.12.2.26 ATOMIC\_UNIT\_OF\_ELECTRIC\_DIPOLE\_MOM

```
const double ATOMIC_UNIT_OF_ELECTRIC_DIPOLE_MOM =8.4783536255e-30
```

C m

Definition at line 81 of file [ccodata.h](#).

#### 17.12.2.27 ATOMIC\_UNIT\_OF\_ELECTRIC\_FIELD

```
const double ATOMIC_UNIT_OF_ELECTRIC_FIELD =5.14220674763e11
```

V m<sup>-1</sup>

Definition at line 84 of file [ccodata.h](#).

#### 17.12.2.28 ATOMIC\_UNIT\_OF\_ELECTRIC\_FIELD\_GRADIENT

```
const double ATOMIC_UNIT_OF_ELECTRIC_FIELD_GRADIENT =9.7173624292e21
```

V m<sup>-2</sup>

Definition at line 87 of file [ccodata.h](#).

#### 17.12.2.29 ATOMIC\_UNIT\_OF\_ELECTRIC\_POLARIZABILITY

```
const double ATOMIC_UNIT_OF_ELECTRIC_POLARIZABILITY =1.64877727436e-41
```

C<sup>2</sup> m<sup>2</sup> J<sup>-1</sup>

Definition at line 90 of file [ccodata.h](#).

### 17.12.2.30 ATOMIC\_UNIT\_OF\_ELECTRIC\_POTENTIAL

```
const double ATOMIC_UNIT_OF_ELECTRIC_POTENTIAL =27.211386245988e0
```

V

Definition at line 93 of file [ccodata.h](#).

### 17.12.2.31 ATOMIC\_UNIT\_OF\_ELECTRIC\_QUADRUPOLE\_MOM

```
const double ATOMIC_UNIT_OF_ELECTRIC_QUADRUPOLE_MOM =4.4865515246e-40
```

C m<sup>2</sup>

Definition at line 96 of file [ccodata.h](#).

### 17.12.2.32 ATOMIC\_UNIT\_OF\_ENERGY

```
const double ATOMIC_UNIT_OF_ENERGY =4.3597447222071e-18
```

J

Definition at line 99 of file [ccodata.h](#).

### 17.12.2.33 ATOMIC\_UNIT\_OF\_FORCE

```
const double ATOMIC_UNIT_OF_FORCE =8.2387234983e-8
```

N

Definition at line 102 of file [ccodata.h](#).

### 17.12.2.34 ATOMIC\_UNIT\_OF\_LENGTH

```
const double ATOMIC_UNIT_OF_LENGTH =5.29177210903e-11
```

m

Definition at line 105 of file [ccodata.h](#).

**17.12.2.35 ATOMIC\_UNIT\_OF\_MAG\_\_DIPOLE\_MOM**

```
const double ATOMIC_UNIT_OF_MAG__DIPOLE_MOM =1.85480201566e-23
```

J T<sup>-1</sup>

Definition at line 108 of file [ccodata.h](#).

**17.12.2.36 ATOMIC\_UNIT\_OF\_MAG\_\_FLUX\_DENSITY**

```
const double ATOMIC_UNIT_OF_MAG__FLUX_DENSITY =2.35051756758e5
```

T

Definition at line 111 of file [ccodata.h](#).

**17.12.2.37 ATOMIC\_UNIT\_OF\_MAGNETIZABILITY**

```
const double ATOMIC_UNIT_OF_MAGNETIZABILITY =7.8910366008e-29
```

J T<sup>-2</sup>

Definition at line 114 of file [ccodata.h](#).

**17.12.2.38 ATOMIC\_UNIT\_OF\_MASS**

```
const double ATOMIC_UNIT_OF_MASS =9.1093837015e-31
```

kg

Definition at line 117 of file [ccodata.h](#).

**17.12.2.39 ATOMIC\_UNIT\_OF\_MOMENTUM**

```
const double ATOMIC_UNIT_OF_MOMENTUM =1.99285191410e-24
```

kg m s<sup>-1</sup>

Definition at line 120 of file [ccodata.h](#).



#### 17.12.2.40 ATOMIC\_UNIT\_OF\_PERMITTIVITY

```
const double ATOMIC_UNIT_OF_PERMITTIVITY =1.11265005545e-10
```

F m<sup>-1</sup>

Definition at line 123 of file [ccodata.h](#).

#### 17.12.2.41 ATOMIC\_UNIT\_OF\_TIME

```
const double ATOMIC_UNIT_OF_TIME =2.4188843265857e-17
```

s

Definition at line 126 of file [ccodata.h](#).

#### 17.12.2.42 ATOMIC\_UNIT\_OF\_VELOCITY

```
const double ATOMIC_UNIT_OF_VELOCITY =2.18769126364e6
```

m s<sup>-1</sup>

Definition at line 129 of file [ccodata.h](#).

#### 17.12.2.43 AVOGADRO\_CONSTANT

```
const double AVOGADRO_CONSTANT =6.02214076e23
```

mol<sup>-1</sup>

Definition at line 132 of file [ccodata.h](#).

#### 17.12.2.44 BOHR\_MAGNETON

```
const double BOHR_MAGNETON =9.2740100783e-24
```

J T<sup>-1</sup>

Definition at line 135 of file [ccodata.h](#).

**17.12.2.45 BOHR\_MAGNETON\_IN\_EV\_T**

```
const double BOHR_MAGNETON_IN_EV_T =5.7883818060e-5
```

eV T<sup>-1</sup>

Definition at line 138 of file [ccodata.h](#).

**17.12.2.46 BOHR\_MAGNETON\_IN\_HZ\_T**

```
const double BOHR_MAGNETON_IN_HZ_T =1.39962449361e10
```

Hz T<sup>-1</sup>

Definition at line 141 of file [ccodata.h](#).

**17.12.2.47 BOHR\_MAGNETON\_IN\_INVERSE\_METER\_PER\_TESLA**

```
const double BOHR_MAGNETON_IN_INVERSE_METER_PER_TESLA =46.686447783e0
```

m<sup>-1</sup> T<sup>-1</sup>

Definition at line 144 of file [ccodata.h](#).

**17.12.2.48 BOHR\_MAGNETON\_IN\_K\_T**

```
const double BOHR_MAGNETON_IN_K_T =0.67171381563e0
```

K T<sup>-1</sup>

Definition at line 147 of file [ccodata.h](#).

**17.12.2.49 BOHR\_RADIUS**

```
const double BOHR_RADIUS =5.29177210903e-11
```

m

Definition at line 150 of file [ccodata.h](#).

#### 17.12.2.50 BOLTZMANN\_CONSTANT

```
const double BOLTZMANN_CONSTANT =1.380649e-23
```

J K<sup>-1</sup>

Definition at line 153 of file [ccodata.h](#).

#### 17.12.2.51 BOLTZMANN\_CONSTANT\_IN\_EV\_K

```
const double BOLTZMANN_CONSTANT_IN_EV_K =8.617333262e-5
```

eV K<sup>-1</sup>

Definition at line 156 of file [ccodata.h](#).

#### 17.12.2.52 BOLTZMANN\_CONSTANT\_IN\_HZ\_K

```
const double BOLTZMANN_CONSTANT_IN_HZ_K =2.083661912e10
```

Hz K<sup>-1</sup>

Definition at line 159 of file [ccodata.h](#).

#### 17.12.2.53 BOLTZMANN\_CONSTANT\_IN\_INVERSE\_METER\_PER\_KELVIN

```
const double BOLTZMANN_CONSTANT_IN_INVERSE_METER_PER_KELVIN =69.50348004e0
```

m<sup>-1</sup> K<sup>-1</sup>

Definition at line 162 of file [ccodata.h](#).

#### 17.12.2.54 CHARACTERISTIC\_IMPEDANCE\_OF\_VACUUM

```
const double CHARACTERISTIC_IMPEDANCE_OF_VACUUM =376.730313668e0
```

ohm

Definition at line 165 of file [ccodata.h](#).

#### 17.12.2.55 CLASSICAL\_ELECTRON\_RADIUS

```
const double CLASSICAL_ELECTRON_RADIUS =2.8179403262e-15
```

m

Definition at line 168 of file [ccodata.h](#).

#### 17.12.2.56 COMPTON\_WAVELENGTH

```
const double COMPTON_WAVELENGTH =2.42631023867e-12
```

m

Definition at line 171 of file [ccodata.h](#).

#### 17.12.2.57 CONDUCTANCE\_QUANTUM

```
const double CONDUCTANCE_QUANTUM =7.748091729e-5
```

S

Definition at line 174 of file [ccodata.h](#).

#### 17.12.2.58 CONVENTIONAL\_VALUE\_OF\_AMPERE\_90

```
const double CONVENTIONAL_VALUE_OF_AMPERE_90 =1.00000008887e0
```

A

Definition at line 177 of file [ccodata.h](#).

#### 17.12.2.59 CONVENTIONAL\_VALUE\_OF\_COULOMB\_90

```
const double CONVENTIONAL_VALUE_OF_COULOMB_90 =1.00000008887e0
```

C

Definition at line 180 of file [ccodata.h](#).

#### 17.12.2.60 CONVENTIONAL\_VALUE\_OF\_FARAD\_90

```
const double CONVENTIONAL_VALUE_OF_FARAD_90 =0.99999998220e0
```

F

Definition at line 183 of file [ccodata.h](#).

#### 17.12.2.61 CONVENTIONAL\_VALUE\_OF\_HENRY\_90

```
const double CONVENTIONAL_VALUE_OF_HENRY_90 =1.00000001779e0
```

H

Definition at line 186 of file [ccodata.h](#).

#### 17.12.2.62 CONVENTIONAL\_VALUE\_OF\_JOSEPHSON\_CONSTANT

```
const double CONVENTIONAL_VALUE_OF_JOSEPHSON_CONSTANT =483597.9e9
```

Hz V<sup>-1</sup>

Definition at line 189 of file [ccodata.h](#).

#### 17.12.2.63 CONVENTIONAL\_VALUE\_OF\_OHM\_90

```
const double CONVENTIONAL_VALUE_OF_OHM_90 =1.00000001779e0
```

ohm

Definition at line 192 of file [ccodata.h](#).

#### 17.12.2.64 CONVENTIONAL\_VALUE\_OF\_VOLT\_90

```
const double CONVENTIONAL_VALUE_OF_VOLT_90 =1.00000010666e0
```

V

Definition at line 195 of file [ccodata.h](#).

#### 17.12.2.65 CONVENTIONAL\_VALUE\_OF\_VON\_KLITZING\_CONSTANT

```
const double CONVENTIONAL_VALUE_OF_VON_KLITZING_CONSTANT =25812.807e0
```

ohm

Definition at line 198 of file [ccodata.h](#).

#### 17.12.2.66 CONVENTIONAL\_VALUE\_OF\_WATT\_90

```
const double CONVENTIONAL_VALUE_OF_WATT_90 =1.00000019553e0
```

W

Definition at line 201 of file [ccodata.h](#).

#### 17.12.2.67 COPPER\_X\_UNIT

```
const double COPPER_X_UNIT =1.00207697e-13
```

m

Definition at line 204 of file [ccodata.h](#).

#### 17.12.2.68 DEUTERON\_ELECTRON\_MAG\_\_MOM\_\_RATIO

```
const double DEUTERON_ELECTRON_MAG__MOM__RATIO =-4.664345551e-4
```

Definition at line 207 of file [ccodata.h](#).

#### 17.12.2.69 DEUTERON\_ELECTRON\_MASS\_RATIO

```
const double DEUTERON_ELECTRON_MASS_RATIO =3670.48296788e0
```

Definition at line 210 of file [ccodata.h](#).

#### 17.12.2.70 DEUTERON\_G\_FACTOR

```
const double DEUTERON_G_FACTOR =0.8574382338e0
```

Definition at line 213 of file [ccodata.h](#).

#### 17.12.2.71 DEUTERON\_MAG\_\_MOM

```
const double DEUTERON_MAG__MOM =4.330735094e-27
```

J T<sup>-1</sup>

Definition at line 216 of file [ccodata.h](#).

#### 17.12.2.72 DEUTERON\_MAG\_\_MOM\_\_TO\_BOHR\_MAGNETON\_RATIO

```
const double DEUTERON_MAG__MOM__TO_BOHR_MAGNETON_RATIO =4.669754570e-4
```

Definition at line 219 of file [ccodata.h](#).

#### 17.12.2.73 DEUTERON\_MAG\_\_MOM\_\_TO\_NUCLEAR\_MAGNETON\_RATIO

```
const double DEUTERON_MAG__MOM__TO_NUCLEAR_MAGNETON_RATIO =0.8574382338e0
```

Definition at line 222 of file [ccodata.h](#).

#### 17.12.2.74 DEUTERON\_MASS

```
const double DEUTERON_MASS =3.3435837724e-27
```

kg

Definition at line 225 of file [ccodata.h](#).

#### 17.12.2.75 DEUTERON\_MASS\_ENERGY\_EQUIVALENT

```
const double DEUTERON_MASS_ENERGY_EQUIVALENT =3.00506323102e-10
```

J

Definition at line 228 of file [ccodata.h](#).

**17.12.2.76 DEUTERON\_MASS\_ENERGY\_EQUIVALENT\_IN\_MEV**

```
const double DEUTERON_MASS_ENERGY_EQUIVALENT_IN_MEV =1875.61294257e0
```

MeV

Definition at line 231 of file [ccodata.h](#).

**17.12.2.77 DEUTERON\_MASS\_IN\_U**

```
const double DEUTERON_MASS_IN_U =2.013553212745e0
```

u

Definition at line 234 of file [ccodata.h](#).

**17.12.2.78 DEUTERON\_MOLAR\_MASS**

```
const double DEUTERON_MOLAR_MASS =2.01355321205e-3
```

kg mol<sup>-1</sup>

Definition at line 237 of file [ccodata.h](#).

**17.12.2.79 DEUTERON\_NEUTRON\_MAG\_\_MOM\_\_RATIO**

```
const double DEUTERON_NEUTRON_MAG__MOM__RATIO =-0.44820653e0
```

Definition at line 240 of file [ccodata.h](#).

**17.12.2.80 DEUTERON\_PROTON\_MAG\_\_MOM\_\_RATIO**

```
const double DEUTERON_PROTON_MAG__MOM__RATIO =0.30701220939e0
```

Definition at line 243 of file [ccodata.h](#).



**17.12.2.81 DEUTERON\_PROTON\_MASS\_RATIO**

```
const double DEUTERON_PROTON_MASS_RATIO =1.99900750139e0
```

Definition at line 246 of file [ccodata.h](#).

**17.12.2.82 DEUTERON\_RELATIVE\_ATOMIC\_MASS**

```
const double DEUTERON_RELATIVE_ATOMIC_MASS =2.013553212745e0
```

Definition at line 249 of file [ccodata.h](#).

**17.12.2.83 DEUTERON\_RMS\_CHARGE\_RADIUS**

```
const double DEUTERON_RMS_CHARGE_RADIUS =2.12799e-15
```

m

Definition at line 252 of file [ccodata.h](#).

**17.12.2.84 ELECTRON\_CHARGE\_TO\_MASS\_QUOTIENT**

```
const double ELECTRON_CHARGE_TO_MASS_QUOTIENT ==-1.75882001076e11
```

C kg<sup>-1</sup>

Definition at line 255 of file [ccodata.h](#).

**17.12.2.85 ELECTRON\_DEUTERON\_MAG\_\_MOM\_\_RATIO**

```
const double ELECTRON_DEUTERON_MAG__MOM__RATIO ==-2143.9234915e0
```

Definition at line 258 of file [ccodata.h](#).

**17.12.2.86 ELECTRON\_DEUTERON\_MASS\_RATIO**

```
const double ELECTRON_DEUTERON_MASS_RATIO =2.724437107462e-4
```

Definition at line 261 of file [ccodata.h](#).

**17.12.2.87 ELECTRON\_G\_FACTOR**

```
const double ELECTRON_G_FACTOR = -2.00231930436256e0
```

Definition at line 264 of file [ccodata.h](#).

**17.12.2.88 ELECTRON\_GYROMAG\_\_RATIO**

```
const double ELECTRON_GYROMAG__RATIO = 1.76085963023e11
```

$\text{s}^{-1} \text{T}^{-1}$

Definition at line 267 of file [ccodata.h](#).

**17.12.2.89 ELECTRON\_GYROMAG\_\_RATIO\_IN\_MHZ\_T**

```
const double ELECTRON_GYROMAG__RATIO_IN_MHZ_T = 28024.9514242e0
```

$\text{MHz T}^{-1}$

Definition at line 270 of file [ccodata.h](#).

**17.12.2.90 ELECTRON\_HELION\_MASS\_RATIO**

```
const double ELECTRON_HELION_MASS_RATIO = 1.819543074573e-4
```

Definition at line 273 of file [ccodata.h](#).

**17.12.2.91 ELECTRON\_MAG\_\_MOM**

```
const double ELECTRON_MAG__MOM = -9.2847647043e-24
```

$\text{J T}^{-1}$

Definition at line 276 of file [ccodata.h](#).

**17.12.2.92 ELECTRON\_MAG\_\_MOM\_\_ANOMALY**

```
const double ELECTRON_MAG__MOM__ANOMALY =1.15965218128e-3
```

Definition at line 279 of file [ccodata.h](#).

**17.12.2.93 ELECTRON\_MAG\_\_MOM\_\_TO\_BOHR\_MAGNETON\_RATIO**

```
const double ELECTRON_MAG__MOM__TO_BOHR_MAGNETON_RATIO =-1.00115965218128e0
```

Definition at line 282 of file [ccodata.h](#).

**17.12.2.94 ELECTRON\_MAG\_\_MOM\_\_TO\_NUCLEAR\_MAGNETON\_RATIO**

```
const double ELECTRON_MAG__MOM__TO_NUCLEAR_MAGNETON_RATIO =-1838.28197188e0
```

Definition at line 285 of file [ccodata.h](#).

**17.12.2.95 ELECTRON\_MASS**

```
const double ELECTRON_MASS =9.1093837015e-31
```

kg

Definition at line 288 of file [ccodata.h](#).

**17.12.2.96 ELECTRON\_MASS\_ENERGY\_EQUIVALENT**

```
const double ELECTRON_MASS_ENERGY_EQUIVALENT =8.1871057769e-14
```

J

Definition at line 291 of file [ccodata.h](#).

**17.12.2.97 ELECTRON\_MASS\_ENERGY\_EQUIVALENT\_IN\_MEV**

```
const double ELECTRON_MASS_ENERGY_EQUIVALENT_IN_MEV =0.51099895000e0
```

MeV

Definition at line 294 of file [ccodata.h](#).

**17.12.2.98 ELECTRON\_MASS\_IN\_U**

```
const double ELECTRON_MASS_IN_U =5.48579909065e-4
```

u

Definition at line 297 of file [ccodata.h](#).

**17.12.2.99 ELECTRON\_MOLAR\_MASS**

```
const double ELECTRON_MOLAR_MASS =5.4857990888e-7
```

kg mol<sup>-1</sup>

Definition at line 300 of file [ccodata.h](#).

**17.12.2.100 ELECTRON\_MUON\_MAG\_\_MOM\_\_RATIO**

```
const double ELECTRON_MUON_MAG__MOM__RATIO =206.7669883e0
```

Definition at line 303 of file [ccodata.h](#).

**17.12.2.101 ELECTRON\_MUON\_MASS\_RATIO**

```
const double ELECTRON_MUON_MASS_RATIO =4.83633169e-3
```

Definition at line 306 of file [ccodata.h](#).

**17.12.2.102 ELECTRON\_NEUTRON\_MAG\_\_MOM\_\_RATIO**

```
const double ELECTRON_NEUTRON_MAG__MOM__RATIO =960.92050e0
```

Definition at line 309 of file [ccodata.h](#).

**17.12.2.103 ELECTRON\_NEUTRON\_MASS\_RATIO**

```
const double ELECTRON_NEUTRON_MASS_RATIO =5.4386734424e-4
```

Definition at line 312 of file [ccodata.h](#).

**17.12.2.104 ELECTRON\_PROTON\_MAG\_\_MOM\_\_RATIO**

```
const double ELECTRON_PROTON_MAG__MOM__RATIO =-658.21068789e0
```

Definition at line 315 of file [ccodata.h](#).

**17.12.2.105 ELECTRON\_PROTON\_MASS\_RATIO**

```
const double ELECTRON_PROTON_MASS_RATIO =5.44617021487e-4
```

Definition at line 318 of file [ccodata.h](#).

**17.12.2.106 ELECTRON\_RELATIVE\_ATOMIC\_MASS**

```
const double ELECTRON_RELATIVE_ATOMIC_MASS =5.48579909065e-4
```

Definition at line 321 of file [ccodata.h](#).

**17.12.2.107 ELECTRON\_TAU\_MASS\_RATIO**

```
const double ELECTRON_TAU_MASS_RATIO =2.87585e-4
```

Definition at line 324 of file [ccodata.h](#).

**17.12.2.108 ELECTRON\_TO\_ALPHA\_PARTICLE\_MASS\_RATIO**

```
const double ELECTRON_TO_ALPHA_PARTICLE_MASS_RATIO =1.370933554787e-4
```

Definition at line 327 of file [ccodata.h](#).

**17.12.2.109 ELECTRON\_TO\_SHIELDED\_HELION\_MAG\_\_MOM\_\_RATIO**

```
const double ELECTRON_TO_SHIELDED_HELION_MAG__MOM__RATIO =864.058257e0
```

Definition at line 330 of file [ccodata.h](#).

**17.12.2.110 ELECTRON\_TO\_SHIELDED\_PROTON\_MAG\_\_MOM\_\_RATIO**

```
const double ELECTRON_TO_SHIELDED_PROTON_MAG__MOM__RATIO = -658.2275971e0
```

Definition at line 333 of file [ccodata.h](#).

**17.12.2.111 ELECTRON\_TRITON\_MASS\_RATIO**

```
const double ELECTRON_TRITON_MASS_RATIO = 1.819200062251e-4
```

Definition at line 336 of file [ccodata.h](#).

**17.12.2.112 ELECTRON\_VOLT**

```
const double ELECTRON_VOLT = 1.602176634e-19
```

J

Definition at line 339 of file [ccodata.h](#).

**17.12.2.113 ELECTRON\_VOLT\_ATOMIC\_MASS\_UNIT\_RELATIONSHIP**

```
const double ELECTRON_VOLT_ATOMIC_MASS_UNIT_RELATIONSHIP = 1.07354410233e-9
```

u

Definition at line 342 of file [ccodata.h](#).

**17.12.2.114 ELECTRON\_VOLT\_HARTREE\_RELATIONSHIP**

```
const double ELECTRON_VOLT_HARTREE_RELATIONSHIP = 3.6749322175655e-2
```

E<sub>h</sub>

Definition at line 345 of file [ccodata.h](#).

**17.12.2.115 ELECTRON\_VOLT\_HERTZ\_RELATIONSHIP**

```
const double ELECTRON_VOLT_HERTZ_RELATIONSHIP =2.417989242e14
```

Hz

Definition at line 348 of file [ccodata.h](#).

**17.12.2.116 ELECTRON\_VOLT\_INVERSE\_METER\_RELATIONSHIP**

```
const double ELECTRON_VOLT_INVERSE_METER_RELATIONSHIP =8.065543937e5
```

$\text{m}^{-1}$

Definition at line 351 of file [ccodata.h](#).

**17.12.2.117 ELECTRON\_VOLT\_JOULE\_RELATIONSHIP**

```
const double ELECTRON_VOLT_JOULE_RELATIONSHIP =1.602176634e-19
```

J

Definition at line 354 of file [ccodata.h](#).

**17.12.2.118 ELECTRON\_VOLT\_KELVIN\_RELATIONSHIP**

```
const double ELECTRON_VOLT_KELVIN_RELATIONSHIP =1.160451812e4
```

K

Definition at line 357 of file [ccodata.h](#).

**17.12.2.119 ELECTRON\_VOLT\_KILOGRAM\_RELATIONSHIP**

```
const double ELECTRON_VOLT_KILOGRAM_RELATIONSHIP =1.782661921e-36
```

kg

Definition at line 360 of file [ccodata.h](#).

**17.12.2.120 ELEMENTARY\_CHARGE**

```
const double ELEMENTARY_CHARGE =1.602176634e-19
```

C

Definition at line [363](#) of file [ccodata.h](#).

**17.12.2.121 ELEMENTARY\_CHARGE\_OVER\_H\_BAR**

```
const double ELEMENTARY_CHARGE_OVER_H_BAR =1.519267447e15
```

A J<sup>-1</sup>

Definition at line [366](#) of file [ccodata.h](#).

**17.12.2.122 FARADAY\_CONSTANT**

```
const double FARADAY_CONSTANT =96485.33212e0
```

C mol<sup>-1</sup>

Definition at line [369](#) of file [ccodata.h](#).

**17.12.2.123 FERMI\_COUPLING\_CONSTANT**

```
const double FERMI_COUPLING_CONSTANT =1.1663787e-5
```

GeV<sup>-2</sup>

Definition at line [372](#) of file [ccodata.h](#).

**17.12.2.124 FINE\_STRUCTURE\_CONSTANT**

```
const double FINE_STRUCTURE_CONSTANT =7.2973525693e-3
```

Definition at line [375](#) of file [ccodata.h](#).



**17.12.2.125 FIRST\_RADIATION\_CONSTANT**

```
const double FIRST_RADIATION_CONSTANT =3.741771852e-16
```

W m<sup>2</sup>

Definition at line 378 of file [ccodata.h](#).

**17.12.2.126 FIRST\_RADIATION\_CONSTANT\_FOR\_SPECTRAL\_RADIANCE**

```
const double FIRST_RADIATION_CONSTANT_FOR_SPECTRAL_RADIANCE =1.191042972e-16
```

W m<sup>2</sup> sr<sup>-1</sup>

Definition at line 381 of file [ccodata.h](#).

**17.12.2.127 HARTREE\_ATOMIC\_MASS\_UNIT\_RELATIONSHIP**

```
const double HARTREE_ATOMIC_MASS_UNIT_RELATIONSHIP =2.92126232205e-8
```

u

Definition at line 384 of file [ccodata.h](#).

**17.12.2.128 HARTREE\_ELECTRON\_VOLT\_RELATIONSHIP**

```
const double HARTREE_ELECTRON_VOLT_RELATIONSHIP =27.211386245988e0
```

eV

Definition at line 387 of file [ccodata.h](#).

**17.12.2.129 HARTREE\_ENERGY**

```
const double HARTREE_ENERGY =4.3597447222071e-18
```

J

Definition at line 390 of file [ccodata.h](#).

**17.12.2.130 HARTREE\_ENERGY\_IN\_EV**

```
const double HARTREE_ENERGY_IN_EV =27.211386245988e0
```

eV

Definition at line 393 of file [ccodata.h](#).

**17.12.2.131 HARTREE\_HERTZ\_RELATIONSHIP**

```
const double HARTREE_HERTZ_RELATIONSHIP =6.579683920502e15
```

Hz

Definition at line 396 of file [ccodata.h](#).

**17.12.2.132 HARTREE\_INVERSE\_METER\_RELATIONSHIP**

```
const double HARTREE_INVERSE_METER_RELATIONSHIP =2.1947463136320e7
```

m<sup>-1</sup>

Definition at line 399 of file [ccodata.h](#).

**17.12.2.133 HARTREE\_JOULE\_RELATIONSHIP**

```
const double HARTREE_JOULE_RELATIONSHIP =4.3597447222071e-18
```

J

Definition at line 402 of file [ccodata.h](#).

**17.12.2.134 HARTREE\_KELVIN\_RELATIONSHIP**

```
const double HARTREE_KELVIN_RELATIONSHIP =3.1577502480407e5
```

K

Definition at line 405 of file [ccodata.h](#).

**17.12.2.135 HARTREE\_KILOGRAM\_RELATIONSHIP**

```
const double HARTREE_KILOGRAM_RELATIONSHIP =4.8508702095432e-35
```

kg

Definition at line 408 of file [ccodata.h](#).

**17.12.2.136 HELION\_ELECTRON\_MASS\_RATIO**

```
const double HELION_ELECTRON_MASS_RATIO =5495.88528007e0
```

Definition at line 411 of file [ccodata.h](#).

**17.12.2.137 HELION\_G\_FACTOR**

```
const double HELION_G_FACTOR =-4.255250615e0
```

Definition at line 414 of file [ccodata.h](#).

**17.12.2.138 HELION\_MAG\_\_MOM**

```
const double HELION_MAG__MOM =-1.074617532e-26
```

$\text{J T}^{-1}$

Definition at line 417 of file [ccodata.h](#).

**17.12.2.139 HELION\_MAG\_\_MOM\_\_TO\_BOHR\_MAGNETON\_RATIO**

```
const double HELION_MAG__MOM__TO_BOHR_MAGNETON_RATIO =-1.158740958e-3
```

Definition at line 420 of file [ccodata.h](#).

**17.12.2.140 HELION\_MAG\_\_MOM\_\_TO\_NUCLEAR\_MAGNETON\_RATIO**

```
const double HELION_MAG__MOM__TO_NUCLEAR_MAGNETON_RATIO =-2.127625307e0
```

Definition at line 423 of file [ccodata.h](#).

**17.12.2.141 HELION\_MASS**

```
const double HELION_MASS =5.0064127796e-27
```

kg

Definition at line 426 of file [ccodata.h](#).

**17.12.2.142 HELION\_MASS\_ENERGY\_EQUIVALENT**

```
const double HELION_MASS_ENERGY_EQUIVALENT =4.4995394125e-10
```

J

Definition at line 429 of file [ccodata.h](#).

**17.12.2.143 HELION\_MASS\_ENERGY\_EQUIVALENT\_IN\_MEV**

```
const double HELION_MASS_ENERGY_EQUIVALENT_IN_MEV =2808.39160743e0
```

MeV

Definition at line 432 of file [ccodata.h](#).

**17.12.2.144 HELION\_MASS\_IN\_U**

```
const double HELION_MASS_IN_U =3.014932247175e0
```

u

Definition at line 435 of file [ccodata.h](#).

**17.12.2.145 HELION\_MOLAR\_MASS**

```
const double HELION_MOLAR_MASS =3.01493224613e-3
```

kg mol<sup>-1</sup>

Definition at line 438 of file [ccodata.h](#).

**17.12.2.146 HELION\_PROTON\_MASS\_RATIO**

```
const double HELION_PROTON_MASS_RATIO =2.99315267167e0
```

Definition at line 441 of file [ccodata.h](#).

**17.12.2.147 HELION\_RELATIVE\_ATOMIC\_MASS**

```
const double HELION_RELATIVE_ATOMIC_MASS =3.014932247175e0
```

Definition at line 444 of file [ccodata.h](#).

**17.12.2.148 HELION\_SHIELDING\_SHIFT**

```
const double HELION_SHIELDING_SHIFT =5.996743e-5
```

Definition at line 447 of file [ccodata.h](#).

**17.12.2.149 HERTZ\_ATOMIC\_MASS\_UNIT\_RELATIONSHIP**

```
const double HERTZ_ATOMIC_MASS_UNIT_RELATIONSHIP =4.4398216652e-24
```

u

Definition at line 450 of file [ccodata.h](#).

**17.12.2.150 HERTZ\_ELECTRON\_VOLT\_RELATIONSHIP**

```
const double HERTZ_ELECTRON_VOLT_RELATIONSHIP =4.135667696e-15
```

eV

Definition at line 453 of file [ccodata.h](#).

**17.12.2.151 HERTZ\_HARTREE\_RELATIONSHIP**

```
const double HERTZ_HARTREE_RELATIONSHIP =1.5198298460570e-16
```

E<sub>h</sub>

Definition at line 456 of file [ccodata.h](#).

**17.12.2.152 HERTZ\_INVERSE\_METER\_RELATIONSHIP**

```
const double HERTZ_INVERSE_METER_RELATIONSHIP =3.335640951e-9
```

$\text{m}^{-1}$

Definition at line [459](#) of file [ccodata.h](#).

**17.12.2.153 HERTZ\_JOULE\_RELATIONSHIP**

```
const double HERTZ_JOULE_RELATIONSHIP =6.62607015e-34
```

J

Definition at line [462](#) of file [ccodata.h](#).

**17.12.2.154 HERTZ\_KELVIN\_RELATIONSHIP**

```
const double HERTZ_KELVIN_RELATIONSHIP =4.799243073e-11
```

K

Definition at line [465](#) of file [ccodata.h](#).

**17.12.2.155 HERTZ\_KILOGRAM\_RELATIONSHIP**

```
const double HERTZ_KILOGRAM_RELATIONSHIP =7.372497323e-51
```

kg

Definition at line [468](#) of file [ccodata.h](#).

**17.12.2.156 HYPERFINE\_TRANSITION\_FREQUENCY\_OF\_CS\_133**

```
const double HYPERFINE_TRANSITION_FREQUENCY_OF_CS_133 =9192631770.0e0
```

Hz

Definition at line [471](#) of file [ccodata.h](#).

**17.12.2.157 INVERSE\_FINE\_STRUCTURE\_CONSTANT**

```
const double INVERSE_FINE_STRUCTURE_CONSTANT =137.035999084e0
```

Definition at line [474](#) of file [ccodata.h](#).

**17.12.2.158 INVERSE\_METER\_ATOMIC\_MASS\_UNIT\_RELATIONSHIP**

```
const double INVERSE_METER_ATOMIC_MASS_UNIT_RELATIONSHIP =1.33102505010e-15
```

u

Definition at line [477](#) of file [ccodata.h](#).

**17.12.2.159 INVERSE\_METER\_ELECTRON\_VOLT\_RELATIONSHIP**

```
const double INVERSE_METER_ELECTRON_VOLT_RELATIONSHIP =1.239841984e-6
```

eV

Definition at line [480](#) of file [ccodata.h](#).

**17.12.2.160 INVERSE\_METER\_HARTREE\_RELATIONSHIP**

```
const double INVERSE_METER_HARTREE_RELATIONSHIP =4.5563352529120e-8
```

E<sub>h</sub>

Definition at line [483](#) of file [ccodata.h](#).

**17.12.2.161 INVERSE\_METER\_HERTZ\_RELATIONSHIP**

```
const double INVERSE_METER_HERTZ_RELATIONSHIP =299792458.0e0
```

Hz

Definition at line [486](#) of file [ccodata.h](#).

**17.12.2.162 INVERSE\_METER\_JOULE\_RELATIONSHIP**

```
const double INVERSE_METER_JOULE_RELATIONSHIP =1.986445857e-25
```

J

Definition at line 489 of file [ccodata.h](#).

**17.12.2.163 INVERSE\_METER\_KELVIN\_RELATIONSHIP**

```
const double INVERSE_METER_KELVIN_RELATIONSHIP =1.438776877e-2
```

K

Definition at line 492 of file [ccodata.h](#).

**17.12.2.164 INVERSE\_METER\_KILOGRAM\_RELATIONSHIP**

```
const double INVERSE_METER_KILOGRAM_RELATIONSHIP =2.210219094e-42
```

kg

Definition at line 495 of file [ccodata.h](#).

**17.12.2.165 INVERSE\_OF\_CONDUCTANCE\_QUANTUM**

```
const double INVERSE_OF_CONDUCTANCE_QUANTUM =12906.40372e0
```

ohm

Definition at line 498 of file [ccodata.h](#).

**17.12.2.166 JOSEPHSON\_CONSTANT**

```
const double JOSEPHSON_CONSTANT =483597.8484e9
```

Hz V<sup>-1</sup>

Definition at line 501 of file [ccodata.h](#).



**17.12.2.167 JOULE\_ATOMIC\_MASS\_UNIT\_RELATIONSHIP**

```
const double JOULE_ATOMIC_MASS_UNIT_RELATIONSHIP =6.7005352565e9
```

u

Definition at line 504 of file [ccodata.h](#).

**17.12.2.168 JOULE\_ELECTRON\_VOLT\_RELATIONSHIP**

```
const double JOULE_ELECTRON_VOLT_RELATIONSHIP =6.241509074e18
```

eV

Definition at line 507 of file [ccodata.h](#).

**17.12.2.169 JOULE\_HARTREE\_RELATIONSHIP**

```
const double JOULE_HARTREE_RELATIONSHIP =2.2937122783963e17
```

E<sub>h</sub>

Definition at line 510 of file [ccodata.h](#).

**17.12.2.170 JOULE\_HERTZ\_RELATIONSHIP**

```
const double JOULE_HERTZ_RELATIONSHIP =1.509190179e33
```

Hz

Definition at line 513 of file [ccodata.h](#).

**17.12.2.171 JOULE\_INVERSE\_METER\_RELATIONSHIP**

```
const double JOULE_INVERSE_METER_RELATIONSHIP =5.034116567e24
```

m<sup>-1</sup>

Definition at line 516 of file [ccodata.h](#).

**17.12.2.172 JOULE\_KELVIN\_RELATIONSHIP**

```
const double JOULE_KELVIN_RELATIONSHIP =7.242970516e22
```

K

Definition at line 519 of file [ccodata.h](#).

**17.12.2.173 JOULE\_KILOGRAM\_RELATIONSHIP**

```
const double JOULE_KILOGRAM_RELATIONSHIP =1.112650056e-17
```

kg

Definition at line 522 of file [ccodata.h](#).

**17.12.2.174 KELVIN\_ATOMIC\_MASS\_UNIT\_RELATIONSHIP**

```
const double KELVIN_ATOMIC_MASS_UNIT_RELATIONSHIP =9.2510873014e-14
```

u

Definition at line 525 of file [ccodata.h](#).

**17.12.2.175 KELVIN\_ELECTRON\_VOLT\_RELATIONSHIP**

```
const double KELVIN_ELECTRON_VOLT_RELATIONSHIP =8.617333262e-5
```

eV

Definition at line 528 of file [ccodata.h](#).

**17.12.2.176 KELVIN\_HARTREE\_RELATIONSHIP**

```
const double KELVIN_HARTREE_RELATIONSHIP =3.1668115634556e-6
```

E<sub>h</sub>

Definition at line 531 of file [ccodata.h](#).

**17.12.2.177 KELVIN\_HERTZ\_RELATIONSHIP**

```
const double KELVIN_HERTZ_RELATIONSHIP =2.083661912e10
```

Hz

Definition at line 534 of file [ccodata.h](#).

**17.12.2.178 KELVIN\_INVERSE\_METER\_RELATIONSHIP**

```
const double KELVIN_INVERSE_METER_RELATIONSHIP =69.50348004e0
```

$\text{m}^{-1}$

Definition at line 537 of file [ccodata.h](#).

**17.12.2.179 KELVIN\_JOULE\_RELATIONSHIP**

```
const double KELVIN_JOULE_RELATIONSHIP =1.380649e-23
```

J

Definition at line 540 of file [ccodata.h](#).

**17.12.2.180 KELVIN\_KILOGRAM\_RELATIONSHIP**

```
const double KELVIN_KILOGRAM_RELATIONSHIP =1.536179187e-40
```

kg

Definition at line 543 of file [ccodata.h](#).

**17.12.2.181 KILOGRAM\_ATOMIC\_MASS\_UNIT\_RELATIONSHIP**

```
const double KILOGRAM_ATOMIC_MASS_UNIT_RELATIONSHIP =6.0221407621e26
```

u

Definition at line 546 of file [ccodata.h](#).

**17.12.2.182 KILOGRAM\_ELECTRON\_VOLT\_RELATIONSHIP**

```
const double KILOGRAM_ELECTRON_VOLT_RELATIONSHIP =5.609588603e35
```

eV

Definition at line [549](#) of file [ccodata.h](#).

**17.12.2.183 KILOGRAM\_HARTREE\_RELATIONSHIP**

```
const double KILOGRAM_HARTREE_RELATIONSHIP =2.0614857887409e34
```

E<sub>h</sub>

Definition at line [552](#) of file [ccodata.h](#).

**17.12.2.184 KILOGRAM\_HERTZ\_RELATIONSHIP**

```
const double KILOGRAM_HERTZ_RELATIONSHIP =1.356392489e50
```

Hz

Definition at line [555](#) of file [ccodata.h](#).

**17.12.2.185 KILOGRAM\_INVERSE\_METER\_RELATIONSHIP**

```
const double KILOGRAM_INVERSE_METER_RELATIONSHIP =4.524438335e41
```

m<sup>-1</sup>

Definition at line [558](#) of file [ccodata.h](#).

**17.12.2.186 KILOGRAM\_JOULE\_RELATIONSHIP**

```
const double KILOGRAM_JOULE_RELATIONSHIP =8.987551787e16
```

J

Definition at line [561](#) of file [ccodata.h](#).

**17.12.2.187 KILOGRAM\_KELVIN\_RELATIONSHIP**

```
const double KILOGRAM_KELVIN_RELATIONSHIP =6.509657260e39
```

K

Definition at line 564 of file [ccodata.h](#).

**17.12.2.188 LATTICE\_PARAMETER\_OF\_SILICON**

```
const double LATTICE_PARAMETER_OF_SILICON =5.431020511e-10
```

m

Definition at line 567 of file [ccodata.h](#).

**17.12.2.189 LATTICE\_SPACING\_OF\_IDEAL\_SI\_\_220**

```
const double LATTICE_SPACING_OF_IDEAL_SI__220 =1.920155716e-10
```

m

Definition at line 570 of file [ccodata.h](#).

**17.12.2.190 LOSCHMIDT\_CONSTANT\_\_273\_15\_K\_\_100\_KPA**

```
const double LOSCHMIDT_CONSTANT__273_15_K__100_KPA =2.651645804e25
```

m<sup>-3</sup>

Definition at line 573 of file [ccodata.h](#).

**17.12.2.191 LOSCHMIDT\_CONSTANT\_\_273\_15\_K\_\_101\_325\_KPA**

```
const double LOSCHMIDT_CONSTANT__273_15_K__101_325_KPA =2.686780111e25
```

m<sup>-3</sup>

Definition at line 576 of file [ccodata.h](#).

**17.12.2.192 LUMINOUS\_EFFICACY**

```
const double LUMINOUS_EFFICACY =683.0e0
```

lm W<sup>-1</sup>

Definition at line 579 of file [ccodata.h](#).

**17.12.2.193 MAG\_FLUX\_QUANTUM**

```
const double MAG_FLUX_QUANTUM =2.067833848e-15
```

Wb

Definition at line 582 of file [ccodata.h](#).

**17.12.2.194 MOLAR\_GAS\_CONSTANT**

```
const double MOLAR_GAS_CONSTANT =8.314462618e0
```

J mol<sup>-1</sup> K<sup>-1</sup>

Definition at line 585 of file [ccodata.h](#).

**17.12.2.195 MOLAR\_MASS\_CONSTANT**

```
const double MOLAR_MASS_CONSTANT =0.99999999965e-3
```

kg mol<sup>-1</sup>

Definition at line 588 of file [ccodata.h](#).

**17.12.2.196 MOLAR\_MASS\_OF\_CARBON\_12**

```
const double MOLAR_MASS_OF_CARBON_12 =11.9999999958e-3
```

kg mol<sup>-1</sup>

Definition at line 591 of file [ccodata.h](#).

**17.12.2.197 MOLAR\_PLANCK\_CONSTANT**

```
const double MOLAR_PLANCK_CONSTANT =3.990312712e-10
```

J Hz<sup>-1</sup> mol<sup>-1</sup>

Definition at line 594 of file [ccodata.h](#).

**17.12.2.198 MOLAR\_VOLUME\_OF IDEAL GAS\_\_273\_15\_K\_\_100\_KPA**

```
const double MOLAR_VOLUME_OF IDEAL GAS__273_15_K__100_KPA =22.71095464e-3
```

m<sup>3</sup> mol<sup>-1</sup>

Definition at line 597 of file [ccodata.h](#).

**17.12.2.199 MOLAR\_VOLUME\_OF IDEAL GAS\_\_273\_15\_K\_\_101\_325\_KPA**

```
const double MOLAR_VOLUME_OF IDEAL GAS__273_15_K__101_325_KPA =22.41396954e-3
```

m<sup>3</sup> mol<sup>-1</sup>

Definition at line 600 of file [ccodata.h](#).

**17.12.2.200 MOLAR\_VOLUME\_OF SILICON**

```
const double MOLAR_VOLUME_OF SILICON =1.205883199e-5
```

m<sup>3</sup> mol<sup>-1</sup>

Definition at line 603 of file [ccodata.h](#).

**17.12.2.201 MOLYBDENUM\_X\_UNIT**

```
const double MOLYBDENUM_X_UNIT =1.00209952e-13
```

m

Definition at line 606 of file [ccodata.h](#).

**17.12.2.202 MUON\_COMPTON\_WAVELENGTH**

```
const double MUON_COMPTON_WAVELENGTH =1.173444110e-14  
m
```

Definition at line 609 of file [ccodata.h](#).

**17.12.2.203 MUON\_ELECTRON\_MASS\_RATIO**

```
const double MUON_ELECTRON_MASS_RATIO =206.7682830e0
```

Definition at line 612 of file [ccodata.h](#).

**17.12.2.204 MUON\_G\_FACTOR**

```
const double MUON_G_FACTOR =-2.0023318418e0
```

Definition at line 615 of file [ccodata.h](#).

**17.12.2.205 MUON\_MAG\_\_MOM**

```
const double MUON_MAG__MOM =-4.49044830e-26
```

$J T^{-1}$

Definition at line 618 of file [ccodata.h](#).

**17.12.2.206 MUON\_MAG\_\_MOM\_\_ANOMALY**

```
const double MUON_MAG__MOM__ANOMALY =1.16592089e-3
```

Definition at line 621 of file [ccodata.h](#).

**17.12.2.207 MUON\_MAG\_\_MOM\_\_TO\_BOHR\_MAGNETON\_RATIO**

```
const double MUON_MAG__MOM__TO_BOHR_MAGNETON_RATIO =-4.84197047e-3
```

Definition at line 624 of file [ccodata.h](#).



**17.12.2.208 MUON\_MAG\_\_MOM\_\_TO\_NUCLEAR\_MAGNETON\_RATIO**

```
const double MUON_MAG__MOM__TO_NUCLEAR_MAGNETON_RATIO =-8.89059703e0
```

Definition at line [627](#) of file [ccodata.h](#).

**17.12.2.209 MUON\_MASS**

```
const double MUON_MASS =1.883531627e-28
```

kg

Definition at line [630](#) of file [ccodata.h](#).

**17.12.2.210 MUON\_MASS\_ENERGY\_EQUIVALENT**

```
const double MUON_MASS_ENERGY_EQUIVALENT =1.692833804e-11
```

J

Definition at line [633](#) of file [ccodata.h](#).

**17.12.2.211 MUON\_MASS\_ENERGY\_EQUIVALENT\_IN\_MEV**

```
const double MUON_MASS_ENERGY_EQUIVALENT_IN_MEV =105.6583755e0
```

MeV

Definition at line [636](#) of file [ccodata.h](#).

**17.12.2.212 MUON\_MASS\_IN\_U**

```
const double MUON_MASS_IN_U =0.1134289259e0
```

u

Definition at line [639](#) of file [ccodata.h](#).

**17.12.2.213 MUON\_MOLAR\_MASS**

```
const double MUON_MOLAR_MASS =1.134289259e-4
```

kg mol<sup>-1</sup>

Definition at line 642 of file [ccodata.h](#).

**17.12.2.214 MUON\_NEUTRON\_MASS\_RATIO**

```
const double MUON_NEUTRON_MASS_RATIO =0.1124545170e0
```

Definition at line 645 of file [ccodata.h](#).

**17.12.2.215 MUON\_PROTON\_MAG\_\_MOM\_\_RATIO**

```
const double MUON_PROTON_MAG__MOM__RATIO ==-3.183345142e0
```

Definition at line 648 of file [ccodata.h](#).

**17.12.2.216 MUON\_PROTON\_MASS\_RATIO**

```
const double MUON_PROTON_MASS_RATIO =0.1126095264e0
```

Definition at line 651 of file [ccodata.h](#).

**17.12.2.217 MUON\_TAU\_MASS\_RATIO**

```
const double MUON_TAU_MASS_RATIO =5.94635e-2
```

Definition at line 654 of file [ccodata.h](#).

**17.12.2.218 NATURAL\_UNIT\_OF\_ACTION**

```
const double NATURAL_UNIT_OF_ACTION =1.054571817e-34
```

J s

Definition at line 657 of file [ccodata.h](#).

**17.12.2.219 NATURAL\_UNIT\_OF\_ACTION\_IN\_EV\_S**

```
const double NATURAL_UNIT_OF_ACTION_IN_EV_S =6.582119569e-16
```

eV s

Definition at line 660 of file [ccodata.h](#).

**17.12.2.220 NATURAL\_UNIT\_OF\_ENERGY**

```
const double NATURAL_UNIT_OF_ENERGY =8.1871057769e-14
```

J

Definition at line 663 of file [ccodata.h](#).

**17.12.2.221 NATURAL\_UNIT\_OF\_ENERGY\_IN\_MEV**

```
const double NATURAL_UNIT_OF_ENERGY_IN_MEV =0.51099895000e0
```

MeV

Definition at line 666 of file [ccodata.h](#).

**17.12.2.222 NATURAL\_UNIT\_OF\_LENGTH**

```
const double NATURAL_UNIT_OF_LENGTH =3.8615926796e-13
```

m

Definition at line 669 of file [ccodata.h](#).

**17.12.2.223 NATURAL\_UNIT\_OF\_MASS**

```
const double NATURAL_UNIT_OF_MASS =9.1093837015e-31
```

kg

Definition at line 672 of file [ccodata.h](#).

**17.12.2.224 NATURAL\_UNIT\_OF\_MOMENTUM**

```
const double NATURAL_UNIT_OF_MOMENTUM =2.73092453075e-22
```

kg m s<sup>-1</sup>

Definition at line 675 of file [ccodata.h](#).

**17.12.2.225 NATURAL\_UNIT\_OF\_MOMENTUM\_IN\_MEV\_C**

```
const double NATURAL_UNIT_OF_MOMENTUM_IN_MEV_C =0.51099895000e0
```

MeV/c

Definition at line 678 of file [ccodata.h](#).

**17.12.2.226 NATURAL\_UNIT\_OF\_TIME**

```
const double NATURAL_UNIT_OF_TIME =1.28808866819e-21
```

s

Definition at line 681 of file [ccodata.h](#).

**17.12.2.227 NATURAL\_UNIT\_OF\_VELOCITY**

```
const double NATURAL_UNIT_OF_VELOCITY =299792458.0e0
```

m s<sup>-1</sup>

Definition at line 684 of file [ccodata.h](#).

**17.12.2.228 NEUTRON\_COMPTON\_WAVELENGTH**

```
const double NEUTRON_COMPTON_WAVELENGTH =1.31959090581e-15
```

m

Definition at line 687 of file [ccodata.h](#).

**17.12.2.229 NEUTRON\_ELECTRON\_MAG\_\_MOM\_\_RATIO**

```
const double NEUTRON_ELECTRON_MAG__MOM__RATIO =1.04066882e-3
```

Definition at line 690 of file [ccodata.h](#).

**17.12.2.230 NEUTRON\_ELECTRON\_MASS\_RATIO**

```
const double NEUTRON_ELECTRON_MASS_RATIO =1838.68366173e0
```

Definition at line 693 of file [ccodata.h](#).

**17.12.2.231 NEUTRON\_G\_FACTOR**

```
const double NEUTRON_G_FACTOR =-3.82608545e0
```

Definition at line 696 of file [ccodata.h](#).

**17.12.2.232 NEUTRON\_GYROMAG\_\_RATIO**

```
const double NEUTRON_GYROMAG__RATIO =1.83247171e8
```

$\text{s}^{-1} \text{T}^{-1}$

Definition at line 699 of file [ccodata.h](#).

**17.12.2.233 NEUTRON\_GYROMAG\_\_RATIO\_IN\_MHZ\_T**

```
const double NEUTRON_GYROMAG__RATIO_IN_MHZ_T =29.1646931e0
```

$\text{MHz T}^{-1}$

Definition at line 702 of file [ccodata.h](#).

**17.12.2.234 NEUTRON\_MAG\_\_MOM**

```
const double NEUTRON_MAG__MOM =-9.6623651e-27
```

$\text{J T}^{-1}$

Definition at line 705 of file [ccodata.h](#).

**17.12.2.235 NEUTRON\_MAG\_\_MOM\_\_TO\_BOHR\_MAGNETON\_RATIO**

```
const double NEUTRON_MAG__MOM__TO_BOHR_MAGNETON_RATIO =-1.04187563e-3
```

Definition at line 708 of file [ccodata.h](#).

**17.12.2.236 NEUTRON\_MAG\_\_MOM\_\_TO\_NUCLEAR\_MAGNETON\_RATIO**

```
const double NEUTRON_MAG__MOM__TO_NUCLEAR_MAGNETON_RATIO =-1.91304273e0
```

Definition at line 711 of file [ccodata.h](#).

**17.12.2.237 NEUTRON\_MASS**

```
const double NEUTRON_MASS =1.67492749804e-27
```

kg

Definition at line 714 of file [ccodata.h](#).

**17.12.2.238 NEUTRON\_MASS\_ENERGY\_EQUIVALENT**

```
const double NEUTRON_MASS_ENERGY_EQUIVALENT =1.50534976287e-10
```

J

Definition at line 717 of file [ccodata.h](#).

**17.12.2.239 NEUTRON\_MASS\_ENERGY\_EQUIVALENT\_IN\_MEV**

```
const double NEUTRON_MASS_ENERGY_EQUIVALENT_IN_MEV =939.56542052e0
```

MeV

Definition at line 720 of file [ccodata.h](#).

**17.12.2.240 NEUTRON\_MASS\_IN\_U**

```
const double NEUTRON_MASS_IN_U =1.00866491595e0
```

u

Definition at line 723 of file [ccodata.h](#).

**17.12.2.241 NEUTRON\_MOLAR\_MASS**

```
const double NEUTRON_MOLAR_MASS =1.00866491560e-3
```

kg mol<sup>-1</sup>

Definition at line 726 of file [ccodata.h](#).

**17.12.2.242 NEUTRON\_MUON\_MASS\_RATIO**

```
const double NEUTRON_MUON_MASS_RATIO =8.89248406e0
```

Definition at line 729 of file [ccodata.h](#).

**17.12.2.243 NEUTRON\_PROTON\_MAG\_\_MOM\_\_RATIO**

```
const double NEUTRON_PROTON_MAG__MOM__RATIO =-0.68497934e0
```

Definition at line 732 of file [ccodata.h](#).

**17.12.2.244 NEUTRON\_PROTON\_MASS\_DIFFERENCE**

```
const double NEUTRON_PROTON_MASS_DIFFERENCE =2.30557435e-30
```

kg

Definition at line 735 of file [ccodata.h](#).

**17.12.2.245 NEUTRON\_PROTON\_MASS\_DIFFERENCE\_ENERGY\_EQUIVALENT**

```
const double NEUTRON_PROTON_MASS_DIFFERENCE_ENERGY_EQUIVALENT =2.07214689e-13
```

J

Definition at line 738 of file [ccodata.h](#).

**17.12.2.246 NEUTRON\_PROTON\_MASS\_DIFFERENCE\_ENERGY\_EQUIVALENT\_IN\_MEV**

```
const double NEUTRON_PROTON_MASS_DIFFERENCE_ENERGY_EQUIVALENT_IN_MEV =1.29333236e0
```

MeV

Definition at line 741 of file [ccodata.h](#).

**17.12.2.247 NEUTRON\_PROTON\_MASS\_DIFFERENCE\_IN\_U**

```
const double NEUTRON_PROTON_MASS_DIFFERENCE_IN_U =1.38844933e-3
```

u

Definition at line 744 of file [ccodata.h](#).

**17.12.2.248 NEUTRON\_PROTON\_MASS\_RATIO**

```
const double NEUTRON_PROTON_MASS_RATIO =1.00137841931e0
```

Definition at line 747 of file [ccodata.h](#).

**17.12.2.249 NEUTRON\_RELATIVE\_ATOMIC\_MASS**

```
const double NEUTRON_RELATIVE_ATOMIC_MASS =1.00866491595e0
```

Definition at line 750 of file [ccodata.h](#).



**17.12.2.250 NEUTRON\_TAU\_MASS\_RATIO**

```
const double NEUTRON_TAU_MASS_RATIO =0.528779e0
```

Definition at line 753 of file [ccodata.h](#).

**17.12.2.251 NEUTRON\_TO\_SHIELDED\_PROTON\_MAG\_\_MOM\_\_RATIO**

```
const double NEUTRON_TO_SHIELDED_PROTON_MAG__MOM__RATIO =-0.68499694e0
```

Definition at line 756 of file [ccodata.h](#).

**17.12.2.252 NEWTONIAN\_CONSTANT\_OF\_GRAVITATION**

```
const double NEWTONIAN_CONSTANT_OF_GRAVITATION =6.67430e-11
```

$\text{m}^3 \text{kg}^{-1} \text{s}^{-2}$

Definition at line 759 of file [ccodata.h](#).

**17.12.2.253 NEWTONIAN\_CONSTANT\_OF\_GRAVITATION\_OVER\_H\_BAR\_C**

```
const double NEWTONIAN_CONSTANT_OF_GRAVITATION_OVER_H_BAR_C =6.70883e-39
```

$(\text{GeV}/c^2)^{-2}$

Definition at line 762 of file [ccodata.h](#).

**17.12.2.254 NUCLEAR\_MAGNETON**

```
const double NUCLEAR_MAGNETON =5.0507837461e-27
```

$\text{J T}^{-1}$

Definition at line 765 of file [ccodata.h](#).

**17.12.2.255 NUCLEAR\_MAGNETON\_IN\_EV\_T**

```
const double NUCLEAR_MAGNETON_IN_EV_T =3.15245125844e-8
```

eV T<sup>-1</sup>

Definition at line 768 of file [ccodata.h](#).

**17.12.2.256 NUCLEAR\_MAGNETON\_IN\_INVERSE\_METER\_PER\_TESLA**

```
const double NUCLEAR_MAGNETON_IN_INVERSE_METER_PER_TESLA =2.54262341353e-2
```

m<sup>-1</sup> T<sup>-1</sup>

Definition at line 771 of file [ccodata.h](#).

**17.12.2.257 NUCLEAR\_MAGNETON\_IN\_K\_T**

```
const double NUCLEAR_MAGNETON_IN_K_T =3.6582677756e-4
```

K T<sup>-1</sup>

Definition at line 774 of file [ccodata.h](#).

**17.12.2.258 NUCLEAR\_MAGNETON\_IN\_MHZ\_T**

```
const double NUCLEAR_MAGNETON_IN_MHZ_T =7.6225932291e0
```

MHz T<sup>-1</sup>

Definition at line 777 of file [ccodata.h](#).

**17.12.2.259 PLANCK\_CONSTANT**

```
const double PLANCK_CONSTANT =6.62607015e-34
```

J Hz<sup>-1</sup>

Definition at line 780 of file [ccodata.h](#).

**17.12.2.260 PLANCK\_CONSTANT\_IN\_EV\_HZ**

```
const double PLANCK_CONSTANT_IN_EV_HZ =4.135667696e-15
```

eV Hz<sup>-1</sup>

Definition at line 783 of file [ccodata.h](#).

**17.12.2.261 PLANCK\_LENGTH**

```
const double PLANCK_LENGTH =1.616255e-35
```

m

Definition at line 786 of file [ccodata.h](#).

**17.12.2.262 PLANCK\_MASS**

```
const double PLANCK_MASS =2.176434e-8
```

kg

Definition at line 789 of file [ccodata.h](#).

**17.12.2.263 PLANCK\_MASS\_ENERGY\_EQUIVALENT\_IN\_GEV**

```
const double PLANCK_MASS_ENERGY_EQUIVALENT_IN_GEV =1.220890e19
```

GeV

Definition at line 792 of file [ccodata.h](#).

**17.12.2.264 PLANCK\_TEMPERATURE**

```
const double PLANCK_TEMPERATURE =1.416784e32
```

K

Definition at line 795 of file [ccodata.h](#).

**17.12.2.265 PLANCK\_TIME**

```
const double PLANCK_TIME =5.391247e-44
```

s

Definition at line 798 of file [ccodata.h](#).

**17.12.2.266 PROTON\_CHARGE\_TO\_MASS\_QUOTIENT**

```
const double PROTON_CHARGE_TO_MASS_QUOTIENT =9.5788331560e7
```

C kg<sup>-1</sup>

Definition at line 801 of file [ccodata.h](#).

**17.12.2.267 PROTON\_COMPTON\_WAVELENGTH**

```
const double PROTON_COMPTON_WAVELENGTH =1.32140985539e-15
```

m

Definition at line 804 of file [ccodata.h](#).

**17.12.2.268 PROTON\_ELECTRON\_MASS\_RATIO**

```
const double PROTON_ELECTRON_MASS_RATIO =1836.15267343e0
```

Definition at line 807 of file [ccodata.h](#).

**17.12.2.269 PROTON\_G\_FACTOR**

```
const double PROTON_G_FACTOR =5.5856946893e0
```

Definition at line 810 of file [ccodata.h](#).

**17.12.2.270 PROTON\_GYROMAG\_\_RATIO**

```
const double PROTON_GYROMAG__RATIO =2.6752218744e8
```

$\text{s}^{-1} \text{T}^{-1}$

Definition at line 813 of file [ccodata.h](#).

**17.12.2.271 PROTON\_GYROMAG\_\_RATIO\_IN\_MHZ\_T**

```
const double PROTON_GYROMAG__RATIO_IN_MHZ_T =42.577478518e0
```

$\text{MHz T}^{-1}$

Definition at line 816 of file [ccodata.h](#).

**17.12.2.272 PROTON\_MAG\_\_MOM**

```
const double PROTON_MAG__MOM =1.41060679736e-26
```

$\text{J T}^{-1}$

Definition at line 819 of file [ccodata.h](#).

**17.12.2.273 PROTON\_MAG\_\_MOM\_\_TO\_BOHR\_MAGNETON\_RATIO**

```
const double PROTON_MAG__MOM__TO_BOHR_MAGNETON_RATIO =1.52103220230e-3
```

Definition at line 822 of file [ccodata.h](#).

**17.12.2.274 PROTON\_MAG\_\_MOM\_\_TO\_NUCLEAR\_MAGNETON\_RATIO**

```
const double PROTON_MAG__MOM__TO_NUCLEAR_MAGNETON_RATIO =2.79284734463e0
```

Definition at line 825 of file [ccodata.h](#).

**17.12.2.275 PROTON\_MAG\_\_SHIELDING\_CORRECTION**

```
const double PROTON_MAG__SHIELDING_CORRECTION =2.5689e-5
```

Definition at line [828](#) of file [ccodata.h](#).

**17.12.2.276 PROTON\_MASS**

```
const double PROTON_MASS =1.67262192369e-27
```

kg

Definition at line [831](#) of file [ccodata.h](#).

**17.12.2.277 PROTON\_MASS\_ENERGY\_EQUIVALENT**

```
const double PROTON_MASS_ENERGY_EQUIVALENT =1.50327761598e-10
```

J

Definition at line [834](#) of file [ccodata.h](#).

**17.12.2.278 PROTON\_MASS\_ENERGY\_EQUIVALENT\_IN\_MEV**

```
const double PROTON_MASS_ENERGY_EQUIVALENT_IN_MEV =938.27208816e0
```

MeV

Definition at line [837](#) of file [ccodata.h](#).

**17.12.2.279 PROTON\_MASS\_IN\_U**

```
const double PROTON_MASS_IN_U =1.007276466621e0
```

u

Definition at line [840](#) of file [ccodata.h](#).

**17.12.2.280 PROTON\_MOLAR\_MASS**

```
const double PROTON_MOLAR_MASS =1.00727646627e-3
```

kg mol<sup>-1</sup>

Definition at line 843 of file [ccodata.h](#).

**17.12.2.281 PROTON\_MUON\_MASS\_RATIO**

```
const double PROTON_MUON_MASS_RATIO =8.88024337e0
```

Definition at line 846 of file [ccodata.h](#).

**17.12.2.282 PROTON\_NEUTRON\_MAG\_\_MOM\_\_RATIO**

```
const double PROTON_NEUTRON_MAG__MOM__RATIO =-1.45989805e0
```

Definition at line 849 of file [ccodata.h](#).

**17.12.2.283 PROTON\_NEUTRON\_MASS\_RATIO**

```
const double PROTON_NEUTRON_MASS_RATIO =0.99862347812e0
```

Definition at line 852 of file [ccodata.h](#).

**17.12.2.284 PROTON\_RELATIVE\_ATOMIC\_MASS**

```
const double PROTON_RELATIVE_ATOMIC_MASS =1.007276466621e0
```

Definition at line 855 of file [ccodata.h](#).

**17.12.2.285 PROTON\_RMS\_CHARGE\_RADIUS**

```
const double PROTON_RMS_CHARGE_RADIUS =8.414e-16
```

m

Definition at line 858 of file [ccodata.h](#).

**17.12.2.286 PROTON\_TAU\_MASS\_RATIO**

```
const double PROTON_TAU_MASS_RATIO =0.528051e0
```

Definition at line [861](#) of file [ccodata.h](#).

**17.12.2.287 QUANTUM\_OF\_CIRCULATION**

```
const double QUANTUM_OF_CIRCULATION =3.6369475516e-4
```

$\text{m}^2 \text{s}^{-1}$

Definition at line [864](#) of file [ccodata.h](#).

**17.12.2.288 QUANTUM\_OF\_CIRCULATION\_TIMES\_2**

```
const double QUANTUM_OF_CIRCULATION_TIMES_2 =7.2738951032e-4
```

$\text{m}^2 \text{s}^{-1}$

Definition at line [867](#) of file [ccodata.h](#).

**17.12.2.289 REDUCED\_COMPTON\_WAVELENGTH**

```
const double REDUCED_COMPTON_WAVELENGTH =3.8615926796e-13
```

m

Definition at line [870](#) of file [ccodata.h](#).

**17.12.2.290 REDUCED\_MUON\_COMPTON\_WAVELENGTH**

```
const double REDUCED_MUON_COMPTON_WAVELENGTH =1.867594306e-15
```

m

Definition at line [873](#) of file [ccodata.h](#).



**17.12.2.291 REDUCED\_NEUTRON\_COMPTON\_WAVELENGTH**

```
const double REDUCED_NEUTRON_COMPTON_WAVELENGTH =2.1001941552e-16
```

m

Definition at line 876 of file [ccodata.h](#).

**17.12.2.292 REDUCED\_PLANCK\_CONSTANT**

```
const double REDUCED_PLANCK_CONSTANT =1.054571817e-34
```

J s

Definition at line 879 of file [ccodata.h](#).

**17.12.2.293 REDUCED\_PLANCK\_CONSTANT\_IN\_EV\_S**

```
const double REDUCED_PLANCK_CONSTANT_IN_EV_S =6.582119569e-16
```

eV s

Definition at line 882 of file [ccodata.h](#).

**17.12.2.294 REDUCED\_PLANCK\_CONSTANT\_TIMES\_C\_IN\_MEV\_FM**

```
const double REDUCED_PLANCK_CONSTANT_TIMES_C_IN_MEV_FM =197.3269804e0
```

MeV fm

Definition at line 885 of file [ccodata.h](#).

**17.12.2.295 REDUCED\_PROTON\_COMPTON\_WAVELENGTH**

```
const double REDUCED_PROTON_COMPTON_WAVELENGTH =2.10308910336e-16
```

m

Definition at line 888 of file [ccodata.h](#).

**17.12.2.296 REDUCED\_TAU\_COMPTON\_WAVELENGTH**

```
const double REDUCED_TAU_COMPTON_WAVELENGTH =1.110538e-16
```

m

Definition at line [891](#) of file [ccodata.h](#).

**17.12.2.297 RYDBERG\_CONSTANT**

```
const double RYDBERG_CONSTANT =10973731.568160e0
```

m<sup>-1</sup>

Definition at line [894](#) of file [ccodata.h](#).

**17.12.2.298 RYDBERG\_CONSTANT\_TIMES\_C\_IN\_HZ**

```
const double RYDBERG_CONSTANT_TIMES_C_IN_HZ =3.2898419602508e15
```

Hz

Definition at line [897](#) of file [ccodata.h](#).

**17.12.2.299 RYDBERG\_CONSTANT\_TIMES\_HC\_IN\_EV**

```
const double RYDBERG_CONSTANT_TIMES_HC_IN_EV =13.605693122994e0
```

eV

Definition at line [900](#) of file [ccodata.h](#).

**17.12.2.300 RYDBERG\_CONSTANT\_TIMES\_HC\_IN\_J**

```
const double RYDBERG_CONSTANT_TIMES_HC_IN_J =2.1798723611035e-18
```

J

Definition at line [903](#) of file [ccodata.h](#).

**17.12.2.301 SACKUR\_TETRODE\_CONSTANT\_\_1\_K\_\_100\_KPA**

```
const double SACKUR_TETRODE_CONSTANT__1_K__100_KPA =-1.15170753706e0
```

Definition at line 906 of file [ccodata.h](#).

**17.12.2.302 SACKUR\_TETRODE\_CONSTANT\_\_1\_K\_\_101\_325\_KPA**

```
const double SACKUR_TETRODE_CONSTANT__1_K__101_325_KPA =-1.16487052358e0
```

Definition at line 909 of file [ccodata.h](#).

**17.12.2.303 SECOND\_RADIATION\_CONSTANT**

```
const double SECOND_RADIATION_CONSTANT =1.438776877e-2
```

m K

Definition at line 912 of file [ccodata.h](#).

**17.12.2.304 SHIELDED\_HELION\_GYROMAG\_\_RATIO**

```
const double SHIELDED_HELION_GYROMAG__RATIO =2.037894569e8
```

$\text{s}^{-1} \text{T}^{-1}$

Definition at line 915 of file [ccodata.h](#).

**17.12.2.305 SHIELDED\_HELION\_GYROMAG\_\_RATIO\_IN\_MHZ\_T**

```
const double SHIELDED_HELION_GYROMAG__RATIO_IN_MHZ_T =32.43409942e0
```

MHz  $\text{T}^{-1}$

Definition at line 918 of file [ccodata.h](#).

**17.12.2.306 SHIELDED\_HELION\_MAG\_\_MOM**

```
const double SHIELDED_HELION_MAG__MOM =-1.074553090e-26
```

$J T^{-1}$

Definition at line 921 of file [ccodata.h](#).

**17.12.2.307 SHIELDED\_HELION\_MAG\_\_MOM\_\_TO\_BOHR\_MAGNETON\_RATIO**

```
const double SHIELDED_HELION_MAG__MOM__TO_BOHR_MAGNETON_RATIO =-1.158671471e-3
```

Definition at line 924 of file [ccodata.h](#).

**17.12.2.308 SHIELDED\_HELION\_MAG\_\_MOM\_\_TO\_NUCLEAR\_MAGNETON\_RATIO**

```
const double SHIELDED_HELION_MAG__MOM__TO_NUCLEAR_MAGNETON_RATIO =-2.127497719e0
```

Definition at line 927 of file [ccodata.h](#).

**17.12.2.309 SHIELDED\_HELION\_TO\_PROTON\_MAG\_\_MOM\_\_RATIO**

```
const double SHIELDED_HELION_TO_PROTON_MAG__MOM__RATIO =-0.7617665618e0
```

Definition at line 930 of file [ccodata.h](#).

**17.12.2.310 SHIELDED\_HELION\_TO\_SHIELDED\_PROTON\_MAG\_\_MOM\_\_RATIO**

```
const double SHIELDED_HELION_TO_SHIELDED_PROTON_MAG__MOM__RATIO =-0.7617861313e0
```

Definition at line 933 of file [ccodata.h](#).

**17.12.2.311 SHIELDED\_PROTON\_GYROMAG\_\_RATIO**

```
const double SHIELDED_PROTON_GYROMAG__RATIO =2.675153151e8
```

$s^{-1} T^{-1}$

Definition at line 936 of file [ccodata.h](#).

**17.12.2.312 SHIELDED\_PROTON\_GYROMAG\_RATIO\_IN\_MHZ\_T**

```
const double SHIELDED_PROTON_GYROMAG_RATIO_IN_MHZ_T =42.57638474e0
```

MHz T<sup>-1</sup>

Definition at line 939 of file [ccodata.h](#).

**17.12.2.313 SHIELDED\_PROTON\_MAG\_MOM**

```
const double SHIELDED_PROTON_MAG_MOM =1.410570560e-26
```

J T<sup>-1</sup>

Definition at line 942 of file [ccodata.h](#).

**17.12.2.314 SHIELDED\_PROTON\_MAG\_MOM\_TO\_BOHR\_MAGNETON\_RATIO**

```
const double SHIELDED_PROTON_MAG_MOM_TO_BOHR_MAGNETON_RATIO =1.520993128e-3
```

Definition at line 945 of file [ccodata.h](#).

**17.12.2.315 SHIELDED\_PROTON\_MAG\_MOM\_TO\_NUCLEAR\_MAGNETON\_RATIO**

```
const double SHIELDED_PROTON_MAG_MOM_TO_NUCLEAR_MAGNETON_RATIO =2.792775599e0
```

Definition at line 948 of file [ccodata.h](#).

**17.12.2.316 SHIELDING\_DIFFERENCE\_OF\_D\_AND\_P\_IN\_HD**

```
const double SHIELDING_DIFFERENCE_OF_D_AND_P_IN_HD =2.0200e-8
```

Definition at line 951 of file [ccodata.h](#).

**17.12.2.317 SHIELDING\_DIFFERENCE\_OF\_T\_AND\_P\_IN\_HT**

```
const double SHIELDING_DIFFERENCE_OF_T_AND_P_IN_HT =2.4140e-8
```

Definition at line 954 of file [ccodata.h](#).

**17.12.2.318 SPEED\_OF\_LIGHT\_IN\_VACUUM**

```
const double SPEED_OF_LIGHT_IN_VACUUM =299792458.0e0
```

$\text{m s}^{-1}$

Definition at line 957 of file [ccodata.h](#).

**17.12.2.319 STANDARD\_ACCELERATION\_OF\_GRAVITY**

```
const double STANDARD_ACCELERATION_OF_GRAVITY =9.80665e0
```

$\text{m s}^{-2}$

Definition at line 960 of file [ccodata.h](#).

**17.12.2.320 STANDARD\_ATMOSPHERE**

```
const double STANDARD_ATMOSPHERE =101325.0e0
```

Pa

Definition at line 963 of file [ccodata.h](#).

**17.12.2.321 STANDARD\_STATE\_PRESSURE**

```
const double STANDARD_STATE_PRESSURE =100000.0e0
```

Pa

Definition at line 966 of file [ccodata.h](#).

**17.12.2.322 STEFAN\_BOLTZMANN\_CONSTANT**

```
const double STEFAN_BOLTZMANN_CONSTANT =5.670374419e-8
```

$\text{W m}^{-2} \text{K}^{-4}$

Definition at line 969 of file [ccodata.h](#).

**17.12.2.323 TAU\_COMPTON\_WAVELENGTH**

```
const double TAU_COMPTON_WAVELENGTH =6.97771e-16
```

m

Definition at line 972 of file [ccodata.h](#).

**17.12.2.324 TAU\_ELECTRON\_MASS\_RATIO**

```
const double TAU_ELECTRON_MASS_RATIO =3477.23e0
```

Definition at line 975 of file [ccodata.h](#).

**17.12.2.325 TAU\_ENERGY\_EQUIVALENT**

```
const double TAU_ENERGY_EQUIVALENT =1776.86e0
```

MeV

Definition at line 978 of file [ccodata.h](#).

**17.12.2.326 TAU\_MASS**

```
const double TAU_MASS =3.16754e-27
```

kg

Definition at line 981 of file [ccodata.h](#).

**17.12.2.327 TAU\_MASS\_ENERGY\_EQUIVALENT**

```
const double TAU_MASS_ENERGY_EQUIVALENT =2.84684e-10
```

J

Definition at line 984 of file [ccodata.h](#).

**17.12.2.328 TAU\_MASS\_IN\_U**

```
const double TAU_MASS_IN_U =1.90754e0
```

u

Definition at line 987 of file [ccodata.h](#).

**17.12.2.329 TAU\_MOLAR\_MASS**

```
const double TAU_MOLAR_MASS =1.90754e-3
```

kg mol<sup>-1</sup>

Definition at line 990 of file [ccodata.h](#).

**17.12.2.330 TAU\_MUON\_MASS\_RATIO**

```
const double TAU_MUON_MASS_RATIO =16.8170e0
```

Definition at line 993 of file [ccodata.h](#).

**17.12.2.331 TAU\_NEUTRON\_MASS\_RATIO**

```
const double TAU_NEUTRON_MASS_RATIO =1.89115e0
```

Definition at line 996 of file [ccodata.h](#).

**17.12.2.332 TAU\_PROTON\_MASS\_RATIO**

```
const double TAU_PROTON_MASS_RATIO =1.89376e0
```

Definition at line 999 of file [ccodata.h](#).

**17.12.2.333 THOMSON\_CROSS\_SECTION**

```
const double THOMSON_CROSS_SECTION =6.6524587321e-29
```

m<sup>2</sup>

Definition at line 1002 of file [ccodata.h](#).



**17.12.2.334 TRITON\_ELECTRON\_MASS\_RATIO**

```
const double TRITON_ELECTRON_MASS_RATIO =5496.92153573e0
```

Definition at line 1005 of file [ccodata.h](#).

**17.12.2.335 TRITON\_G\_FACTOR**

```
const double TRITON_G_FACTOR =5.957924931e0
```

Definition at line 1008 of file [ccodata.h](#).

**17.12.2.336 TRITON\_MAG\_\_MOM**

```
const double TRITON_MAG__MOM =1.5046095202e-26
```

$J T^{-1}$

Definition at line 1011 of file [ccodata.h](#).

**17.12.2.337 TRITON\_MAG\_\_MOM\_\_TO\_BOHR\_MAGNETON\_RATIO**

```
const double TRITON_MAG__MOM__TO_BOHR_MAGNETON_RATIO =1.6223936651e-3
```

Definition at line 1014 of file [ccodata.h](#).

**17.12.2.338 TRITON\_MAG\_\_MOM\_\_TO\_NUCLEAR\_MAGNETON\_RATIO**

```
const double TRITON_MAG__MOM__TO_NUCLEAR_MAGNETON_RATIO =2.9789624656e0
```

Definition at line 1017 of file [ccodata.h](#).

**17.12.2.339 TRITON\_MASS**

```
const double TRITON_MASS =5.0073567446e-27
```

kg

Definition at line 1020 of file [ccodata.h](#).

**17.12.2.340 TRITON\_MASS\_ENERGY\_EQUIVALENT**

```
const double TRITON_MASS_ENERGY_EQUIVALENT =4.5003878060e-10
```

J

Definition at line [1023](#) of file [ccodata.h](#).

**17.12.2.341 TRITON\_MASS\_ENERGY\_EQUIVALENT\_IN\_MEV**

```
const double TRITON_MASS_ENERGY_EQUIVALENT_IN_MEV =2808.92113298e0
```

MeV

Definition at line [1026](#) of file [ccodata.h](#).

**17.12.2.342 TRITON\_MASS\_IN\_U**

```
const double TRITON_MASS_IN_U =3.01550071621e0
```

u

Definition at line [1029](#) of file [ccodata.h](#).

**17.12.2.343 TRITON\_MOLAR\_MASS**

```
const double TRITON_MOLAR_MASS =3.01550071517e-3
```

kg mol<sup>-1</sup>

Definition at line [1032](#) of file [ccodata.h](#).

**17.12.2.344 TRITON\_PROTON\_MASS\_RATIO**

```
const double TRITON_PROTON_MASS_RATIO =2.99371703414e0
```

Definition at line [1035](#) of file [ccodata.h](#).

**17.12.2.345 TRITON\_RELATIVE\_ATOMIC\_MASS**

```
const double TRITON_RELATIVE_ATOMIC_MASS =3.01550071621e0
```

Definition at line 1038 of file [ccodata.h](#).

**17.12.2.346 TRITON\_TO\_PROTON\_MAG\_\_MOM\_\_RATIO**

```
const double TRITON_TO_PROTON_MAG__MOM__RATIO =1.0666399191e0
```

Definition at line 1041 of file [ccodata.h](#).

**17.12.2.347 U\_ALPHA\_PARTICLE\_ELECTRON\_MASS\_RATIO**

```
const double U_ALPHA_PARTICLE_ELECTRON_MASS_RATIO =0.00000024e0
```

Definition at line 7 of file [ccodata.h](#).

**17.12.2.348 U\_ALPHA\_PARTICLE\_MASS**

```
const double U_ALPHA_PARTICLE_MASS =0.0000000020e-27
```

kg

Definition at line 10 of file [ccodata.h](#).

**17.12.2.349 U\_ALPHA\_PARTICLE\_MASS\_ENERGY\_EQUIVALENT**

```
const double U_ALPHA_PARTICLE_MASS_ENERGY_EQUIVALENT =0.0000000018e-10
```

J

Definition at line 13 of file [ccodata.h](#).

**17.12.2.350 U\_ALPHA\_PARTICLE\_MASS\_ENERGY\_EQUIVALENT\_IN\_MEV**

```
const double U_ALPHA_PARTICLE_MASS_ENERGY_EQUIVALENT_IN_MEV =0.0000011e0
```

MeV

Definition at line 16 of file [ccodata.h](#).

**17.12.2.351 U\_ALPHA\_PARTICLE\_MASS\_IN\_U**

```
const double U_ALPHA_PARTICLE_MASS_IN_U =0.000000000063e0
```

u

Definition at line 19 of file [ccodata.h](#).

**17.12.2.352 U\_ALPHA\_PARTICLE\_MOLAR\_MASS**

```
const double U_ALPHA_PARTICLE_MOLAR_MASS =0.0000000012e-3
```

kg mol<sup>-1</sup>

Definition at line 22 of file [ccodata.h](#).

**17.12.2.353 U\_ALPHA\_PARTICLE\_PROTON\_MASS\_RATIO**

```
const double U_ALPHA_PARTICLE_PROTON_MASS_RATIO =0.00000000022e0
```

Definition at line 25 of file [ccodata.h](#).

**17.12.2.354 U\_ALPHA\_PARTICLE\_RELATIVE\_ATOMIC\_MASS**

```
const double U_ALPHA_PARTICLE_RELATIVE_ATOMIC_MASS =0.00000000063e0
```

Definition at line 28 of file [ccodata.h](#).

**17.12.2.355 U\_ANGSTROM\_STAR**

```
const double U_ANGSTROM_STAR =0.00000090e-10
```

m

Definition at line 31 of file [ccodata.h](#).

**17.12.2.356 U\_ATOMIC\_MASS\_CONSTANT**

```
const double U_ATOMIC_MASS_CONSTANT =0.00000000050e-27
```

kg

Definition at line 34 of file [ccodata.h](#).

**17.12.2.357 U\_ATOMIC\_MASS\_CONSTANT\_ENERGY\_EQUIVALENT**

```
const double U_ATOMIC_MASS_CONSTANT_ENERGY_EQUIVALENT =0.00000000045e-10
```

J

Definition at line 37 of file [ccodata.h](#).

**17.12.2.358 U\_ATOMIC\_MASS\_CONSTANT\_ENERGY\_EQUIVALENT\_IN\_MEV**

```
const double U_ATOMIC_MASS_CONSTANT_ENERGY_EQUIVALENT_IN_MEV =0.00000028e0
```

MeV

Definition at line 40 of file [ccodata.h](#).

**17.12.2.359 U\_ATOMIC\_MASS\_UNIT\_ELECTRON\_VOLT\_RELATIONSHIP**

```
const double U_ATOMIC_MASS_UNIT_ELECTRON_VOLT_RELATIONSHIP =0.0000000028e8
```

eV

Definition at line 43 of file [ccodata.h](#).

**17.12.2.360 U\_ATOMIC\_MASS\_UNIT\_HARTREE\_RELATIONSHIP**

```
const double U_ATOMIC_MASS_UNIT_HARTREE_RELATIONSHIP =0.0000000010e7
```

E<sub>h</sub>

Definition at line 46 of file [ccodata.h](#).

**17.12.2.361 U\_ATOMIC\_MASS\_UNIT\_HERTZ\_RELATIONSHIP**

```
const double U_ATOMIC_MASS_UNIT_HERTZ_RELATIONSHIP =0.00000000068e23
```

Hz

Definition at line 49 of file [ccodata.h](#).

**17.12.2.362 U\_ATOMIC\_MASS\_UNIT\_INVERSE\_METER\_RELATIONSHIP**

```
const double U_ATOMIC_MASS_UNIT_INVERSE_METER_RELATIONSHIP =0.0000000023e14
```

m<sup>-1</sup>

Definition at line 52 of file [ccodata.h](#).

**17.12.2.363 U\_ATOMIC\_MASS\_UNIT\_JOULE\_RELATIONSHIP**

```
const double U_ATOMIC_MASS_UNIT_JOULE_RELATIONSHIP =0.00000000045e-10
```

J

Definition at line 55 of file [ccodata.h](#).

**17.12.2.364 U\_ATOMIC\_MASS\_UNIT\_KELVIN\_RELATIONSHIP**

```
const double U_ATOMIC_MASS_UNIT_KELVIN_RELATIONSHIP =0.00000000033e13
```

K

Definition at line 58 of file [ccodata.h](#).

**17.12.2.365 U\_ATOMIC\_MASS\_UNIT\_KILOGRAM\_RELATIONSHIP**

```
const double U_ATOMIC_MASS_UNIT_KILOGRAM_RELATIONSHIP =0.00000000050e-27
```

kg

Definition at line 61 of file [ccodata.h](#).

**17.12.2.366 U\_ATOMIC\_UNIT\_OF\_1ST\_HYPERPOLARIZABILITY**

```
const double U_ATOMIC_UNIT_OF_1ST_HYPERPOLARIZABILITY =0.0000000015e-53
```

$\text{C}^3 \text{m}^3 \text{J}^{-2}$

Definition at line 64 of file [ccodata.h](#).

**17.12.2.367 U\_ATOMIC\_UNIT\_OF\_2ND\_HYPERPOLARIZABILITY**

```
const double U_ATOMIC_UNIT_OF_2ND_HYPERPOLARIZABILITY =0.0000000038e-65
```

$\text{C}^4 \text{m}^4 \text{J}^{-3}$

Definition at line 67 of file [ccodata.h](#).

**17.12.2.368 U\_ATOMIC\_UNIT\_OF\_ACTION**

```
const double U_ATOMIC_UNIT_OF_ACTION =0.0e0
```

J s

Definition at line 70 of file [ccodata.h](#).

**17.12.2.369 U\_ATOMIC\_UNIT\_OF\_CHARGE**

```
const double U_ATOMIC_UNIT_OF_CHARGE =0.0e0
```

C

Definition at line 73 of file [ccodata.h](#).

**17.12.2.370 U\_ATOMIC\_UNIT\_OF\_CHARGE\_DENSITY**

```
const double U_ATOMIC_UNIT_OF_CHARGE_DENSITY =0.00000000049e12
```

$\text{C m}^{-3}$

Definition at line 76 of file [ccodata.h](#).

**17.12.2.371 U\_ATOMIC\_UNIT\_OF\_CURRENT**

```
const double U_ATOMIC_UNIT_OF_CURRENT =0.000000000013e-3
```

A

Definition at line 79 of file [ccodata.h](#).

**17.12.2.372 U\_ATOMIC\_UNIT\_OF\_ELECTRIC\_DIPOLE\_MOM**

```
const double U_ATOMIC_UNIT_OF_ELECTRIC_DIPOLE_MOM =0.0000000013e-30
```

C m

Definition at line 82 of file [ccodata.h](#).

**17.12.2.373 U\_ATOMIC\_UNIT\_OF\_ELECTRIC\_FIELD**

```
const double U_ATOMIC_UNIT_OF_ELECTRIC_FIELD =0.00000000078e11
```

V m<sup>-1</sup>

Definition at line 85 of file [ccodata.h](#).

**17.12.2.374 U\_ATOMIC\_UNIT\_OF\_ELECTRIC\_FIELD\_GRADIENT**

```
const double U_ATOMIC_UNIT_OF_ELECTRIC_FIELD_GRADIENT =0.0000000029e21
```

V m<sup>-2</sup>

Definition at line 88 of file [ccodata.h](#).

**17.12.2.375 U\_ATOMIC\_UNIT\_OF\_ELECTRIC\_POLARIZABILITY**

```
const double U_ATOMIC_UNIT_OF_ELECTRIC_POLARIZABILITY =0.00000000050e-41
```

C<sup>2</sup> m<sup>2</sup> J<sup>-1</sup>

Definition at line 91 of file [ccodata.h](#).



**17.12.2.376 U\_ATOMIC\_UNIT\_OF\_ELECTRIC\_POTENTIAL**

```
const double U_ATOMIC_UNIT_OF_ELECTRIC_POTENTIAL =0.000000000053e0
```

V

Definition at line 94 of file [ccodata.h](#).

**17.12.2.377 U\_ATOMIC\_UNIT\_OF\_ELECTRIC\_QUADRUPOLE\_MOM**

```
const double U_ATOMIC_UNIT_OF_ELECTRIC_QUADRUPOLE_MOM =0.0000000014e-40
```

C m<sup>2</sup>

Definition at line 97 of file [ccodata.h](#).

**17.12.2.378 U\_ATOMIC\_UNIT\_OF\_ENERGY**

```
const double U_ATOMIC_UNIT_OF_ENERGY =0.0000000000085e-18
```

J

Definition at line 100 of file [ccodata.h](#).

**17.12.2.379 U\_ATOMIC\_UNIT\_OF\_FORCE**

```
const double U_ATOMIC_UNIT_OF_FORCE =0.0000000012e-8
```

N

Definition at line 103 of file [ccodata.h](#).

**17.12.2.380 U\_ATOMIC\_UNIT\_OF\_LENGTH**

```
const double U_ATOMIC_UNIT_OF_LENGTH =0.00000000080e-11
```

m

Definition at line 106 of file [ccodata.h](#).

**17.12.2.381 U\_ATOMIC\_UNIT\_OF\_MAG\_\_DIPOLE\_MOM**

```
const double U_ATOMIC_UNIT_OF_MAG__DIPOLE_MOM =0.00000000056e-23
```

$\text{J T}^{-1}$

Definition at line 109 of file [ccodata.h](#).

**17.12.2.382 U\_ATOMIC\_UNIT\_OF\_MAG\_\_FLUX\_DENSITY**

```
const double U_ATOMIC_UNIT_OF_MAG__FLUX_DENSITY =0.00000000071e5
```

$\text{T}$

Definition at line 112 of file [ccodata.h](#).

**17.12.2.383 U\_ATOMIC\_UNIT\_OF\_MAGNETIZABILITY**

```
const double U_ATOMIC_UNIT_OF_MAGNETIZABILITY =0.0000000048e-29
```

$\text{J T}^{-2}$

Definition at line 115 of file [ccodata.h](#).

**17.12.2.384 U\_ATOMIC\_UNIT\_OF\_MASS**

```
const double U_ATOMIC_UNIT_OF_MASS =0.0000000028e-31
```

$\text{kg}$

Definition at line 118 of file [ccodata.h](#).

**17.12.2.385 U\_ATOMIC\_UNIT\_OF\_MOMENTUM**

```
const double U_ATOMIC_UNIT_OF_MOMENTUM =0.00000000030e-24
```

$\text{kg m s}^{-1}$

Definition at line 121 of file [ccodata.h](#).

**17.12.2.386 U\_ATOMIC\_UNIT\_OF\_PERMITTIVITY**

```
const double U_ATOMIC_UNIT_OF_PERMITTIVITY =0.00000000017e-10
```

F m<sup>-1</sup>

Definition at line 124 of file [ccodata.h](#).

**17.12.2.387 U\_ATOMIC\_UNIT\_OF\_TIME**

```
const double U_ATOMIC_UNIT_OF_TIME =0.0000000000047e-17
```

s

Definition at line 127 of file [ccodata.h](#).

**17.12.2.388 U\_ATOMIC\_UNIT\_OF\_VELOCITY**

```
const double U_ATOMIC_UNIT_OF_VELOCITY =0.00000000033e6
```

m s<sup>-1</sup>

Definition at line 130 of file [ccodata.h](#).

**17.12.2.389 U\_AVOGADRO\_CONSTANT**

```
const double U_AVOGADRO_CONSTANT =0.0e0
```

mol<sup>-1</sup>

Definition at line 133 of file [ccodata.h](#).

**17.12.2.390 U\_BOHR\_MAGNETON**

```
const double U_BOHR_MAGNETON =0.0000000028e-24
```

J T<sup>-1</sup>

Definition at line 136 of file [ccodata.h](#).

**17.12.2.391 U\_BOHR\_MAGNETON\_IN\_EV\_T**

```
const double U_BOHR_MAGNETON_IN_EV_T =0.0000000017e-5
```

eV T<sup>-1</sup>

Definition at line 139 of file [ccodata.h](#).

**17.12.2.392 U\_BOHR\_MAGNETON\_IN\_HZ\_T**

```
const double U_BOHR_MAGNETON_IN_HZ_T =0.00000000042e10
```

Hz T<sup>-1</sup>

Definition at line 142 of file [ccodata.h](#).

**17.12.2.393 U\_BOHR\_MAGNETON\_IN\_INVERSE\_METER\_PER\_TESLA**

```
const double U_BOHR_MAGNETON_IN_INVERSE_METER_PER_TESLA =0.000000014e0
```

m<sup>-1</sup> T<sup>-1</sup>

Definition at line 145 of file [ccodata.h](#).

**17.12.2.394 U\_BOHR\_MAGNETON\_IN\_K\_T**

```
const double U_BOHR_MAGNETON_IN_K_T =0.00000000020e0
```

K T<sup>-1</sup>

Definition at line 148 of file [ccodata.h](#).

**17.12.2.395 U\_BOHR\_RADIUS**

```
const double U_BOHR_RADIUS =0.00000000080e-11
```

m

Definition at line 151 of file [ccodata.h](#).

**17.12.2.396 U\_BOLTZMANN\_CONSTANT**

```
const double U_BOLTZMANN_CONSTANT =0.0e0
```

J K<sup>-1</sup>

Definition at line 154 of file [ccodata.h](#).

**17.12.2.397 U\_BOLTZMANN\_CONSTANT\_IN\_EV\_K**

```
const double U_BOLTZMANN_CONSTANT_IN_EV_K =0.0e0
```

eV K<sup>-1</sup>

Definition at line 157 of file [ccodata.h](#).

**17.12.2.398 U\_BOLTZMANN\_CONSTANT\_IN\_HZ\_K**

```
const double U_BOLTZMANN_CONSTANT_IN_HZ_K =0.0e0
```

Hz K<sup>-1</sup>

Definition at line 160 of file [ccodata.h](#).

**17.12.2.399 U\_BOLTZMANN\_CONSTANT\_IN\_INVERSE\_METER\_PER\_KELVIN**

```
const double U_BOLTZMANN_CONSTANT_IN_INVERSE_METER_PER_KELVIN =0.0e0
```

m<sup>-1</sup> K<sup>-1</sup>

Definition at line 163 of file [ccodata.h](#).

**17.12.2.400 U\_CHARACTERISTIC\_IMPEDANCE\_OF\_VACUUM**

```
const double U_CHARACTERISTIC_IMPEDANCE_OF_VACUUM =0.000000057e0
```

ohm

Definition at line 166 of file [ccodata.h](#).

**17.12.2.401 U\_CLASSICAL\_ELECTRON\_RADIUS**

```
const double U_CLASSICAL_ELECTRON_RADIUS =0.0000000013e-15
```

m

Definition at line 169 of file [ccodata.h](#).

**17.12.2.402 U\_COMPTON\_WAVELENGTH**

```
const double U_COMPTON_WAVELENGTH =0.00000000073e-12
```

m

Definition at line 172 of file [ccodata.h](#).

**17.12.2.403 U\_CONDUCTANCE\_QUANTUM**

```
const double U_CONDUCTANCE_QUANTUM =0.0e0
```

S

Definition at line 175 of file [ccodata.h](#).

**17.12.2.404 U\_CONVENTIONAL\_VALUE\_OF\_AMPERE\_90**

```
const double U_CONVENTIONAL_VALUE_OF_AMPERE_90 =0.0e0
```

A

Definition at line 178 of file [ccodata.h](#).

**17.12.2.405 U\_CONVENTIONAL\_VALUE\_OF\_COULOMB\_90**

```
const double U_CONVENTIONAL_VALUE_OF_COULOMB_90 =0.0e0
```

C

Definition at line 181 of file [ccodata.h](#).

**17.12.2.406 U\_CONVENTIONAL\_VALUE\_OF\_FARAD\_90**

```
const double U_CONVENTIONAL_VALUE_OF_FARAD_90 =0.0e0
```

F

Definition at line 184 of file [ccodata.h](#).

**17.12.2.407 U\_CONVENTIONAL\_VALUE\_OF\_HENRY\_90**

```
const double U_CONVENTIONAL_VALUE_OF_HENRY_90 =0.0e0
```

H

Definition at line 187 of file [ccodata.h](#).

**17.12.2.408 U\_CONVENTIONAL\_VALUE\_OF\_JOSEPHSON\_CONSTANT**

```
const double U_CONVENTIONAL_VALUE_OF_JOSEPHSON_CONSTANT =0.0e0
```

Hz V<sup>-1</sup>

Definition at line 190 of file [ccodata.h](#).

**17.12.2.409 U\_CONVENTIONAL\_VALUE\_OF\_OHM\_90**

```
const double U_CONVENTIONAL_VALUE_OF_OHM_90 =0.0e0
```

ohm

Definition at line 193 of file [ccodata.h](#).

**17.12.2.410 U\_CONVENTIONAL\_VALUE\_OF\_VOLT\_90**

```
const double U_CONVENTIONAL_VALUE_OF_VOLT_90 =0.0e0
```

V

Definition at line 196 of file [ccodata.h](#).

**17.12.2.411 U\_CONVENTIONAL\_VALUE\_OF\_VON\_KLITZING\_CONSTANT**

```
const double U_CONVENTIONAL_VALUE_OF_VON_KLITZING_CONSTANT =0.0e0
```

ohm

Definition at line 199 of file [ccodata.h](#).

**17.12.2.412 U\_CONVENTIONAL\_VALUE\_OF\_WATT\_90**

```
const double U_CONVENTIONAL_VALUE_OF_WATT_90 =0.0e0
```

W

Definition at line 202 of file [ccodata.h](#).

**17.12.2.413 U\_COPPER\_X\_UNIT**

```
const double U_COPPER_X_UNIT =0.00000028e-13
```

m

Definition at line 205 of file [ccodata.h](#).

**17.12.2.414 U\_DEUTERON\_ELECTRON\_MAG\_\_MOM\_\_RATIO**

```
const double U_DEUTERON_ELECTRON_MAG__MOM__RATIO =0.000000012e-4
```

Definition at line 208 of file [ccodata.h](#).

**17.12.2.415 U\_DEUTERON\_ELECTRON\_MASS\_RATIO**

```
const double U_DEUTERON_ELECTRON_MASS_RATIO =0.00000013e0
```

Definition at line 211 of file [ccodata.h](#).



**17.12.2.416 U\_DEUTERON\_G\_FACTOR**

```
const double U_DEUTERON_G_FACTOR =0.0000000022e0
```

Definition at line 214 of file [ccodata.h](#).

**17.12.2.417 U\_DEUTERON\_MAG\_\_MOM**

```
const double U_DEUTERON_MAG__MOM =0.000000011e-27
```

$J T^{-1}$

Definition at line 217 of file [ccodata.h](#).

**17.12.2.418 U\_DEUTERON\_MAG\_\_MOM\_\_TO\_BOHR\_MAGNETON\_RATIO**

```
const double U_DEUTERON_MAG__MOM__TO_BOHR_MAGNETON_RATIO =0.000000012e-4
```

Definition at line 220 of file [ccodata.h](#).

**17.12.2.419 U\_DEUTERON\_MAG\_\_MOM\_\_TO\_NUCLEAR\_MAGNETON\_RATIO**

```
const double U_DEUTERON_MAG__MOM__TO_NUCLEAR_MAGNETON_RATIO =0.0000000022e0
```

Definition at line 223 of file [ccodata.h](#).

**17.12.2.420 U\_DEUTERON\_MASS**

```
const double U_DEUTERON_MASS =0.0000000010e-27
```

kg

Definition at line 226 of file [ccodata.h](#).

**17.12.2.421 U\_DEUTERON\_MASS\_ENERGY\_EQUIVALENT**

```
const double U_DEUTERON_MASS_ENERGY_EQUIVALENT =0.00000000091e-10
```

J

Definition at line 229 of file [ccodata.h](#).

**17.12.2.422 U\_DEUTERON\_MASS\_ENERGY\_EQUIVALENT\_IN\_MEV**

```
const double U_DEUTERON_MASS_ENERGY_EQUIVALENT_IN_MEV =0.00000057e0
```

MeV

Definition at line 232 of file [ccodata.h](#).

**17.12.2.423 U\_DEUTERON\_MASS\_IN\_U**

```
const double U_DEUTERON_MASS_IN_U =0.000000000040e0
```

u

Definition at line 235 of file [ccodata.h](#).

**17.12.2.424 U\_DEUTERON\_MOLAR\_MASS**

```
const double U_DEUTERON_MOLAR_MASS =0.00000000061e-3
```

kg mol<sup>-1</sup>

Definition at line 238 of file [ccodata.h](#).

**17.12.2.425 U\_DEUTERON\_NEUTRON\_MAG\_\_MOM\_\_RATIO**

```
const double U_DEUTERON_NEUTRON_MAG__MOM__RATIO =0.00000011e0
```

Definition at line 241 of file [ccodata.h](#).

**17.12.2.426 U\_DEUTERON\_PROTON\_MAG\_\_MOM\_\_RATIO**

```
const double U_DEUTERON_PROTON_MAG__MOM__RATIO =0.00000000079e0
```

Definition at line 244 of file [ccodata.h](#).

**17.12.2.427 U\_DEUTERON\_PROTON\_MASS\_RATIO**

```
const double U_DEUTERON_PROTON_MASS_RATIO =0.00000000011e0
```

Definition at line 247 of file [ccodata.h](#).

**17.12.2.428 U\_DEUTERON\_RELATIVE\_ATOMIC\_MASS**

```
const double U_DEUTERON_RELATIVE_ATOMIC_MASS =0.00000000040e0
```

Definition at line 250 of file [ccodata.h](#).

**17.12.2.429 U\_DEUTERON\_RMS\_CHARGE\_RADIUS**

```
const double U_DEUTERON_RMS_CHARGE_RADIUS =0.00074e-15
```

m

Definition at line 253 of file [ccodata.h](#).

**17.12.2.430 U\_ELECTRON\_CHARGE\_TO\_MASS\_QUOTIENT**

```
const double U_ELECTRON_CHARGE_TO_MASS_QUOTIENT =0.00000000053e11
```

C kg<sup>-1</sup>

Definition at line 256 of file [ccodata.h](#).

**17.12.2.431 U\_ELECTRON\_DEUTERON\_MAG\_\_MOM\_\_RATIO**

```
const double U_ELECTRON_DEUTERON_MAG__MOM__RATIO =0.0000056e0
```

Definition at line 259 of file [ccodata.h](#).

**17.12.2.432 U\_ELECTRON\_DEUTERON\_MASS\_RATIO**

```
const double U_ELECTRON_DEUTERON_MASS_RATIO =0.00000000096e-4
```

Definition at line 262 of file [ccodata.h](#).

**17.12.2.433 U\_ELECTRON\_G\_FACTOR**

```
const double U_ELECTRON_G_FACTOR =0.00000000000035e0
```

Definition at line 265 of file [ccodata.h](#).

**17.12.2.434 U\_ELECTRON\_GYROMAG\_\_RATIO**

```
const double U_ELECTRON_GYROMAG__RATIO =0.00000000053e11
```

$\text{s}^{-1} \text{T}^{-1}$

Definition at line 268 of file [ccodata.h](#).

**17.12.2.435 U\_ELECTRON\_GYROMAG\_\_RATIO\_IN\_MHZ\_T**

```
const double U_ELECTRON_GYROMAG__RATIO_IN_MHZ_T =0.0000085e0
```

$\text{MHz T}^{-1}$

Definition at line 271 of file [ccodata.h](#).

**17.12.2.436 U\_ELECTRON\_HELION\_MASS\_RATIO**

```
const double U_ELECTRON_HELION_MASS_RATIO =0.00000000079e-4
```

Definition at line 274 of file [ccodata.h](#).

**17.12.2.437 U\_ELECTRON\_MAG\_\_MOM**

```
const double U_ELECTRON_MAG__MOM =0.0000000028e-24
```

$\text{J T}^{-1}$

Definition at line 277 of file [ccodata.h](#).

**17.12.2.438 U\_ELECTRON\_MAG\_\_MOM\_\_ANOMALY**

```
const double U_ELECTRON_MAG__MOM__ANOMALY =0.00000000018e-3
```

Definition at line 280 of file [ccodata.h](#).

**17.12.2.439 U\_ELECTRON\_MAG\_\_MOM\_\_TO\_BOHR\_MAGNETON\_RATIO**

```
const double U_ELECTRON_MAG__MOM__TO_BOHR_MAGNETON_RATIO =0.00000000000018e0
```

Definition at line 283 of file [ccodata.h](#).

**17.12.2.440 U\_ELECTRON\_MAG\_\_MOM\_\_TO\_NUCLEAR\_MAGNETON\_RATIO**

```
const double U_ELECTRON_MAG__MOM__TO_NUCLEAR_MAGNETON_RATIO =0.00000011e0
```

Definition at line 286 of file [ccodata.h](#).

**17.12.2.441 U\_ELECTRON\_MASS**

```
const double U_ELECTRON_MASS =0.0000000028e-31
```

kg

Definition at line 289 of file [ccodata.h](#).

**17.12.2.442 U\_ELECTRON\_MASS\_ENERGY\_EQUIVALENT**

```
const double U_ELECTRON_MASS_ENERGY_EQUIVALENT =0.0000000025e-14
```

J

Definition at line 292 of file [ccodata.h](#).

**17.12.2.443 U\_ELECTRON\_MASS\_ENERGY\_EQUIVALENT\_IN\_MEV**

```
const double U_ELECTRON_MASS_ENERGY_EQUIVALENT_IN_MEV =0.00000000015e0
```

MeV

Definition at line 295 of file [ccodata.h](#).

**17.12.2.444 U\_ELECTRON\_MASS\_IN\_U**

```
const double U_ELECTRON_MASS_IN_U =0.00000000016e-4
```

u

Definition at line 298 of file [ccodata.h](#).

**17.12.2.445 U\_ELECTRON\_MOLAR\_MASS**

```
const double U_ELECTRON_MOLAR_MASS =0.0000000017e-7
```

kg mol<sup>-1</sup>

Definition at line 301 of file [ccodata.h](#).

**17.12.2.446 U\_ELECTRON\_MUON\_MAG\_\_MOM\_\_RATIO**

```
const double U_ELECTRON_MUON_MAG__MOM__RATIO =0.0000046e0
```

Definition at line 304 of file [ccodata.h](#).

**17.12.2.447 U\_ELECTRON\_MUON\_MASS\_RATIO**

```
const double U_ELECTRON_MUON_MASS_RATIO =0.00000011e-3
```

Definition at line 307 of file [ccodata.h](#).

**17.12.2.448 U\_ELECTRON\_NEUTRON\_MAG\_\_MOM\_\_RATIO**

```
const double U_ELECTRON_NEUTRON_MAG__MOM__RATIO =0.00023e0
```

Definition at line 310 of file [ccodata.h](#).

**17.12.2.449 U\_ELECTRON\_NEUTRON\_MASS\_RATIO**

```
const double U_ELECTRON_NEUTRON_MASS_RATIO =0.0000000026e-4
```

Definition at line 313 of file [ccodata.h](#).

**17.12.2.450 U\_ELECTRON\_PROTON\_MAG\_\_MOM\_\_RATIO**

```
const double U_ELECTRON_PROTON_MAG__MOM__RATIO =0.00000020e0
```

Definition at line 316 of file [ccodata.h](#).

**17.12.2.451 U\_ELECTRON\_PROTON\_MASS\_RATIO**

```
const double U_ELECTRON_PROTON_MASS_RATIO =0.00000000033e-4
```

Definition at line 319 of file [ccodata.h](#).

**17.12.2.452 U\_ELECTRON\_RELATIVE\_ATOMIC\_MASS**

```
const double U_ELECTRON_RELATIVE_ATOMIC_MASS =0.00000000016e-4
```

Definition at line 322 of file [ccodata.h](#).

**17.12.2.453 U\_ELECTRON\_TAU\_MASS\_RATIO**

```
const double U_ELECTRON_TAU_MASS_RATIO =0.00019e-4
```

Definition at line 325 of file [ccodata.h](#).

**17.12.2.454 U\_ELECTRON\_TO\_ALPHA\_PARTICLE\_MASS\_RATIO**

```
const double U_ELECTRON_TO_ALPHA_PARTICLE_MASS_RATIO =0.000000000045e-4
```

Definition at line 328 of file [ccodata.h](#).

**17.12.2.455 U\_ELECTRON\_TO\_SHIELDED\_HELION\_MAG\_\_MOM\_\_RATIO**

```
const double U_ELECTRON_TO_SHIELDED_HELION_MAG__MOM__RATIO =0.000010e0
```

Definition at line 331 of file [ccodata.h](#).

**17.12.2.456 U\_ELECTRON\_TO\_SHIELDED\_PROTON\_MAG\_\_MOM\_\_RATIO**

```
const double U_ELECTRON_TO_SHIELDED_PROTON_MAG__MOM__RATIO =0.0000072e0
```

Definition at line 334 of file [ccodata.h](#).

**17.12.2.457 U\_ELECTRON\_TRITON\_MASS\_RATIO**

```
const double U_ELECTRON_TRITON_MASS_RATIO =0.000000000090e-4
```

Definition at line 337 of file [ccodata.h](#).

**17.12.2.458 U\_ELECTRON\_VOLT**

```
const double U_ELECTRON_VOLT =0.0e0
```

J

Definition at line 340 of file [ccodata.h](#).

**17.12.2.459 U\_ELECTRON\_VOLT\_ATOMIC\_MASS\_UNIT\_RELATIONSHIP**

```
const double U_ELECTRON_VOLT_ATOMIC_MASS_UNIT_RELATIONSHIP =0.00000000032e-9
```

u

Definition at line 343 of file [ccodata.h](#).

**17.12.2.460 U\_ELECTRON\_VOLT\_HARTREE\_RELATIONSHIP**

```
const double U_ELECTRON_VOLT_HARTREE_RELATIONSHIP =0.000000000071e-2
```

E<sub>h</sub>

Definition at line 346 of file [ccodata.h](#).



**17.12.2.461 U\_ELECTRON\_VOLT\_HERTZ\_RELATIONSHIP**

```
const double U_ELECTRON_VOLT_HERTZ_RELATIONSHIP =0.0e0
```

Hz

Definition at line 349 of file [ccodata.h](#).

**17.12.2.462 U\_ELECTRON\_VOLT\_INVERSE\_METER\_RELATIONSHIP**

```
const double U_ELECTRON_VOLT_INVERSE_METER_RELATIONSHIP =0.0e0
```

$\text{m}^{-1}$

Definition at line 352 of file [ccodata.h](#).

**17.12.2.463 U\_ELECTRON\_VOLT\_JOULE\_RELATIONSHIP**

```
const double U_ELECTRON_VOLT_JOULE_RELATIONSHIP =0.0e0
```

J

Definition at line 355 of file [ccodata.h](#).

**17.12.2.464 U\_ELECTRON\_VOLT\_KELVIN\_RELATIONSHIP**

```
const double U_ELECTRON_VOLT_KELVIN_RELATIONSHIP =0.0e0
```

K

Definition at line 358 of file [ccodata.h](#).

**17.12.2.465 U\_ELECTRON\_VOLT\_KILOGRAM\_RELATIONSHIP**

```
const double U_ELECTRON_VOLT_KILOGRAM_RELATIONSHIP =0.0e0
```

kg

Definition at line 361 of file [ccodata.h](#).

**17.12.2.466 U\_ELEMENTARY\_CHARGE**

```
const double U_ELEMENTARY_CHARGE =0.0e0
```

C

Definition at line 364 of file [ccodata.h](#).

**17.12.2.467 U\_ELEMENTARY\_CHARGE\_OVER\_H\_BAR**

```
const double U_ELEMENTARY_CHARGE_OVER_H_BAR =0.0e0
```

A J<sup>-1</sup>

Definition at line 367 of file [ccodata.h](#).

**17.12.2.468 U\_FARADAY\_CONSTANT**

```
const double U_FARADAY_CONSTANT =0.0e0
```

C mol<sup>-1</sup>

Definition at line 370 of file [ccodata.h](#).

**17.12.2.469 U\_FERMI\_COUPLING\_CONSTANT**

```
const double U_FERMI_COUPLING_CONSTANT =0.0000006e-5
```

GeV<sup>-2</sup>

Definition at line 373 of file [ccodata.h](#).

**17.12.2.470 U\_FINE\_STRUCTURE\_CONSTANT**

```
const double U_FINE_STRUCTURE_CONSTANT =0.000000011e-3
```

Definition at line 376 of file [ccodata.h](#).

**17.12.2.471 U\_FIRST\_RADIATION\_CONSTANT**

```
const double U_FIRST_RADIATION_CONSTANT =0.0e0
```

W m<sup>2</sup>

Definition at line 379 of file [ccodata.h](#).

**17.12.2.472 U\_FIRST\_RADIATION\_CONSTANT\_FOR\_SPECTRAL\_RADIANCE**

```
const double U_FIRST_RADIATION_CONSTANT_FOR_SPECTRAL_RADIANCE =0.0e0
```

W m<sup>2</sup> sr<sup>-1</sup>

Definition at line 382 of file [ccodata.h](#).

**17.12.2.473 U\_HARTREE\_ATOMIC\_MASS\_UNIT\_RELATIONSHIP**

```
const double U_HARTREE_ATOMIC_MASS_UNIT_RELATIONSHIP =0.00000000088e-8
```

u

Definition at line 385 of file [ccodata.h](#).

**17.12.2.474 U\_HARTREE\_ELECTRON\_VOLT\_RELATIONSHIP**

```
const double U_HARTREE_ELECTRON_VOLT_RELATIONSHIP =0.00000000053e0
```

eV

Definition at line 388 of file [ccodata.h](#).

**17.12.2.475 U\_HARTREE\_ENERGY**

```
const double U_HARTREE_ENERGY =0.000000000085e-18
```

J

Definition at line 391 of file [ccodata.h](#).

**17.12.2.476 U\_HARTREE\_ENERGY\_IN\_EV**

```
const double U_HARTREE_ENERGY_IN_EV =0.000000000053e0
```

eV

Definition at line 394 of file [ccodata.h](#).

**17.12.2.477 U\_HARTREE\_HERTZ\_RELATIONSHIP**

```
const double U_HARTREE_HERTZ_RELATIONSHIP =0.000000000013e15
```

Hz

Definition at line 397 of file [ccodata.h](#).

**17.12.2.478 U\_HARTREE\_INVERSE\_METER\_RELATIONSHIP**

```
const double U_HARTREE_INVERSE_METER_RELATIONSHIP =0.0000000000043e7
```

m<sup>-1</sup>

Definition at line 400 of file [ccodata.h](#).

**17.12.2.479 U\_HARTREE\_JOULE\_RELATIONSHIP**

```
const double U_HARTREE_JOULE_RELATIONSHIP =0.0000000000085e-18
```

J

Definition at line 403 of file [ccodata.h](#).

**17.12.2.480 U\_HARTREE\_KELVIN\_RELATIONSHIP**

```
const double U_HARTREE_KELVIN_RELATIONSHIP =0.0000000000061e5
```

K

Definition at line 406 of file [ccodata.h](#).

**17.12.2.481 U\_HARTREE\_KILOGRAM\_RELATIONSHIP**

```
const double U_HARTREE_KILOGRAM_RELATIONSHIP =0.0000000000094e-35
```

kg

Definition at line 409 of file [ccodata.h](#).

**17.12.2.482 U\_HELION\_ELECTRON\_MASS\_RATIO**

```
const double U_HELION_ELECTRON_MASS_RATIO =0.00000024e0
```

Definition at line 412 of file [ccodata.h](#).

**17.12.2.483 U\_HELION\_G\_FACTOR**

```
const double U_HELION_G_FACTOR =0.000000050e0
```

Definition at line 415 of file [ccodata.h](#).

**17.12.2.484 U\_HELION\_MAG\_\_MOM**

```
const double U_HELION_MAG__MOM =0.000000013e-26
```

J T<sup>-1</sup>

Definition at line 418 of file [ccodata.h](#).

**17.12.2.485 U\_HELION\_MAG\_\_MOM\_\_TO\_BOHR\_MAGNETON\_RATIO**

```
const double U_HELION_MAG__MOM__TO_BOHR_MAGNETON_RATIO =0.000000014e-3
```

Definition at line 421 of file [ccodata.h](#).

**17.12.2.486 U\_HELION\_MAG\_\_MOM\_\_TO\_NUCLEAR\_MAGNETON\_RATIO**

```
const double U_HELION_MAG__MOM__TO_NUCLEAR_MAGNETON_RATIO =0.000000025e0
```

Definition at line 424 of file [ccodata.h](#).

**17.12.2.487 U\_HELION\_MASS**

```
const double U_HELION_MASS =0.0000000015e-27
```

kg

Definition at line 427 of file [ccodata.h](#).

**17.12.2.488 U\_HELION\_MASS\_ENERGY\_EQUIVALENT**

```
const double U_HELION_MASS_ENERGY_EQUIVALENT =0.0000000014e-10
```

J

Definition at line 430 of file [ccodata.h](#).

**17.12.2.489 U\_HELION\_MASS\_ENERGY\_EQUIVALENT\_IN\_MEV**

```
const double U_HELION_MASS_ENERGY_EQUIVALENT_IN_MEV =0.00000085e0
```

MeV

Definition at line 433 of file [ccodata.h](#).

**17.12.2.490 U\_HELION\_MASS\_IN\_U**

```
const double U_HELION_MASS_IN_U =0.000000000097e0
```

u

Definition at line 436 of file [ccodata.h](#).

**17.12.2.491 U\_HELION\_MOLAR\_MASS**

```
const double U_HELION_MOLAR_MASS =0.00000000091e-3
```

kg mol<sup>-1</sup>

Definition at line 439 of file [ccodata.h](#).

**17.12.2.492 U\_HELION\_PROTON\_MASS\_RATIO**

```
const double U_HELION_PROTON_MASS_RATIO =0.00000000013e0
```

Definition at line 442 of file [ccodata.h](#).

**17.12.2.493 U\_HELION\_RELATIVE\_ATOMIC\_MASS**

```
const double U_HELION_RELATIVE_ATOMIC_MASS =0.000000000097e0
```

Definition at line 445 of file [ccodata.h](#).

**17.12.2.494 U\_HELION\_SHIELDING\_SHIFT**

```
const double U_HELION_SHIELDING_SHIFT =0.000010e-5
```

Definition at line 448 of file [ccodata.h](#).

**17.12.2.495 U\_HERTZ\_ATOMIC\_MASS\_UNIT\_RELATIONSHIP**

```
const double U_HERTZ_ATOMIC_MASS_UNIT_RELATIONSHIP =0.0000000013e-24
```

u

Definition at line 451 of file [ccodata.h](#).

**17.12.2.496 U\_HERTZ\_ELECTRON\_VOLT\_RELATIONSHIP**

```
const double U_HERTZ_ELECTRON_VOLT_RELATIONSHIP =0.0e0
```

eV

Definition at line 454 of file [ccodata.h](#).

**17.12.2.497 U\_HERTZ\_HARTREE\_RELATIONSHIP**

```
const double U_HERTZ_HARTREE_RELATIONSHIP =0.0000000000029e-16
```

E<sub>h</sub>

Definition at line 457 of file [ccodata.h](#).

**17.12.2.498 U\_HERTZ\_INVERSE\_METER\_RELATIONSHIP**

```
const double U_HERTZ_INVERSE_METER_RELATIONSHIP =0.0e0
```

$\text{m}^{-1}$

Definition at line [460](#) of file [ccodata.h](#).

**17.12.2.499 U\_HERTZ\_JOULE\_RELATIONSHIP**

```
const double U_HERTZ_JOULE_RELATIONSHIP =0.0e0
```

J

Definition at line [463](#) of file [ccodata.h](#).

**17.12.2.500 U\_HERTZ\_KELVIN\_RELATIONSHIP**

```
const double U_HERTZ_KELVIN_RELATIONSHIP =0.0e0
```

K

Definition at line [466](#) of file [ccodata.h](#).

**17.12.2.501 U\_HERTZ\_KILOGRAM\_RELATIONSHIP**

```
const double U_HERTZ_KILOGRAM_RELATIONSHIP =0.0e0
```

kg

Definition at line [469](#) of file [ccodata.h](#).

**17.12.2.502 U\_HYPERFINE\_TRANSITION\_FREQUENCY\_OF\_CS\_133**

```
const double U_HYPERFINE_TRANSITION_FREQUENCY_OF_CS_133 =0.0e0
```

Hz

Definition at line [472](#) of file [ccodata.h](#).



**17.12.2.503 U\_INVERSE\_FINE\_STRUCTURE\_CONSTANT**

```
const double U_INVERSE_FINE_STRUCTURE_CONSTANT =0.000000021e0
```

Definition at line 475 of file [ccodata.h](#).

**17.12.2.504 U\_INVERSE\_METER\_ATOMIC\_MASS\_UNIT\_RELATIONSHIP**

```
const double U_INVERSE_METER_ATOMIC_MASS_UNIT_RELATIONSHIP =0.00000000040e-15
```

u

Definition at line 478 of file [ccodata.h](#).

**17.12.2.505 U\_INVERSE\_METER\_ELECTRON\_VOLT\_RELATIONSHIP**

```
const double U_INVERSE_METER_ELECTRON_VOLT_RELATIONSHIP =0.0e0
```

eV

Definition at line 481 of file [ccodata.h](#).

**17.12.2.506 U\_INVERSE\_METER\_HARTREE\_RELATIONSHIP**

```
const double U_INVERSE_METER_HARTREE_RELATIONSHIP =0.0000000000088e-8
```

E<sub>h</sub>

Definition at line 484 of file [ccodata.h](#).

**17.12.2.507 U\_INVERSE\_METER\_HERTZ\_RELATIONSHIP**

```
const double U_INVERSE_METER_HERTZ_RELATIONSHIP =0.0e0
```

Hz

Definition at line 487 of file [ccodata.h](#).

**17.12.2.508 U\_INVERSE\_METER\_JOULE\_RELATIONSHIP**

```
const double U_INVERSE_METER_JOULE_RELATIONSHIP =0.0e0
```

J

Definition at line 490 of file [ccodata.h](#).

**17.12.2.509 U\_INVERSE\_METER\_KELVIN\_RELATIONSHIP**

```
const double U_INVERSE_METER_KELVIN_RELATIONSHIP =0.0e0
```

K

Definition at line 493 of file [ccodata.h](#).

**17.12.2.510 U\_INVERSE\_METER\_KILOGRAM\_RELATIONSHIP**

```
const double U_INVERSE_METER_KILOGRAM_RELATIONSHIP =0.0e0
```

kg

Definition at line 496 of file [ccodata.h](#).

**17.12.2.511 U\_INVERSE\_OF\_CONDUCTANCE\_QUANTUM**

```
const double U_INVERSE_OF_CONDUCTANCE_QUANTUM =0.0e0
```

ohm

Definition at line 499 of file [ccodata.h](#).

**17.12.2.512 U\_JOSEPHSON\_CONSTANT**

```
const double U_JOSEPHSON_CONSTANT =0.0e0
```

Hz V<sup>-1</sup>

Definition at line 502 of file [ccodata.h](#).

**17.12.2.513 U\_JOULE\_ATOMIC\_MASS\_UNIT\_RELATIONSHIP**

```
const double U_JOULE_ATOMIC_MASS_UNIT_RELATIONSHIP =0.0000000020e9
```

u

Definition at line 505 of file [ccodata.h](#).

**17.12.2.514 U\_JOULE\_ELECTRON\_VOLT\_RELATIONSHIP**

```
const double U_JOULE_ELECTRON_VOLT_RELATIONSHIP =0.0e0
```

eV

Definition at line 508 of file [ccodata.h](#).

**17.12.2.515 U\_JOULE\_HARTREE\_RELATIONSHIP**

```
const double U_JOULE_HARTREE_RELATIONSHIP =0.0000000000045e17
```

E<sub>h</sub>

Definition at line 511 of file [ccodata.h](#).

**17.12.2.516 U\_JOULE\_HERTZ\_RELATIONSHIP**

```
const double U_JOULE_HERTZ_RELATIONSHIP =0.0e0
```

Hz

Definition at line 514 of file [ccodata.h](#).

**17.12.2.517 U\_JOULE\_INVERSE\_METER\_RELATIONSHIP**

```
const double U_JOULE_INVERSE_METER_RELATIONSHIP =0.0e0
```

m<sup>-1</sup>

Definition at line 517 of file [ccodata.h](#).

**17.12.2.518 U\_JOULE\_KELVIN\_RELATIONSHIP**

```
const double U_JOULE_KELVIN_RELATIONSHIP =0.0e0
```

K

Definition at line 520 of file [ccodata.h](#).

**17.12.2.519 U\_JOULE\_KILOGRAM\_RELATIONSHIP**

```
const double U_JOULE_KILOGRAM_RELATIONSHIP =0.0e0
```

kg

Definition at line 523 of file [ccodata.h](#).

**17.12.2.520 U\_KELVIN\_ATOMIC\_MASS\_UNIT\_RELATIONSHIP**

```
const double U_KELVIN_ATOMIC_MASS_UNIT_RELATIONSHIP =0.0000000028e-14
```

u

Definition at line 526 of file [ccodata.h](#).

**17.12.2.521 U\_KELVIN\_ELECTRON\_VOLT\_RELATIONSHIP**

```
const double U_KELVIN_ELECTRON_VOLT_RELATIONSHIP =0.0e0
```

eV

Definition at line 529 of file [ccodata.h](#).

**17.12.2.522 U\_KELVIN\_HARTREE\_RELATIONSHIP**

```
const double U_KELVIN_HARTREE_RELATIONSHIP =0.0000000000061e-6
```

E<sub>h</sub>

Definition at line 532 of file [ccodata.h](#).

**17.12.2.523 U\_KELVIN\_HERTZ\_RELATIONSHIP**

```
const double U_KELVIN_HERTZ_RELATIONSHIP =0.0e0
```

Hz

Definition at line 535 of file [ccodata.h](#).

**17.12.2.524 U\_KELVIN\_INVERSE\_METER\_RELATIONSHIP**

```
const double U_KELVIN_INVERSE_METER_RELATIONSHIP =0.0e0
```

$\text{m}^{-1}$

Definition at line 538 of file [ccodata.h](#).

**17.12.2.525 U\_KELVIN\_JOULE\_RELATIONSHIP**

```
const double U_KELVIN_JOULE_RELATIONSHIP =0.0e0
```

J

Definition at line 541 of file [ccodata.h](#).

**17.12.2.526 U\_KELVIN\_KILOGRAM\_RELATIONSHIP**

```
const double U_KELVIN_KILOGRAM_RELATIONSHIP =0.0e0
```

kg

Definition at line 544 of file [ccodata.h](#).

**17.12.2.527 U\_KILOGRAM\_ATOMIC\_MASS\_UNIT\_RELATIONSHIP**

```
const double U_KILOGRAM_ATOMIC_MASS_UNIT_RELATIONSHIP =0.0000000018e26
```

u

Definition at line 547 of file [ccodata.h](#).

**17.12.2.528 U\_KILOGRAM\_ELECTRON\_VOLT\_RELATIONSHIP**

```
const double U_KILOGRAM_ELECTRON_VOLT_RELATIONSHIP =0.0e0
```

eV

Definition at line 550 of file [ccodata.h](#).

**17.12.2.529 U\_KILOGRAM\_HARTREE\_RELATIONSHIP**

```
const double U_KILOGRAM_HARTREE_RELATIONSHIP =0.0000000000040e34
```

E<sub>h</sub>

Definition at line 553 of file [ccodata.h](#).

**17.12.2.530 U\_KILOGRAM\_HERTZ\_RELATIONSHIP**

```
const double U_KILOGRAM_HERTZ_RELATIONSHIP =0.0e0
```

Hz

Definition at line 556 of file [ccodata.h](#).

**17.12.2.531 U\_KILOGRAM\_INVERSE\_METER\_RELATIONSHIP**

```
const double U_KILOGRAM_INVERSE_METER_RELATIONSHIP =0.0e0
```

m<sup>-1</sup>

Definition at line 559 of file [ccodata.h](#).

**17.12.2.532 U\_KILOGRAM\_JOULE\_RELATIONSHIP**

```
const double U_KILOGRAM_JOULE_RELATIONSHIP =0.0e0
```

J

Definition at line 562 of file [ccodata.h](#).

**17.12.2.533 U\_KILOGRAM\_KELVIN\_RELATIONSHIP**

```
const double U_KILOGRAM_KELVIN_RELATIONSHIP =0.0e0
```

K

Definition at line 565 of file [ccodata.h](#).

**17.12.2.534 U\_LATTICE\_PARAMETER\_OF\_SILICON**

```
const double U_LATTICE_PARAMETER_OF_SILICON =0.000000089e-10
```

m

Definition at line 568 of file [ccodata.h](#).

**17.12.2.535 U\_LATTICE\_SPACING\_OF\_IDEAL\_SI\_\_220**

```
const double U_LATTICE_SPACING_OF_IDEAL_SI__220 =0.000000032e-10
```

m

Definition at line 571 of file [ccodata.h](#).

**17.12.2.536 U\_LOSCHMIDT\_CONSTANT\_\_273\_15\_K\_\_100\_KPA**

```
const double U_LOSCHMIDT_CONSTANT__273_15_K__100_KPA =0.0e0
```

m<sup>-3</sup>

Definition at line 574 of file [ccodata.h](#).

**17.12.2.537 U\_LOSCHMIDT\_CONSTANT\_\_273\_15\_K\_\_101\_325\_KPA**

```
const double U_LOSCHMIDT_CONSTANT__273_15_K__101_325_KPA =0.0e0
```

m<sup>-3</sup>

Definition at line 577 of file [ccodata.h](#).

**17.12.2.538 U\_LUMINOUS\_EFFICACY**

```
const double U_LUMINOUS_EFFICACY =0.0e0
```

lm W<sup>-1</sup>

Definition at line 580 of file [ccodata.h](#).

**17.12.2.539 U\_MAG\_\_FLUX\_QUANTUM**

```
const double U_MAG__FLUX_QUANTUM =0.0e0
```

Wb

Definition at line 583 of file [ccodata.h](#).

**17.12.2.540 U\_MOLAR\_GAS\_CONSTANT**

```
const double U_MOLAR_GAS_CONSTANT =0.0e0
```

J mol<sup>-1</sup> K<sup>-1</sup>

Definition at line 586 of file [ccodata.h](#).

**17.12.2.541 U\_MOLAR\_MASS\_CONSTANT**

```
const double U_MOLAR_MASS_CONSTANT =0.00000000030e-3
```

kg mol<sup>-1</sup>

Definition at line 589 of file [ccodata.h](#).

**17.12.2.542 U\_MOLAR\_MASS\_OF\_CARBON\_12**

```
const double U_MOLAR_MASS_OF_CARBON_12 =0.0000000036e-3
```

kg mol<sup>-1</sup>

Definition at line 592 of file [ccodata.h](#).



**17.12.2.543 U\_MOLAR\_PLANCK\_CONSTANT**

```
const double U_MOLAR_PLANCK_CONSTANT =0.0e0
```

J Hz<sup>-1</sup> mol<sup>-1</sup>

Definition at line 595 of file [ccodata.h](#).

**17.12.2.544 U\_MOLAR\_VOLUME\_OF IDEAL GAS\_\_273\_15\_K\_\_100\_KPA**

```
const double U_MOLAR_VOLUME_OF IDEAL GAS__273_15_K__100_KPA =0.0e0
```

m<sup>3</sup> mol<sup>-1</sup>

Definition at line 598 of file [ccodata.h](#).

**17.12.2.545 U\_MOLAR\_VOLUME\_OF IDEAL GAS\_\_273\_15\_K\_\_101\_325\_KPA**

```
const double U_MOLAR_VOLUME_OF IDEAL GAS__273_15_K__101_325_KPA =0.0e0
```

m<sup>3</sup> mol<sup>-1</sup>

Definition at line 601 of file [ccodata.h](#).

**17.12.2.546 U\_MOLAR\_VOLUME\_OF SILICON**

```
const double U_MOLAR_VOLUME_OF SILICON =0.000000060e-5
```

m<sup>3</sup> mol<sup>-1</sup>

Definition at line 604 of file [ccodata.h](#).

**17.12.2.547 U\_MOLYBDENUM\_X\_UNIT**

```
const double U_MOLYBDENUM_X_UNIT =0.00000053e-13
```

m

Definition at line 607 of file [ccodata.h](#).

**17.12.2.548 U\_MUON\_COMPTON\_WAVELENGTH**

```
const double U_MUON_COMPTON_WAVELENGTH =0.000000026e-14
```

m

Definition at line 610 of file [ccodata.h](#).

**17.12.2.549 U\_MUON\_ELECTRON\_MASS\_RATIO**

```
const double U_MUON_ELECTRON_MASS_RATIO =0.0000046e0
```

Definition at line 613 of file [ccodata.h](#).

**17.12.2.550 U\_MUON\_G\_FACTOR**

```
const double U_MUON_G_FACTOR =0.0000000013e0
```

Definition at line 616 of file [ccodata.h](#).

**17.12.2.551 U\_MUON\_MAG\_\_MOM**

```
const double U_MUON_MAG__MOM =0.00000010e-26
```

J T<sup>-1</sup>

Definition at line 619 of file [ccodata.h](#).

**17.12.2.552 U\_MUON\_MAG\_\_MOM\_\_ANOMALY**

```
const double U_MUON_MAG__MOM__ANOMALY =0.00000063e-3
```

Definition at line 622 of file [ccodata.h](#).

**17.12.2.553 U\_MUON\_MAG\_\_MOM\_\_TO\_BOHR\_MAGNETON\_RATIO**

```
const double U_MUON_MAG__MOM__TO_BOHR_MAGNETON_RATIO =0.00000011e-3
```

Definition at line 625 of file [ccodata.h](#).

**17.12.2.554 U\_MUON\_MAG\_\_MOM\_\_TO\_NUCLEAR\_MAGNETON\_RATIO**

```
const double U_MUON_MAG__MOM__TO_NUCLEAR_MAGNETON_RATIO =0.00000020e0
```

Definition at line 628 of file [ccodata.h](#).

**17.12.2.555 U\_MUON\_MASS**

```
const double U_MUON_MASS =0.000000042e-28
```

kg

Definition at line 631 of file [ccodata.h](#).

**17.12.2.556 U\_MUON\_MASS\_ENERGY\_EQUIVALENT**

```
const double U_MUON_MASS_ENERGY_EQUIVALENT =0.000000038e-11
```

J

Definition at line 634 of file [ccodata.h](#).

**17.12.2.557 U\_MUON\_MASS\_ENERGY\_EQUIVALENT\_IN\_MEV**

```
const double U_MUON_MASS_ENERGY_EQUIVALENT_IN_MEV =0.0000023e0
```

MeV

Definition at line 637 of file [ccodata.h](#).

**17.12.2.558 U\_MUON\_MASS\_IN\_U**

```
const double U_MUON_MASS_IN_U =0.0000000025e0
```

u

Definition at line 640 of file [ccodata.h](#).

**17.12.2.559 U\_MUON\_MOLAR\_MASS**

```
const double U_MUON_MOLAR_MASS =0.000000025e-4
```

kg mol<sup>-1</sup>

Definition at line 643 of file [ccodata.h](#).

**17.12.2.560 U\_MUON\_NEUTRON\_MASS\_RATIO**

```
const double U_MUON_NEUTRON_MASS_RATIO =0.0000000025e0
```

Definition at line 646 of file [ccodata.h](#).

**17.12.2.561 U\_MUON\_PROTON\_MAG\_\_MOM\_\_RATIO**

```
const double U_MUON_PROTON_MAG__MOM__RATIO =0.000000071e0
```

Definition at line 649 of file [ccodata.h](#).

**17.12.2.562 U\_MUON\_PROTON\_MASS\_RATIO**

```
const double U_MUON_PROTON_MASS_RATIO =0.0000000025e0
```

Definition at line 652 of file [ccodata.h](#).

**17.12.2.563 U\_MUON\_TAU\_MASS\_RATIO**

```
const double U_MUON_TAU_MASS_RATIO =0.00040e-2
```

Definition at line 655 of file [ccodata.h](#).

**17.12.2.564 U\_NATURAL\_UNIT\_OF\_ACTION**

```
const double U_NATURAL_UNIT_OF_ACTION =0.0e0
```

J s

Definition at line 658 of file [ccodata.h](#).

**17.12.2.565 U\_NATURAL\_UNIT\_OF\_ACTION\_IN\_EV\_S**

```
const double U_NATURAL_UNIT_OF_ACTION_IN_EV_S =0.0e0
```

eV s

Definition at line 661 of file [ccodata.h](#).

**17.12.2.566 U\_NATURAL\_UNIT\_OF\_ENERGY**

```
const double U_NATURAL_UNIT_OF_ENERGY =0.0000000025e-14
```

J

Definition at line 664 of file [ccodata.h](#).

**17.12.2.567 U\_NATURAL\_UNIT\_OF\_ENERGY\_IN\_MEV**

```
const double U_NATURAL_UNIT_OF_ENERGY_IN_MEV =0.00000000015e0
```

MeV

Definition at line 667 of file [ccodata.h](#).

**17.12.2.568 U\_NATURAL\_UNIT\_OF\_LENGTH**

```
const double U_NATURAL_UNIT_OF_LENGTH =0.0000000012e-13
```

m

Definition at line 670 of file [ccodata.h](#).

**17.12.2.569 U\_NATURAL\_UNIT\_OF\_MASS**

```
const double U_NATURAL_UNIT_OF_MASS =0.0000000028e-31
```

kg

Definition at line 673 of file [ccodata.h](#).

**17.12.2.570 U\_NATURAL\_UNIT\_OF\_MOMENTUM**

```
const double U_NATURAL_UNIT_OF_MOMENTUM =0.00000000082e-22
```

kg m s<sup>-1</sup>

Definition at line 676 of file [ccodata.h](#).

**17.12.2.571 U\_NATURAL\_UNIT\_OF\_MOMENTUM\_IN\_MEV\_C**

```
const double U_NATURAL_UNIT_OF_MOMENTUM_IN_MEV_C =0.00000000015e0
```

MeV/c

Definition at line 679 of file [ccodata.h](#).

**17.12.2.572 U\_NATURAL\_UNIT\_OF\_TIME**

```
const double U_NATURAL_UNIT_OF_TIME =0.00000000039e-21
```

s

Definition at line 682 of file [ccodata.h](#).

**17.12.2.573 U\_NATURAL\_UNIT\_OF\_VELOCITY**

```
const double U_NATURAL_UNIT_OF_VELOCITY =0.0e0
```

m s<sup>-1</sup>

Definition at line 685 of file [ccodata.h](#).

**17.12.2.574 U\_NEUTRON\_COMPTON\_WAVELENGTH**

```
const double U_NEUTRON_COMPTON_WAVELENGTH =0.00000000075e-15
```

m

Definition at line 688 of file [ccodata.h](#).

**17.12.2.575 U\_NEUTRON\_ELECTRON\_MAG\_\_MOM\_\_RATIO**

```
const double U_NEUTRON_ELECTRON_MAG__MOM__RATIO =0.00000025e-3
```

Definition at line 691 of file [ccodata.h](#).

**17.12.2.576 U\_NEUTRON\_ELECTRON\_MASS\_RATIO**

```
const double U_NEUTRON_ELECTRON_MASS_RATIO =0.00000089e0
```

Definition at line 694 of file [ccodata.h](#).

**17.12.2.577 U\_NEUTRON\_G\_FACTOR**

```
const double U_NEUTRON_G_FACTOR =0.00000090e0
```

Definition at line 697 of file [ccodata.h](#).

**17.12.2.578 U\_NEUTRON\_GYROMAG\_\_RATIO**

```
const double U_NEUTRON_GYROMAG__RATIO =0.00000043e8
```

$\text{s}^{-1} \text{T}^{-1}$

Definition at line 700 of file [ccodata.h](#).

**17.12.2.579 U\_NEUTRON\_GYROMAG\_\_RATIO\_IN\_MHZ\_T**

```
const double U_NEUTRON_GYROMAG__RATIO_IN_MHZ_T =0.0000069e0
```

$\text{MHz T}^{-1}$

Definition at line 703 of file [ccodata.h](#).

**17.12.2.580 U\_NEUTRON\_MAG\_\_MOM**

```
const double U_NEUTRON_MAG__MOM =0.0000023e-27
```

$\text{J T}^{-1}$

Definition at line 706 of file [ccodata.h](#).

**17.12.2.581 U\_NEUTRON\_MAG\_\_MOM\_\_TO\_BOHR\_MAGNETON\_RATIO**

```
const double U_NEUTRON_MAG__MOM__TO_BOHR_MAGNETON_RATIO =0.00000025e-3
```

Definition at line 709 of file [ccodata.h](#).

**17.12.2.582 U\_NEUTRON\_MAG\_\_MOM\_\_TO\_NUCLEAR\_MAGNETON\_RATIO**

```
const double U_NEUTRON_MAG__MOM__TO_NUCLEAR_MAGNETON_RATIO =0.00000045e0
```

Definition at line 712 of file [ccodata.h](#).

**17.12.2.583 U\_NEUTRON\_MASS**

```
const double U_NEUTRON_MASS =0.00000000095e-27
```

kg

Definition at line 715 of file [ccodata.h](#).

**17.12.2.584 U\_NEUTRON\_MASS\_ENERGY\_EQUIVALENT**

```
const double U_NEUTRON_MASS_ENERGY_EQUIVALENT =0.00000000086e-10
```

J

Definition at line 718 of file [ccodata.h](#).

**17.12.2.585 U\_NEUTRON\_MASS\_ENERGY\_EQUIVALENT\_IN\_MEV**

```
const double U_NEUTRON_MASS_ENERGY_EQUIVALENT_IN_MEV =0.00000054e0
```

MeV

Definition at line 721 of file [ccodata.h](#).



**17.12.2.586 U\_NEUTRON\_MASS\_IN\_U**

```
const double U_NEUTRON_MASS_IN_U =0.00000000049e0
```

u

Definition at line 724 of file [ccodata.h](#).

**17.12.2.587 U\_NEUTRON\_MOLAR\_MASS**

```
const double U_NEUTRON_MOLAR_MASS =0.00000000057e-3
```

kg mol<sup>-1</sup>

Definition at line 727 of file [ccodata.h](#).

**17.12.2.588 U\_NEUTRON\_MUON\_MASS\_RATIO**

```
const double U_NEUTRON_MUON_MASS_RATIO =0.00000020e0
```

Definition at line 730 of file [ccodata.h](#).

**17.12.2.589 U\_NEUTRON\_PROTON\_MAG\_\_MOM\_\_RATIO**

```
const double U_NEUTRON_PROTON_MAG__MOM__RATIO =0.00000016e0
```

Definition at line 733 of file [ccodata.h](#).

**17.12.2.590 U\_NEUTRON\_PROTON\_MASS\_DIFFERENCE**

```
const double U_NEUTRON_PROTON_MASS_DIFFERENCE =0.00000082e-30
```

kg

Definition at line 736 of file [ccodata.h](#).

**17.12.2.591 U\_NEUTRON\_PROTON\_MASS\_DIFFERENCE\_ENERGY\_EQUIVALENT**

```
const double U_NEUTRON_PROTON_MASS_DIFFERENCE_ENERGY_EQUIVALENT =0.00000074e-13
```

J

Definition at line 739 of file [ccodata.h](#).

**17.12.2.592 U\_NEUTRON\_PROTON\_MASS\_DIFFERENCE\_ENERGY\_EQUIVALENT\_IN\_MEV**

```
const double U_NEUTRON_PROTON_MASS_DIFFERENCE_ENERGY_EQUIVALENT_IN_MEV =0.00000046e0
```

MeV

Definition at line 742 of file [ccodata.h](#).

**17.12.2.593 U\_NEUTRON\_PROTON\_MASS\_DIFFERENCE\_IN\_U**

```
const double U_NEUTRON_PROTON_MASS_DIFFERENCE_IN_U =0.00000049e-3
```

u

Definition at line 745 of file [ccodata.h](#).

**17.12.2.594 U\_NEUTRON\_PROTON\_MASS\_RATIO**

```
const double U_NEUTRON_PROTON_MASS_RATIO =0.00000000049e0
```

Definition at line 748 of file [ccodata.h](#).

**17.12.2.595 U\_NEUTRON\_RELATIVE\_ATOMIC\_MASS**

```
const double U_NEUTRON_RELATIVE_ATOMIC_MASS =0.00000000049e0
```

Definition at line 751 of file [ccodata.h](#).

**17.12.2.596 U\_NEUTRON\_TAU\_MASS\_RATIO**

```
const double U_NEUTRON_TAU_MASS_RATIO =0.000036e0
```

Definition at line 754 of file [ccodata.h](#).

**17.12.2.597 U\_NEUTRON\_TO\_SHIELDED\_PROTON\_MAG\_\_MOM\_\_RATIO**

```
const double U_NEUTRON_TO_SHIELDED_PROTON_MAG__MOM__RATIO =0.00000016e0
```

Definition at line 757 of file [ccodata.h](#).

**17.12.2.598 U\_NEWTONIAN\_CONSTANT\_OF\_GRAVITATION**

```
const double U_NEWTONIAN_CONSTANT_OF_GRAVITATION =0.00015e-11
```

$\text{m}^3 \text{kg}^{-1} \text{s}^{-2}$

Definition at line 760 of file [ccodata.h](#).

**17.12.2.599 U\_NEWTONIAN\_CONSTANT\_OF\_GRAVITATION\_OVER\_H\_BAR\_C**

```
const double U_NEWTONIAN_CONSTANT_OF_GRAVITATION_OVER_H_BAR_C =0.00015e-39
```

$(\text{GeV}/c^2)^{-2}$

Definition at line 763 of file [ccodata.h](#).

**17.12.2.600 U\_NUCLEAR\_MAGNETON**

```
const double U_NUCLEAR_MAGNETON =0.0000000015e-27
```

$\text{J T}^{-1}$

Definition at line 766 of file [ccodata.h](#).

**17.12.2.601 U\_NUCLEAR\_MAGNETON\_IN\_EV\_T**

```
const double U_NUCLEAR_MAGNETON_IN_EV_T =0.00000000096e-8
```

eV T<sup>-1</sup>

Definition at line 769 of file [ccodata.h](#).

**17.12.2.602 U\_NUCLEAR\_MAGNETON\_IN\_INVERSE\_METER\_PER\_TESLA**

```
const double U_NUCLEAR_MAGNETON_IN_INVERSE_METER_PER_TESLA =0.00000000078e-2
```

m<sup>-1</sup> T<sup>-1</sup>

Definition at line 772 of file [ccodata.h](#).

**17.12.2.603 U\_NUCLEAR\_MAGNETON\_IN\_K\_T**

```
const double U_NUCLEAR_MAGNETON_IN_K_T =0.0000000011e-4
```

K T<sup>-1</sup>

Definition at line 775 of file [ccodata.h](#).

**17.12.2.604 U\_NUCLEAR\_MAGNETON\_IN\_MHZ\_T**

```
const double U_NUCLEAR_MAGNETON_IN_MHZ_T =0.0000000023e0
```

MHz T<sup>-1</sup>

Definition at line 778 of file [ccodata.h](#).

**17.12.2.605 U\_PLANCK\_CONSTANT**

```
const double U_PLANCK_CONSTANT =0.0e0
```

J Hz<sup>-1</sup>

Definition at line 781 of file [ccodata.h](#).

**17.12.2.606 U\_PLANCK\_CONSTANT\_IN\_EV\_HZ**

```
const double U_PLANCK_CONSTANT_IN_EV_HZ =0.0e0
```

eV Hz<sup>-1</sup>

Definition at line 784 of file [ccodata.h](#).

**17.12.2.607 U\_PLANCK\_LENGTH**

```
const double U_PLANCK_LENGTH =0.000018e-35
```

m

Definition at line 787 of file [ccodata.h](#).

**17.12.2.608 U\_PLANCK\_MASS**

```
const double U_PLANCK_MASS =0.000024e-8
```

kg

Definition at line 790 of file [ccodata.h](#).

**17.12.2.609 U\_PLANCK\_MASS\_ENERGY\_EQUIVALENT\_IN\_GEV**

```
const double U_PLANCK_MASS_ENERGY_EQUIVALENT_IN_GEV =0.000014e19
```

GeV

Definition at line 793 of file [ccodata.h](#).

**17.12.2.610 U\_PLANCK\_TEMPERATURE**

```
const double U_PLANCK_TEMPERATURE =0.000016e32
```

K

Definition at line 796 of file [ccodata.h](#).

**17.12.2.611 U\_PLANCK\_TIME**

```
const double U_PLANCK_TIME =0.000060e-44
```

s

Definition at line 799 of file [ccodata.h](#).

**17.12.2.612 U\_PROTON\_CHARGE\_TO\_MASS\_QUOTIENT**

```
const double U_PROTON_CHARGE_TO_MASS_QUOTIENT =0.0000000029e7
```

C kg<sup>-1</sup>

Definition at line 802 of file [ccodata.h](#).

**17.12.2.613 U\_PROTON\_COMPTON\_WAVELENGTH**

```
const double U_PROTON_COMPTON_WAVELENGTH =0.00000000040e-15
```

m

Definition at line 805 of file [ccodata.h](#).

**17.12.2.614 U\_PROTON\_ELECTRON\_MASS\_RATIO**

```
const double U_PROTON_ELECTRON_MASS_RATIO =0.00000011e0
```

Definition at line 808 of file [ccodata.h](#).

**17.12.2.615 U\_PROTON\_G\_FACTOR**

```
const double U_PROTON_G_FACTOR =0.0000000016e0
```

Definition at line 811 of file [ccodata.h](#).

**17.12.2.616 U\_PROTON\_GYROMAG\_\_RATIO**

```
const double U_PROTON_GYROMAG__RATIO =0.0000000011e8
```

$\text{s}^{-1} \text{T}^{-1}$

Definition at line 814 of file [ccodata.h](#).

**17.12.2.617 U\_PROTON\_GYROMAG\_\_RATIO\_IN\_MHZ\_T**

```
const double U_PROTON_GYROMAG__RATIO_IN_MHZ_T =0.000000018e0
```

$\text{MHz T}^{-1}$

Definition at line 817 of file [ccodata.h](#).

**17.12.2.618 U\_PROTON\_MAG\_\_MOM**

```
const double U_PROTON_MAG__MOM =0.00000000060e-26
```

$\text{J T}^{-1}$

Definition at line 820 of file [ccodata.h](#).

**17.12.2.619 U\_PROTON\_MAG\_\_MOM\_\_TO\_BOHR\_MAGNETON\_RATIO**

```
const double U_PROTON_MAG__MOM__TO_BOHR_MAGNETON_RATIO =0.00000000046e-3
```

Definition at line 823 of file [ccodata.h](#).

**17.12.2.620 U\_PROTON\_MAG\_\_MOM\_\_TO\_NUCLEAR\_MAGNETON\_RATIO**

```
const double U_PROTON_MAG__MOM__TO_NUCLEAR_MAGNETON_RATIO =0.00000000082e0
```

Definition at line 826 of file [ccodata.h](#).

**17.12.2.621 U\_PROTON\_MAG\_\_SHIELDING\_CORRECTION**

```
const double U_PROTON_MAG__SHIELDING_CORRECTION =0.0011e-5
```

Definition at line 829 of file [ccodata.h](#).

**17.12.2.622 U\_PROTON\_MASS**

```
const double U_PROTON_MASS =0.00000000051e-27
```

kg

Definition at line 832 of file [ccodata.h](#).

**17.12.2.623 U\_PROTON\_MASS\_ENERGY\_EQUIVALENT**

```
const double U_PROTON_MASS_ENERGY_EQUIVALENT =0.00000000046e-10
```

J

Definition at line 835 of file [ccodata.h](#).

**17.12.2.624 U\_PROTON\_MASS\_ENERGY\_EQUIVALENT\_IN\_MEV**

```
const double U_PROTON_MASS_ENERGY_EQUIVALENT_IN_MEV =0.00000029e0
```

MeV

Definition at line 838 of file [ccodata.h](#).

**17.12.2.625 U\_PROTON\_MASS\_IN\_U**

```
const double U_PROTON_MASS_IN_U =0.000000000053e0
```

u

Definition at line 841 of file [ccodata.h](#).



**17.12.2.626 U\_PROTON\_MOLAR\_MASS**

```
const double U_PROTON_MOLAR_MASS =0.00000000031e-3
```

kg mol<sup>-1</sup>

Definition at line 844 of file [ccodata.h](#).

**17.12.2.627 U\_PROTON\_MUON\_MASS\_RATIO**

```
const double U_PROTON_MUON_MASS_RATIO =0.00000020e0
```

Definition at line 847 of file [ccodata.h](#).

**17.12.2.628 U\_PROTON\_NEUTRON\_MAG\_\_MOM\_\_RATIO**

```
const double U_PROTON_NEUTRON_MAG__MOM__RATIO =0.00000034e0
```

Definition at line 850 of file [ccodata.h](#).

**17.12.2.629 U\_PROTON\_NEUTRON\_MASS\_RATIO**

```
const double U_PROTON_NEUTRON_MASS_RATIO =0.00000000049e0
```

Definition at line 853 of file [ccodata.h](#).

**17.12.2.630 U\_PROTON\_RELATIVE\_ATOMIC\_MASS**

```
const double U_PROTON_RELATIVE_ATOMIC_MASS =0.000000000053e0
```

Definition at line 856 of file [ccodata.h](#).

**17.12.2.631 U\_PROTON\_RMS\_CHARGE\_RADIUS**

```
const double U_PROTON_RMS_CHARGE_RADIUS =0.019e-16
```

m

Definition at line 859 of file [ccodata.h](#).

**17.12.2.632 U\_PROTON\_TAU\_MASS\_RATIO**

```
const double U_PROTON_TAU_MASS_RATIO =0.000036e0
```

Definition at line 862 of file [ccodata.h](#).

**17.12.2.633 U\_QUANTUM\_OF\_CIRCULATION**

```
const double U_QUANTUM_OF_CIRCULATION =0.0000000011e-4
```

$\text{m}^2 \text{s}^{-1}$

Definition at line 865 of file [ccodata.h](#).

**17.12.2.634 U\_QUANTUM\_OF\_CIRCULATION\_TIMES\_2**

```
const double U_QUANTUM_OF_CIRCULATION_TIMES_2 =0.0000000022e-4
```

$\text{m}^2 \text{s}^{-1}$

Definition at line 868 of file [ccodata.h](#).

**17.12.2.635 U\_REDUCED\_COMPTON\_WAVELENGTH**

```
const double U_REDUCED_COMPTON_WAVELENGTH =0.0000000012e-13
```

m

Definition at line 871 of file [ccodata.h](#).

**17.12.2.636 U\_REDUCED\_MUON\_COMPTON\_WAVELENGTH**

```
const double U_REDUCED_MUON_COMPTON_WAVELENGTH =0.0000000042e-15
```

m

Definition at line 874 of file [ccodata.h](#).

**17.12.2.637 U\_REduced\_NEUTRON\_COMPTON\_WAVELENGTH**

```
const double U_REduced_NEUTRON_COMPTON_WAVELENGTH =0.0000000012e-16
```

m

Definition at line 877 of file [ccodata.h](#).

**17.12.2.638 U\_REduced\_PLANCK\_CONSTANT**

```
const double U_REduced_PLANCK_CONSTANT =0.0e0
```

J s

Definition at line 880 of file [ccodata.h](#).

**17.12.2.639 U\_REduced\_PLANCK\_CONSTANT\_IN\_EV\_S**

```
const double U_REduced_PLANCK_CONSTANT_IN_EV_S =0.0e0
```

eV s

Definition at line 883 of file [ccodata.h](#).

**17.12.2.640 U\_REduced\_PLANCK\_CONSTANT\_TIMES\_C\_IN\_MEV\_FM**

```
const double U_REduced_PLANCK_CONSTANT_TIMES_C_IN_MEV_FM =0.0e0
```

MeV fm

Definition at line 886 of file [ccodata.h](#).

**17.12.2.641 U\_REduced\_PROTON\_COMPTON\_WAVELENGTH**

```
const double U_REduced_PROTON_COMPTON_WAVELENGTH =0.00000000064e-16
```

m

Definition at line 889 of file [ccodata.h](#).

**17.12.2.642 U\_REduced\_TAU\_COMPTON\_WAVELENGTH**

```
const double U_REduced_TAU_COMPTON_WAVELENGTH =0.000075e-16
```

m

Definition at line 892 of file [ccodata.h](#).

**17.12.2.643 U\_RYDBERG\_CONSTANT**

```
const double U_RYDBERG_CONSTANT =0.000021e0
```

m<sup>-1</sup>

Definition at line 895 of file [ccodata.h](#).

**17.12.2.644 U\_RYDBERG\_CONSTANT\_TIMES\_C\_IN\_HZ**

```
const double U_RYDBERG_CONSTANT_TIMES_C_IN_HZ =0.0000000000064e15
```

Hz

Definition at line 898 of file [ccodata.h](#).

**17.12.2.645 U\_RYDBERG\_CONSTANT\_TIMES\_HC\_IN\_EV**

```
const double U_RYDBERG_CONSTANT_TIMES_HC_IN_EV =0.000000000026e0
```

eV

Definition at line 901 of file [ccodata.h](#).

**17.12.2.646 U\_RYDBERG\_CONSTANT\_TIMES\_HC\_IN\_J**

```
const double U_RYDBERG_CONSTANT_TIMES_HC_IN_J =0.000000000042e-18
```

J

Definition at line 904 of file [ccodata.h](#).

**17.12.2.647 U\_SACKUR\_TETRODE\_CONSTANT\_\_1\_K\_\_100\_KPA**

```
const double U_SACKUR_TETRODE_CONSTANT__1_K__100_KPA =0.00000000045e0
```

Definition at line 907 of file [ccodata.h](#).

**17.12.2.648 U\_SACKUR\_TETRODE\_CONSTANT\_\_1\_K\_\_101\_325\_KPA**

```
const double U_SACKUR_TETRODE_CONSTANT__1_K__101_325_KPA =0.00000000045e0
```

Definition at line 910 of file [ccodata.h](#).

**17.12.2.649 U\_SECOND\_RADIATION\_CONSTANT**

```
const double U_SECOND_RADIATION_CONSTANT =0.0e0
```

m K

Definition at line 913 of file [ccodata.h](#).

**17.12.2.650 U\_SHIELDED\_HELION\_GYROMAG\_\_RATIO**

```
const double U_SHIELDED_HELION_GYROMAG__RATIO =0.000000024e8
```

$\text{s}^{-1} \text{T}^{-1}$

Definition at line 916 of file [ccodata.h](#).

**17.12.2.651 U\_SHIELDED\_HELION\_GYROMAG\_\_RATIO\_IN\_MHZ\_T**

```
const double U_SHIELDED_HELION_GYROMAG__RATIO_IN_MHZ_T =0.00000038e0
```

MHz  $\text{T}^{-1}$

Definition at line 919 of file [ccodata.h](#).

**17.12.2.652 U\_SHIELDED\_HELION\_MAG\_\_MOM**

```
const double U_SHIELDED_HELION_MAG__MOM =0.000000013e-26
```

$J T^{-1}$

Definition at line 922 of file [ccodata.h](#).

**17.12.2.653 U\_SHIELDED\_HELION\_MAG\_\_MOM\_\_TO\_BOHR\_MAGNETON\_RATIO**

```
const double U_SHIELDED_HELION_MAG__MOM__TO_BOHR_MAGNETON_RATIO =0.000000014e-3
```

Definition at line 925 of file [ccodata.h](#).

**17.12.2.654 U\_SHIELDED\_HELION\_MAG\_\_MOM\_\_TO\_NUCLEAR\_MAGNETON\_RATIO**

```
const double U_SHIELDED_HELION_MAG__MOM__TO_NUCLEAR_MAGNETON_RATIO =0.000000025e0
```

Definition at line 928 of file [ccodata.h](#).

**17.12.2.655 U\_SHIELDED\_HELION\_TO\_PROTON\_MAG\_\_MOM\_\_RATIO**

```
const double U_SHIELDED_HELION_TO_PROTON_MAG__MOM__RATIO =0.0000000089e0
```

Definition at line 931 of file [ccodata.h](#).

**17.12.2.656 U\_SHIELDED\_HELION\_TO\_SHIELDED\_PROTON\_MAG\_\_MOM\_\_RATIO**

```
const double U_SHIELDED_HELION_TO_SHIELDED_PROTON_MAG__MOM__RATIO =0.0000000033e0
```

Definition at line 934 of file [ccodata.h](#).

**17.12.2.657 U\_SHIELDED\_PROTON\_GYROMAG\_\_RATIO**

```
const double U_SHIELDED_PROTON_GYROMAG__RATIO =0.000000029e8
```

$s^{-1} T^{-1}$

Definition at line 937 of file [ccodata.h](#).

**17.12.2.658 U\_SHIELDED\_PROTON\_GYROMAG\_RATIO\_IN\_MHZ\_T**

```
const double U_SHIELDED_PROTON_GYROMAG_RATIO_IN_MHZ_T =0.00000046e0
```

MHz T<sup>-1</sup>

Definition at line 940 of file [ccodata.h](#).

**17.12.2.659 U\_SHIELDED\_PROTON\_MAG\_MOM**

```
const double U_SHIELDED_PROTON_MAG_MOM =0.000000015e-26
```

J T<sup>-1</sup>

Definition at line 943 of file [ccodata.h](#).

**17.12.2.660 U\_SHIELDED\_PROTON\_MAG\_MOM\_TO\_BOHR\_MAGNETON\_RATIO**

```
const double U_SHIELDED_PROTON_MAG_MOM_TO_BOHR_MAGNETON_RATIO =0.000000017e-3
```

Definition at line 946 of file [ccodata.h](#).

**17.12.2.661 U\_SHIELDED\_PROTON\_MAG\_MOM\_TO\_NUCLEAR\_MAGNETON\_RATIO**

```
const double U_SHIELDED_PROTON_MAG_MOM_TO_NUCLEAR_MAGNETON_RATIO =0.000000030e0
```

Definition at line 949 of file [ccodata.h](#).

**17.12.2.662 U\_SHIELDING\_DIFFERENCE\_OF\_D\_AND\_P\_IN\_HD**

```
const double U_SHIELDING_DIFFERENCE_OF_D_AND_P_IN_HD =0.0020e-8
```

Definition at line 952 of file [ccodata.h](#).

**17.12.2.663 U\_SHIELDING\_DIFFERENCE\_OF\_T\_AND\_P\_IN\_HT**

```
const double U_SHIELDING_DIFFERENCE_OF_T_AND_P_IN_HT =0.0020e-8
```

Definition at line 955 of file [ccodata.h](#).

**17.12.2.664 U\_SPEED\_OF\_LIGHT\_IN\_VACUUM**

```
const double U_SPEED_OF_LIGHT_IN_VACUUM =0.0e0
```

$\text{m s}^{-1}$

Definition at line 958 of file [ccodata.h](#).

**17.12.2.665 U\_STANDARD\_ACCELERATION\_OF\_GRAVITY**

```
const double U_STANDARD_ACCELERATION_OF_GRAVITY =0.0e0
```

$\text{m s}^{-2}$

Definition at line 961 of file [ccodata.h](#).

**17.12.2.666 U\_STANDARD\_ATMOSPHERE**

```
const double U_STANDARD_ATMOSPHERE =0.0e0
```

Pa

Definition at line 964 of file [ccodata.h](#).

**17.12.2.667 U\_STANDARD\_STATE\_PRESSURE**

```
const double U_STANDARD_STATE_PRESSURE =0.0e0
```

Pa

Definition at line 967 of file [ccodata.h](#).

**17.12.2.668 U\_STEFAN\_BOLTZMANN\_CONSTANT**

```
const double U_STEFAN_BOLTZMANN_CONSTANT =0.0e0
```

$\text{W m}^{-2} \text{K}^{-4}$

Definition at line 970 of file [ccodata.h](#).



**17.12.2.669 U\_TAU\_COMPTON\_WAVELENGTH**

```
const double U_TAU_COMPTON_WAVELENGTH =0.00047e-16
```

m

Definition at line 973 of file [ccodata.h](#).

**17.12.2.670 U\_TAU\_ELECTRON\_MASS\_RATIO**

```
const double U_TAU_ELECTRON_MASS_RATIO =0.23e0
```

Definition at line 976 of file [ccodata.h](#).

**17.12.2.671 U\_TAU\_ENERGY\_EQUIVALENT**

```
const double U_TAU_ENERGY_EQUIVALENT =0.12e0
```

MeV

Definition at line 979 of file [ccodata.h](#).

**17.12.2.672 U\_TAU\_MASS**

```
const double U_TAU_MASS =0.00021e-27
```

kg

Definition at line 982 of file [ccodata.h](#).

**17.12.2.673 U\_TAU\_MASS\_ENERGY\_EQUIVALENT**

```
const double U_TAU_MASS_ENERGY_EQUIVALENT =0.00019e-10
```

J

Definition at line 985 of file [ccodata.h](#).

**17.12.2.674 U\_TAU\_MASS\_IN\_U**

```
const double U_TAU_MASS_IN_U =0.00013e0
```

u

Definition at line 988 of file [ccodata.h](#).

**17.12.2.675 U\_TAU\_MOLAR\_MASS**

```
const double U_TAU_MOLAR_MASS =0.00013e-3
```

kg mol<sup>-1</sup>

Definition at line 991 of file [ccodata.h](#).

**17.12.2.676 U\_TAU\_MUON\_MASS\_RATIO**

```
const double U_TAU_MUON_MASS_RATIO =0.0011e0
```

Definition at line 994 of file [ccodata.h](#).

**17.12.2.677 U\_TAU\_NEUTRON\_MASS\_RATIO**

```
const double U_TAU_NEUTRON_MASS_RATIO =0.00013e0
```

Definition at line 997 of file [ccodata.h](#).

**17.12.2.678 U\_TAU\_PROTON\_MASS\_RATIO**

```
const double U_TAU_PROTON_MASS_RATIO =0.00013e0
```

Definition at line 1000 of file [ccodata.h](#).

**17.12.2.679 U\_THOMSON\_CROSS\_SECTION**

```
const double U_THOMSON_CROSS_SECTION =0.0000000060e-29
```

m<sup>2</sup>

Definition at line 1003 of file [ccodata.h](#).

**17.12.2.680 U\_TRITON\_ELECTRON\_MASS\_RATIO**

```
const double U_TRITON_ELECTRON_MASS_RATIO =0.00000027e0
```

Definition at line 1006 of file [ccodata.h](#).

**17.12.2.681 U\_TRITON\_G\_FACTOR**

```
const double U_TRITON_G_FACTOR =0.000000012e0
```

Definition at line 1009 of file [ccodata.h](#).

**17.12.2.682 U\_TRITON\_MAG\_\_MOM**

```
const double U_TRITON_MAG__MOM =0.0000000030e-26
```

$J T^{-1}$

Definition at line 1012 of file [ccodata.h](#).

**17.12.2.683 U\_TRITON\_MAG\_\_MOM\_\_TO\_BOHR\_MAGNETON\_RATIO**

```
const double U_TRITON_MAG__MOM__TO_BOHR_MAGNETON_RATIO =0.0000000032e-3
```

Definition at line 1015 of file [ccodata.h](#).

**17.12.2.684 U\_TRITON\_MAG\_\_MOM\_\_TO\_NUCLEAR\_MAGNETON\_RATIO**

```
const double U_TRITON_MAG__MOM__TO_NUCLEAR_MAGNETON_RATIO =0.0000000059e0
```

Definition at line 1018 of file [ccodata.h](#).

**17.12.2.685 U\_TRITON\_MASS**

```
const double U_TRITON_MASS =0.0000000015e-27
```

kg

Definition at line 1021 of file [ccodata.h](#).

**17.12.2.686 U\_TRITON\_MASS\_ENERGY\_EQUIVALENT**

```
const double U_TRITON_MASS_ENERGY_EQUIVALENT =0.0000000014e-10
```

J

Definition at line [1024](#) of file [ccodata.h](#).

**17.12.2.687 U\_TRITON\_MASS\_ENERGY\_EQUIVALENT\_IN\_MEV**

```
const double U_TRITON_MASS_ENERGY_EQUIVALENT_IN_MEV =0.00000085e0
```

MeV

Definition at line [1027](#) of file [ccodata.h](#).

**17.12.2.688 U\_TRITON\_MASS\_IN\_U**

```
const double U_TRITON_MASS_IN_U =0.00000000012e0
```

u

Definition at line [1030](#) of file [ccodata.h](#).

**17.12.2.689 U\_TRITON\_MOLAR\_MASS**

```
const double U_TRITON_MOLAR_MASS =0.00000000092e-3
```

kg mol<sup>-1</sup>

Definition at line [1033](#) of file [ccodata.h](#).

**17.12.2.690 U\_TRITON\_PROTON\_MASS\_RATIO**

```
const double U_TRITON_PROTON_MASS_RATIO =0.00000000015e0
```

Definition at line [1036](#) of file [ccodata.h](#).

**17.12.2.691 U\_TRITON\_RELATIVE\_ATOMIC\_MASS**

```
const double U_TRITON_RELATIVE_ATOMIC_MASS =0.00000000012e0
```

Definition at line 1039 of file [ccodata.h](#).

**17.12.2.692 U\_TRITON\_TO\_PROTON\_MAG\_\_MOM\_\_RATIO**

```
const double U_TRITON_TO_PROTON_MAG__MOM__RATIO =0.0000000021e0
```

Definition at line 1042 of file [ccodata.h](#).

**17.12.2.693 U\_UNIFIED\_ATOMIC\_MASS\_UNIT**

```
const double U_UNIFIED_ATOMIC_MASS_UNIT =0.00000000050e-27
```

kg

Definition at line 1045 of file [ccodata.h](#).

**17.12.2.694 U\_VACUUM\_ELECTRIC\_PERMITTIVITY**

```
const double U_VACUUM_ELECTRIC_PERMITTIVITY =0.0000000013e-12
```

F m<sup>-1</sup>

Definition at line 1048 of file [ccodata.h](#).

**17.12.2.695 U\_VACUUM\_MAG\_\_PERMEABILITY**

```
const double U_VACUUM_MAG__PERMEABILITY =0.00000000019e-6
```

N A<sup>-2</sup>

Definition at line 1051 of file [ccodata.h](#).

**17.12.2.696 U\_VON\_KLITZING\_CONSTANT**

```
const double U_VON_KLITZING_CONSTANT =0.0e0
```

ohm

Definition at line [1054](#) of file [ccodata.h](#).

**17.12.2.697 U\_W\_TO\_Z\_MASS\_RATIO**

```
const double U_W_TO_Z_MASS_RATIO =0.00017e0
```

Definition at line [1066](#) of file [ccodata.h](#).

**17.12.2.698 U\_WEAK\_MIXING\_ANGLE**

```
const double U_WEAK_MIXING_ANGLE =0.00030e0
```

Definition at line [1057](#) of file [ccodata.h](#).

**17.12.2.699 U\_WIEN\_FREQUENCY\_DISPLACEMENT\_LAW\_CONSTANT**

```
const double U_WIEN_FREQUENCY_DISPLACEMENT_LAW_CONSTANT =0.0e0
```

Hz K<sup>-1</sup>

Definition at line [1060](#) of file [ccodata.h](#).

**17.12.2.700 U\_WIEN\_WAVELENGTH\_DISPLACEMENT\_LAW\_CONSTANT**

```
const double U_WIEN_WAVELENGTH_DISPLACEMENT_LAW_CONSTANT =0.0e0
```

m K

Definition at line [1063](#) of file [ccodata.h](#).

**17.12.2.701 UNIFIED\_ATOMIC\_MASS\_UNIT**

```
const double UNIFIED_ATOMIC_MASS_UNIT =1.66053906660e-27
```

kg

Definition at line 1044 of file [ccodata.h](#).

**17.12.2.702 VACUUM\_ELECTRIC\_PERMITTIVITY**

```
const double VACUUM_ELECTRIC_PERMITTIVITY =8.8541878128e-12
```

F m<sup>-1</sup>

Definition at line 1047 of file [ccodata.h](#).

**17.12.2.703 VACUUM\_MAG\_\_PERMEABILITY**

```
const double VACUUM_MAG__PERMEABILITY =1.25663706212e-6
```

N A<sup>-2</sup>

Definition at line 1050 of file [ccodata.h](#).

**17.12.2.704 VON\_KLITZING\_CONSTANT**

```
const double VON_KLITZING_CONSTANT =25812.80745e0
```

ohm

Definition at line 1053 of file [ccodata.h](#).

**17.12.2.705 W\_TO\_Z\_MASS\_RATIO**

```
const double W_TO_Z_MASS_RATIO =0.88153e0
```

Definition at line 1065 of file [ccodata.h](#).

**17.12.2.706 WEAK\_MIXING\_ANGLE**

```
const double WEAK_MIXING_ANGLE =0.22290e0
```

Definition at line [1056](#) of file [ccodata.h](#).

**17.12.2.707 WIEN\_FREQUENCY\_DISPLACEMENT\_LAW\_CONSTANT**

```
const double WIEN_FREQUENCY_DISPLACEMENT_LAW_CONSTANT =5.878925757e10
```

Hz K<sup>-1</sup>

Definition at line [1059](#) of file [ccodata.h](#).

**17.12.2.708 WIEN\_WAVELENGTH\_DISPLACEMENT\_LAW\_CONSTANT**

```
const double WIEN_WAVELENGTH_DISPLACEMENT_LAW_CONSTANT =2.897771955e-3
```

m K

Definition at line [1062](#) of file [ccodata.h](#).

**17.13 ccodata.h**

[Go to the documentation of this file.](#)

```
00001
00006 const double ALPHA_PARTICLE_ELECTRON_MASS_RATIO=7294.29954142e0;
00007 const double U_ALPHA_PARTICLE_ELECTRON_MASS_RATIO=0.00000024e0;
00009 const double ALPHA_PARTICLE_MASS=6.6446573357e-27;
00010 const double U_ALPHA_PARTICLE_MASS=0.0000000020e-27;
00012 const double ALPHA_PARTICLE_MASS_ENERGY_EQUIVALENT=5.9719201914e-10;
00013 const double U_ALPHA_PARTICLE_MASS_ENERGY_EQUIVALENT=0.0000000018e-10;
00015 const double ALPHA_PARTICLE_MASS_ENERGY_EQUIVALENT_IN_MEV=3727.3794066e0;
00016 const double U_ALPHA_PARTICLE_MASS_ENERGY_EQUIVALENT_IN_MEV=0.0000011e0;
00018 const double ALPHA_PARTICLE_MASS_IN_U=4.001506179127e0;
00019 const double U_ALPHA_PARTICLE_MASS_IN_U=0.000000000063e0;
00021 const double ALPHA_PARTICLE_MOLAR_MASS=4.0015061777e-3;
00022 const double U_ALPHA_PARTICLE_MOLAR_MASS=0.0000000012e-3;
00024 const double ALPHA_PARTICLE_PROTON_MASS_RATIO=3.97259969009e0;
00025 const double U_ALPHA_PARTICLE_PROTON_MASS_RATIO=0.00000000022e0;
00027 const double ALPHA_PARTICLE_RELATIVE_ATOMIC_MASS=4.001506179127e0;
00028 const double U_ALPHA_PARTICLE_RELATIVE_ATOMIC_MASS=0.000000000063e0;
00030 const double ANGSTROM_STAR=1.00001495e-10;
00031 const double U_ANGSTROM_STAR=0.00000090e-10;
00033 const double ATOMIC_MASS_CONSTANT=1.66053906660e-27;
00034 const double U_ATOMIC_MASS_CONSTANT=0.00000000050e-27;
00036 const double ATOMIC_MASS_CONSTANT_ENERGY_EQUIVALENT=1.49241808560e-10;
00037 const double U_ATOMIC_MASS_CONSTANT_ENERGY_EQUIVALENT=0.00000000045e-10;
00039 const double ATOMIC_MASS_CONSTANT_ENERGY_EQUIVALENT_IN_MEV=931.49410242e0;
00040 const double U_ATOMIC_MASS_CONSTANT_ENERGY_EQUIVALENT_IN_MEV=0.000000028e0;
00042 const double ATOMIC_MASS_UNIT_ELECTRON_VOLT_RELATIONSHIP=9.3149410242e8;
00043 const double U_ATOMIC_MASS_UNIT_ELECTRON_VOLT_RELATIONSHIP=0.0000000028e8;
00045 const double ATOMIC_MASS_UNIT_HARTREE_RELATIONSHIP=3.4231776874e7;
00046 const double U_ATOMIC_MASS_UNIT_HARTREE_RELATIONSHIP=0.0000000010e7;
00048 const double ATOMIC_MASS_UNIT_HERTZ_RELATIONSHIP=2.25234271871e23;
00049 const double U_ATOMIC_MASS_UNIT_HERTZ_RELATIONSHIP=0.0000000068e23;
00051 const double ATOMIC_MASS_UNIT_INVERSE_METER_RELATIONSHIP=7.5130066104e14;
00052 const double U_ATOMIC_MASS_UNIT_INVERSE_METER_RELATIONSHIP=0.0000000023e14;
00054 const double ATOMIC_MASS_UNIT_JOULE_RELATIONSHIP=1.49241808560e-10;
00055 const double U_ATOMIC_MASS_UNIT_JOULE_RELATIONSHIP=0.0000000045e-10;
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00057 const double ATOMIC_MASS_UNIT_KELVIN_RELATIONSHIP=1.08095401916e13;
00058 const double U_ATOMIC_MASS_UNIT_KELVIN_RELATIONSHIP=0.00000000033e13;
00060 const double ATOMIC_MASS_UNIT_KILOGRAM_RELATIONSHIP=1.66053906660e-27;
00061 const double U_ATOMIC_MASS_UNIT_KILOGRAM_RELATIONSHIP=0.00000000050e-27;
00063 const double ATOMIC_UNIT_OF_1ST_HYPERPOLARIZABILITY=3.2063613061e-53;
00064 const double U_ATOMIC_UNIT_OF_1ST_HYPERPOLARIZABILITY=0.0000000015e-53;
00066 const double ATOMIC_UNIT_OF_2ND_HYPERPOLARIZABILITY=6.2353799905e-65;
00067 const double U_ATOMIC_UNIT_OF_2ND_HYPERPOLARIZABILITY=0.0000000038e-65;
00069 const double ATOMIC_UNIT_OF_ACTION=1.054571817e-34;
00070 const double U_ATOMIC_UNIT_OF_ACTION=0.0e0;
00072 const double ATOMIC_UNIT_OF_CHARGE=1.602176634e-19;
00073 const double U_ATOMIC_UNIT_OF_CHARGE=0.0e0;
00075 const double ATOMIC_UNIT_OF_CHARGE_DENSITY=1.08120238457e12;
00076 const double U_ATOMIC_UNIT_OF_CHARGE_DENSITY=0.00000000049e12;
00078 const double ATOMIC_UNIT_OF_CURRENT=6.623618237510e-3;
00079 const double U_ATOMIC_UNIT_OF_CURRENT=0.00000000013e-3;
00081 const double ATOMIC_UNIT_OF_ELECTRIC_DIPOLE_MOM=8.4783536255e-30;
00082 const double U_ATOMIC_UNIT_OF_ELECTRIC_DIPOLE_MOM=0.0000000013e-30;
00084 const double ATOMIC_UNIT_OF_ELECTRIC_FIELD=5.14220674763e11;
00085 const double U_ATOMIC_UNIT_OF_ELECTRIC_FIELD=0.00000000078e11;
00087 const double ATOMIC_UNIT_OF_ELECTRIC_FIELD_GRADIENT=9.7173624292e21;
00088 const double U_ATOMIC_UNIT_OF_ELECTRIC_FIELD_GRADIENT=0.0000000029e21;
00090 const double ATOMIC_UNIT_OF_ELECTRIC_POLARIZABILITY=1.64877727436e-41;
00091 const double U_ATOMIC_UNIT_OF_ELECTRIC_POLARIZABILITY=0.00000000050e-41;
00093 const double ATOMIC_UNIT_OF_ELECTRIC_POTENTIAL=27.211386245988e0;
00094 const double U_ATOMIC_UNIT_OF_ELECTRIC_POTENTIAL=0.00000000053e0;
00096 const double ATOMIC_UNIT_OF_ELECTRIC_QUADRUPOLE_MOM=4.4865515246e-40;
00097 const double U_ATOMIC_UNIT_OF_ELECTRIC_QUADRUPOLE_MOM=0.0000000014e-40;
00099 const double ATOMIC_UNIT_OF_ENERGY=4.3597447222071e-18;
00100 const double U_ATOMIC_UNIT_OF_ENERGY=0.000000000085e-18;
00102 const double ATOMIC_UNIT_OF_FORCE=8.2387234983e-8;
00103 const double U_ATOMIC_UNIT_OF_FORCE=0.0000000012e-8;
00105 const double ATOMIC_UNIT_OF_LENGTH=5.29177210903e-11;
00106 const double U_ATOMIC_UNIT_OF_LENGTH=0.00000000080e-11;
00108 const double ATOMIC_UNIT_OF_MAG_DIPOLE_MOM=1.85480201566e-23;
00109 const double U_ATOMIC_UNIT_OF_MAG_DIPOLE_MOM=0.00000000056e-23;
00111 const double ATOMIC_UNIT_OF_MAG_FLUX_DENSITY=2.35051756758e5;
00112 const double U_ATOMIC_UNIT_OF_MAG_FLUX_DENSITY=0.00000000071e5;
00114 const double ATOMIC_UNIT_OF_MAGNETIZABILITY=7.8910366008e-29;
00115 const double U_ATOMIC_UNIT_OF_MAGNETIZABILITY=0.0000000048e-29;
00117 const double ATOMIC_UNIT_OF_MASS=9.1093837015e-31;
00118 const double U_ATOMIC_UNIT_OF_MASS=0.00000000028e-31;
00120 const double ATOMIC_UNIT_OF_MOMENTUM=1.99285191410e-24;
00121 const double U_ATOMIC_UNIT_OF_MOMENTUM=0.00000000030e-24;
00123 const double ATOMIC_UNIT_OF_PERMITTIVITY=1.11265005545e-10;
00124 const double U_ATOMIC_UNIT_OF_PERMITTIVITY=0.0000000017e-10;
00126 const double ATOMIC_UNIT_OF_TIME=2.4188843265857e-17;
00127 const double U_ATOMIC_UNIT_OF_TIME=0.000000000047e-17;
00129 const double ATOMIC_UNIT_OF_VELOCITY=2.18769126364e6;
00130 const double U_ATOMIC_UNIT_OF_VELOCITY=0.00000000033e6;
00132 const double AVOGADRO_CONSTANT=6.02214076e23;
00133 const double U_AVOGADRO_CONSTANT=0.0e0;
00135 const double BOHR_MAGNETON=9.2740100783e-24;
00136 const double U_BOHR_MAGNETON=0.0000000028e-24;
00138 const double BOHR_MAGNETON_IN_EV_T=5.7883818060e-5;
00139 const double U_BOHR_MAGNETON_IN_EV_T=0.0000000017e-5;
00141 const double BOHR_MAGNETON_IN_HZ_T=1.39962449361e10;
00142 const double U_BOHR_MAGNETON_IN_HZ_T=0.00000000042e10;
00144 const double BOHR_MAGNETON_IN_INVERSE_METER_PER_TESLA=46.686447783e0;
00145 const double U_BOHR_MAGNETON_IN_INVERSE_METER_PER_TESLA=0.000000014e0;
00147 const double BOHR_MAGNETON_IN_K_T=0.67171381563e0;
00148 const double U_BOHR_MAGNETON_IN_K_T=0.00000000020e0;
00150 const double BOHR_RADIUS=5.29177210903e-11;
00151 const double U_BOHR_RADIUS=0.00000000080e-11;
00153 const double BOLTZMANN_CONSTANT=1.380649e-23;
00154 const double U_BOLTZMANN_CONSTANT=0.0e0;
00156 const double BOLTZMANN_CONSTANT_IN_EV_K=8.617333262e-5;
00157 const double U_BOLTZMANN_CONSTANT_IN_EV_K=0.0e0;
00159 const double BOLTZMANN_CONSTANT_IN_HZ_K=2.083661912e10;
00160 const double U_BOLTZMANN_CONSTANT_IN_HZ_K=0.0e0;
00162 const double BOLTZMANN_CONSTANT_IN_INVERSE_METER_PER_KELVIN=69.50348004e0;
00163 const double U_BOLTZMANN_CONSTANT_IN_INVERSE_METER_PER_KELVIN=0.0e0;
00165 const double CHARACTERISTIC_IMPEDANCE_OF_VACUUM=376.730313668e0;
00166 const double U_CHARACTERISTIC_IMPEDANCE_OF_VACUUM=0.000000057e0;
00168 const double CLASSICAL_ELECTRON_RADIUS=2.8179403262e-15;
00169 const double U_CLASSICAL_ELECTRON_RADIUS=0.0000000013e-15;
00171 const double COMPTON_WAVELENGTH=2.42631023867e-12;
00172 const double U_COMPTON_WAVELENGTH=0.00000000073e-12;
00174 const double CONDUCTANCE_QUANTUM=7.748091729e-5;
00175 const double U_CONDUCTANCE_QUANTUM=0.0e0;
00177 const double CONVENTIONAL_VALUE_OF_AMPERE_90=1.00000008887e0;
00178 const double U_CONVENTIONAL_VALUE_OF_AMPERE_90=0.0e0;
00180 const double CONVENTIONAL_VALUE_OF_COULOMB_90=1.00000008887e0;
00181 const double U_CONVENTIONAL_VALUE_OF_COULOMB_90=0.0e0;
00183 const double CONVENTIONAL_VALUE_OF_FARAD_90=0.99999998220e0;
00184 const double U_CONVENTIONAL_VALUE_OF_FARAD_90=0.0e0;
00186 const double CONVENTIONAL_VALUE_OF_HENRY_90=1.00000001779e0;
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00187 const double U_CONVENTIONAL_VALUE_OF_HENRY_90=0.0e0;
00189 const double CONVENTIONAL_VALUE_OF_JOSEPHSON_CONSTANT=483597.9e9;
00190 const double U_CONVENTIONAL_VALUE_OF_JOSEPHSON_CONSTANT=0.0e0;
00192 const double CONVENTIONAL_VALUE_OF_OHM_90=1.00000001779e0;
00193 const double U_CONVENTIONAL_VALUE_OF_OHM_90=0.0e0;
00195 const double CONVENTIONAL_VALUE_OF_VOLT_90=1.00000010666e0;
00196 const double U_CONVENTIONAL_VALUE_OF_VOLT_90=0.0e0;
00198 const double CONVENTIONAL_VALUE_OF_VON_KLITZING_CONSTANT=25812.807e0;
00199 const double U_CONVENTIONAL_VALUE_OF_VON_KLITZING_CONSTANT=0.0e0;
00201 const double CONVENTIONAL_VALUE_OF_WATT_90=1.00000019553e0;
00202 const double U_CONVENTIONAL_VALUE_OF_WATT_90=0.0e0;
00204 const double COPPER_X_UNIT=1.00207697e-13;
00205 const double U_COPPER_X_UNIT=0.00000028e-13;
00207 const double DEUTERON_ELECTRON_MAG_MOM_RATIO=-4.664345551e-4;
00208 const double U_DEUTERON_ELECTRON_MAG_MOM_RATIO=0.000000012e-4;
00210 const double DEUTERON_ELECTRON_MASS_RATIO=3670.48296788e0;
00211 const double U_DEUTERON_ELECTRON_MASS_RATIO=0.00000013e0;
00213 const double DEUTERON_G_FACTOR=0.8574382338e0;
00214 const double U_DEUTERON_G_FACTOR=0.000000022e0;
00216 const double DEUTERON_MAG_MOM=4.330735094e-27;
00217 const double U_DEUTERON_MAG_MOM=0.000000011e-27;
00219 const double DEUTERON_MAG_MOM_TO_BOHR_MAGNETON_RATIO=4.669754570e-4;
00220 const double U_DEUTERON_MAG_MOM_TO_BOHR_MAGNETON_RATIO=0.000000012e-4;
00222 const double DEUTERON_MAG_MOM_TO_NUCLEAR_MAGNETON_RATIO=0.8574382338e0;
00223 const double U_DEUTERON_MAG_MOM_TO_NUCLEAR_MAGNETON_RATIO=0.000000022e0;
00225 const double DEUTERON_MASS=3.3435837724e-27;
00226 const double U_DEUTERON_MASS=0.0000000010e-27;
00228 const double DEUTERON_MASS_ENERGY_EQUIVALENT=3.00506323102e-10;
00229 const double U_DEUTERON_MASS_ENERGY_EQUIVALENT=0.00000000091e-10;
00231 const double DEUTERON_MASS_ENERGY_EQUIVALENT_IN_MEV=1875.61294257e0;
00232 const double U_DEUTERON_MASS_ENERGY_EQUIVALENT_IN_MEV=0.00000057e0;
00234 const double DEUTERON_MASS_IN_U=2.013553212745e0;
00235 const double U_DEUTERON_MASS_IN_U=0.000000000040e0;
00237 const double DEUTERON_MOLAR_MASS=2.01355321205e-3;
00238 const double U_DEUTERON_MOLAR_MASS=0.00000000061e-3;
00240 const double DEUTERON_NEUTRON_MAG_MOM_RATIO=-0.44820653e0;
00241 const double U_DEUTERON_NEUTRON_MAG_MOM_RATIO=0.00000011e0;
00243 const double DEUTERON_PROTON_MAG_MOM_RATIO=0.30701220939e0;
00244 const double U_DEUTERON_PROTON_MAG_MOM_RATIO=0.00000000079e0;
00246 const double DEUTERON_PROTON_MASS_RATIO=1.99900750139e0;
00247 const double U_DEUTERON_PROTON_MASS_RATIO=0.00000000011e0;
00249 const double DEUTERON_RELATIVE_ATOMIC_MASS=2.013553212745e0;
00250 const double U_DEUTERON_RELATIVE_ATOMIC_MASS=0.000000000040e0;
00252 const double DEUTERON_RMS_CHARGE_RADIUS=2.12799e-15;
00253 const double U_DEUTERON_RMS_CHARGE_RADIUS=0.00074e-15;
00255 const double ELECTRON_CHARGE_TO_MASS_QUOTIENT=-1.75882001076e11;
00256 const double U_ELECTRON_CHARGE_TO_MASS_QUOTIENT=0.0000000053e11;
00258 const double ELECTRON_DEUTERON_MAG_MOM_RATIO=-2143.9234915e0;
00259 const double U_ELECTRON_DEUTERON_MAG_MOM_RATIO=0.0000056e0;
00261 const double ELECTRON_DEUTERON_MASS_RATIO=2.724437107462e-4;
00262 const double U_ELECTRON_DEUTERON_MASS_RATIO=0.000000000096e-4;
00264 const double ELECTRON_G_FACTOR=-2.00231930436256e0;
00265 const double U_ELECTRON_G_FACTOR=0.0000000000035e0;
00267 const double ELECTRON_GYROMAG_RATIO=1.76085963023e11;
00268 const double U_ELECTRON_GYROMAG_RATIO=0.00000000053e11;
00270 const double ELECTRON_GYROMAG_RATIO_IN_MHZ_T=28024.9514242e0;
00271 const double U_ELECTRON_GYROMAG_RATIO_IN_MHZ_T=0.0000085e0;
00273 const double ELECTRON_HELION_MASS_RATIO=1.819543074573e-4;
00274 const double U_ELECTRON_HELION_MASS_RATIO=0.00000000079e-4;
00276 const double ELECTRON_MAG_MOM=-9.2847647043e-24;
00277 const double U_ELECTRON_MAG_MOM=0.0000000028e-24;
00279 const double ELECTRON_MAG_MOM_ANOMALY=1.15965218128e-3;
00280 const double U_ELECTRON_MAG_MOM_ANOMALY=0.00000000018e-3;
00282 const double ELECTRON_MAG_MOM_TO_BOHR_MAGNETON_RATIO=-1.00115965218128e0;
00283 const double U_ELECTRON_MAG_MOM_TO_BOHR_MAGNETON_RATIO=0.0000000000018e0;
00285 const double ELECTRON_MAG_MOM_TO_NUCLEAR_MAGNETON_RATIO=-1838.28197188e0;
00286 const double U_ELECTRON_MAG_MOM_TO_NUCLEAR_MAGNETON_RATIO=0.00000011e0;
00288 const double ELECTRON_MASS=9.1093837015e-31;
00289 const double U_ELECTRON_MASS=0.0000000028e-31;
00291 const double ELECTRON_MASS_ENERGY_EQUIVALENT=8.1871057769e-14;
00292 const double U_ELECTRON_MASS_ENERGY_EQUIVALENT=0.0000000025e-14;
00294 const double ELECTRON_MASS_ENERGY_EQUIVALENT_IN_MEV=0.51099895000e0;
00295 const double U_ELECTRON_MASS_ENERGY_EQUIVALENT_IN_MEV=0.00000000015e0;
00297 const double ELECTRON_MASS_IN_U=5.48579909065e-4;
00298 const double U_ELECTRON_MASS_IN_U=0.00000000016e-4;
00300 const double ELECTRON_MOLAR_MASS=5.4857990888e-7;
00301 const double U_ELECTRON_MOLAR_MASS=0.0000000017e-7;
00303 const double ELECTRON_MUON_MAG_MOM_RATIO=206.7669883e0;
00304 const double U_ELECTRON_MUON_MAG_MOM_RATIO=0.0000046e0;
00306 const double ELECTRON_MUON_MASS_RATIO=4.83633169e-3;
00307 const double U_ELECTRON_MUON_MASS_RATIO=0.00000011e-3;
00309 const double ELECTRON_NEUTRON_MAG_MOM_RATIO=960.92050e0;
00310 const double U_ELECTRON_NEUTRON_MAG_MOM_RATIO=0.00023e0;
00312 const double ELECTRON_NEUTRON_MASS_RATIO=5.4386734424e-4;
00313 const double U_ELECTRON_NEUTRON_MASS_RATIO=0.000000026e-4;
00315 const double ELECTRON_PROTON_MAG_MOM_RATIO=-658.21068789e0;
00316 const double U_ELECTRON_PROTON_MAG_MOM_RATIO=0.00000020e0;
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00318 const double ELECTRON_PROTON_MASS_RATIO=5.44617021487e-4;
00319 const double U_ELECTRON_PROTON_MASS_RATIO=0.00000000033e-4;
00321 const double ELECTRON_RELATIVE_ATOMIC_MASS=5.48579909065e-4;
00322 const double U_ELECTRON_RELATIVE_ATOMIC_MASS=0.00000000016e-4;
00324 const double ELECTRON_TAU_MASS_RATIO=2.87585e-4;
00325 const double U_ELECTRON_TAU_MASS_RATIO=0.00019e-4;
00327 const double ELECTRON_TO_ALPHA_PARTICLE_MASS_RATIO=1.370933554787e-4;
00328 const double U_ELECTRON_TO_ALPHA_PARTICLE_MASS_RATIO=0.00000000045e-4;
00330 const double ELECTRON_TO_SHIELDED_HELION_MAG_MOM_RATIO=864.058257e0;
00331 const double U_ELECTRON_TO_SHIELDED_HELION_MAG_MOM_RATIO=0.000010e0;
00333 const double ELECTRON_TO_SHIELDED_PROTON_MAG_MOM_RATIO=-658.2275971e0;
00334 const double U_ELECTRON_TO_SHIELDED_PROTON_MAG_MOM_RATIO=0.0000072e0;
00336 const double ELECTRON_TRITON_MASS_RATIO=1.819200062251e-4;
00337 const double U_ELECTRON_TRITON_MASS_RATIO=0.000000000090e-4;
00339 const double ELECTRON_VOLT=1.602176634e-19;
00340 const double U_ELECTRON_VOLT=0.0e0;
00342 const double ELECTRON_VOLT_ATOMIC_MASS_UNIT_RELATIONSHIP=1.07354410233e-9;
00343 const double U_ELECTRON_VOLT_ATOMIC_MASS_UNIT_RELATIONSHIP=0.00000000032e-9;
00345 const double ELECTRON_VOLT_HARTREE_RELATIONSHIP=3.6749322175655e-2;
00346 const double U_ELECTRON_VOLT_HARTREE_RELATIONSHIP=0.000000000071e-2;
00348 const double ELECTRON_VOLT_HERTZ_RELATIONSHIP=2.417989242e14;
00349 const double U_ELECTRON_VOLT_HERTZ_RELATIONSHIP=0.0e0;
00351 const double ELECTRON_VOLT_INVERSE_METER_RELATIONSHIP=8.065543937e5;
00352 const double U_ELECTRON_VOLT_INVERSE_METER_RELATIONSHIP=0.0e0;
00354 const double ELECTRON_VOLT_JOULE_RELATIONSHIP=1.602176634e-19;
00355 const double U_ELECTRON_VOLT_JOULE_RELATIONSHIP=0.0e0;
00357 const double ELECTRON_VOLT_KELVIN_RELATIONSHIP=1.160451812e4;
00358 const double U_ELECTRON_VOLT_KELVIN_RELATIONSHIP=0.0e0;
00360 const double ELECTRON_VOLT_KILOGRAM_RELATIONSHIP=1.782661921e-36;
00361 const double U_ELECTRON_VOLT_KILOGRAM_RELATIONSHIP=0.0e0;
00363 const double ELEMENTARY_CHARGE=1.602176634e-19;
00364 const double U_ELEMENTARY_CHARGE=0.0e0;
00366 const double ELEMENTARY_CHARGE_OVER_H_BAR=1.519267447e15;
00367 const double U_ELEMENTARY_CHARGE_OVER_H_BAR=0.0e0;
00369 const double FARADAY_CONSTANT=96485.33212e0;
00370 const double U_FARADAY_CONSTANT=0.0e0;
00372 const double FERMI_COUPLING_CONSTANT=1.1663787e-5;
00373 const double U_FERMI_COUPLING_CONSTANT=0.0000006e-5;
00375 const double FINE_STRUCTURE_CONSTANT=7.2973525693e-3;
00376 const double U_FINE_STRUCTURE_CONSTANT=0.0000000011e-3;
00378 const double FIRST_RADIATION_CONSTANT=3.741771852e-16;
00379 const double U_FIRST_RADIATION_CONSTANT=0.0e0;
00381 const double FIRST_RADIATION_CONSTANT_FOR_SPECTRAL_RADIANCE=1.191042972e-16;
00382 const double U_FIRST_RADIATION_CONSTANT_FOR_SPECTRAL_RADIANCE=0.0e0;
00384 const double HARTREE_ATOMIC_MASS_UNIT_RELATIONSHIP=2.92126232205e-8;
00385 const double U_HARTREE_ATOMIC_MASS_UNIT_RELATIONSHIP=0.00000000088e-8;
00387 const double HARTREE_ELECTRON_VOLT_RELATIONSHIP=27.211386245988e0;
00388 const double U_HARTREE_ELECTRON_VOLT_RELATIONSHIP=0.000000000053e0;
00390 const double HARTREE_ENERGY=4.3597447222071e-18;
00391 const double U_HARTREE_ENERGY=0.000000000085e-18;
00393 const double HARTREE_ENERGY_IN_EV=27.211386245988e0;
00394 const double U_HARTREE_ENERGY_IN_EV=0.000000000053e0;
00396 const double HARTREE_HERTZ_RELATIONSHIP=6.579683920502e15;
00397 const double U_HARTREE_HERTZ_RELATIONSHIP=0.000000000013e15;
00399 const double HARTREE_INVERSE_METER_RELATIONSHIP=2.1947463136320e7;
00400 const double U_HARTREE_INVERSE_METER_RELATIONSHIP=0.000000000043e7;
00402 const double HARTREE_JOULE_RELATIONSHIP=4.3597447222071e-18;
00403 const double U_HARTREE_JOULE_RELATIONSHIP=0.000000000085e-18;
00405 const double HARTREE_KELVIN_RELATIONSHIP=3.1577502480407e5;
00406 const double U_HARTREE_KELVIN_RELATIONSHIP=0.000000000061e5;
00408 const double HARTREE_KILOGRAM_RELATIONSHIP=4.8508702095432e-35;
00409 const double U_HARTREE_KILOGRAM_RELATIONSHIP=0.000000000094e-35;
00411 const double HELION_ELECTRON_MASS_RATIO=5495.88528007e0;
00412 const double U_HELION_ELECTRON_MASS_RATIO=0.00000024e0;
00414 const double HELION_G_FACTOR=-4.255250615e0;
00415 const double U_HELION_G_FACTOR=0.00000050e0;
00417 const double HELION_MAG_MOM=-1.074617532e-26;
00418 const double U_HELION_MAG_MOM=0.000000013e-26;
00420 const double HELION_MAG_MOM_TO_BOHR_MAGNETON_RATIO=-1.158740958e-3;
00421 const double U_HELION_MAG_MOM_TO_BOHR_MAGNETON_RATIO=0.000000014e-3;
00423 const double HELION_MAG_MOM_TO_NUCLEAR_MAGNETON_RATIO=-2.127625307e0;
00424 const double U_HELION_MAG_MOM_TO_NUCLEAR_MAGNETON_RATIO=0.000000025e0;
00426 const double HELION_MASS=5.0064127796e-27;
00427 const double U_HELION_MASS=0.0000000015e-27;
00429 const double HELION_MASS_ENERGY_EQUIVALENT=4.4995394125e-10;
00430 const double U_HELION_MASS_ENERGY_EQUIVALENT=0.0000000014e-10;
00432 const double HELION_MASS_ENERGY_EQUIVALENT_IN_MEV=2808.39160743e0;
00433 const double U_HELION_MASS_ENERGY_EQUIVALENT_IN_MEV=0.00000085e0;
00435 const double HELION_MASS_IN_U=3.014932247175e0;
00436 const double U_HELION_MASS_IN_U=0.000000000097e0;
00438 const double HELION_MOLAR_MASS=3.01493224613e-3;
00439 const double U_HELION_MOLAR_MASS=0.00000000091e-3;
00441 const double HELION_PROTON_MASS_RATIO=2.99315267167e0;
00442 const double U_HELION_PROTON_MASS_RATIO=0.00000000013e0;
00444 const double HELION_RELATIVE_ATOMIC_MASS=3.014932247175e0;
00445 const double U_HELION_RELATIVE_ATOMIC_MASS=0.000000000097e0;
00447 const double HELION_SHIELDING_SHIFT=5.996743e-5;
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00448 const double U_HELION_SHIELDING_SHIFT=0.000010e-5;
00450 const double HERTZ_ATOMIC_MASS_UNIT_RELATIONSHIP=4.4398216652e-24;
00451 const double U_HERTZ_ATOMIC_MASS_UNIT_RELATIONSHIP=0.0000000013e-24;
00453 const double HERTZ_ELECTRON_VOLT_RELATIONSHIP=4.135667696e-15;
00454 const double U_HERTZ_ELECTRON_VOLT_RELATIONSHIP=0.0e0;
00456 const double HERTZ_HARTREE_RELATIONSHIP=1.5198298460570e-16;
00457 const double U_HERTZ_HARTREE_RELATIONSHIP=0.000000000029e-16;
00459 const double HERTZ_INVERSE_METER_RELATIONSHIP=3.335640951e-9;
00460 const double U_HERTZ_INVERSE_METER_RELATIONSHIP=0.0e0;
00462 const double HERTZ_JOULE_RELATIONSHIP=6.62607015e-34;
00463 const double U_HERTZ_JOULE_RELATIONSHIP=0.0e0;
00465 const double HERTZ_KELVIN_RELATIONSHIP=4.799243073e-11;
00466 const double U_HERTZ_KELVIN_RELATIONSHIP=0.0e0;
00468 const double HERTZ_KILOGRAM_RELATIONSHIP=7.372497323e-51;
00469 const double U_HERTZ_KILOGRAM_RELATIONSHIP=0.0e0;
00471 const double HYPERFINE_TRANSITION_FREQUENCY_OF_CS_133=9192631770.0e0;
00472 const double U_HYPERFINE_TRANSITION_FREQUENCY_OF_CS_133=0.0e0;
00474 const double INVERSE_FINE_STRUCTURE_CONSTANT=137.035999084e0;
00475 const double U_INVERSE_FINE_STRUCTURE_CONSTANT=0.000000021e0;
00477 const double INVERSE_METER_ATOMIC_MASS_UNIT_RELATIONSHIP=1.33102505010e-15;
00478 const double U_INVERSE_METER_ATOMIC_MASS_UNIT_RELATIONSHIP=0.0000000040e-15;
00480 const double INVERSE_METER_ELECTRON_VOLT_RELATIONSHIP=1.239841984e-6;
00481 const double U_INVERSE_METER_ELECTRON_VOLT_RELATIONSHIP=0.0e0;
00483 const double INVERSE_METER_HARTREE_RELATIONSHIP=4.5563352529120e-8;
00484 const double U_INVERSE_METER_HARTREE_RELATIONSHIP=0.000000000088e-8;
00486 const double INVERSE_METER_HERTZ_RELATIONSHIP=299792458.0e0;
00487 const double U_INVERSE_METER_HERTZ_RELATIONSHIP=0.0e0;
00489 const double INVERSE_METER_JOULE_RELATIONSHIP=1.986445857e-25;
00490 const double U_INVERSE_METER_JOULE_RELATIONSHIP=0.0e0;
00492 const double INVERSE_METER_KELVIN_RELATIONSHIP=1.438776877e-2;
00493 const double U_INVERSE_METER_KELVIN_RELATIONSHIP=0.0e0;
00495 const double INVERSE_METER_KILOGRAM_RELATIONSHIP=2.210219094e-42;
00496 const double U_INVERSE_METER_KILOGRAM_RELATIONSHIP=0.0e0;
00498 const double INVERSE_OF_CONDUCTANCE_QUANTUM=12906.40372e0;
00499 const double U_INVERSE_OF_CONDUCTANCE_QUANTUM=0.0e0;
00501 const double JOSEPHSON_CONSTANT=483597.8484e9;
00502 const double U_JOSEPHSON_CONSTANT=0.0e0;
00504 const double JOULE_ATOMIC_MASS_UNIT_RELATIONSHIP=6.7005352565e9;
00505 const double U_JOULE_ATOMIC_MASS_UNIT_RELATIONSHIP=0.0000000020e9;
00507 const double JOULE_ELECTRON_VOLT_RELATIONSHIP=6.241509074e18;
00508 const double U_JOULE_ELECTRON_VOLT_RELATIONSHIP=0.0e0;
00510 const double JOULE_HARTREE_RELATIONSHIP=2.2937122783963e17;
00511 const double U_JOULE_HARTREE_RELATIONSHIP=0.0000000000045e17;
00513 const double JOULE_HERTZ_RELATIONSHIP=1.509190179e33;
00514 const double U_JOULE_HERTZ_RELATIONSHIP=0.0e0;
00516 const double JOULE_INVERSE_METER_RELATIONSHIP=5.034116567e24;
00517 const double U_JOULE_INVERSE_METER_RELATIONSHIP=0.0e0;
00519 const double JOULE_KELVIN_RELATIONSHIP=7.242970516e22;
00520 const double U_JOULE_KELVIN_RELATIONSHIP=0.0e0;
00522 const double JOULE_KILOGRAM_RELATIONSHIP=1.112650056e-17;
00523 const double U_JOULE_KILOGRAM_RELATIONSHIP=0.0e0;
00525 const double KELVIN_ATOMIC_MASS_UNIT_RELATIONSHIP=9.2510873014e-14;
00526 const double U_KELVIN_ATOMIC_MASS_UNIT_RELATIONSHIP=0.0000000028e-14;
00528 const double KELVIN_ELECTRON_VOLT_RELATIONSHIP=8.617333262e-5;
00529 const double U_KELVIN_ELECTRON_VOLT_RELATIONSHIP=0.0e0;
00531 const double KELVIN_HARTREE_RELATIONSHIP=3.1668115634556e-6;
00532 const double U_KELVIN_HARTREE_RELATIONSHIP=0.0000000000061e-6;
00534 const double KELVIN_HERTZ_RELATIONSHIP=2.083661912e10;
00535 const double U_KELVIN_HERTZ_RELATIONSHIP=0.0e0;
00537 const double KELVIN_INVERSE_METER_RELATIONSHIP=69.50348004e0;
00538 const double U_KELVIN_INVERSE_METER_RELATIONSHIP=0.0e0;
00540 const double KELVIN_JOULE_RELATIONSHIP=1.380649e-23;
00541 const double U_KELVIN_JOULE_RELATIONSHIP=0.0e0;
00543 const double KELVIN_KILOGRAM_RELATIONSHIP=1.536179187e-40;
00544 const double U_KELVIN_KILOGRAM_RELATIONSHIP=0.0e0;
00546 const double KILOGRAM_ATOMIC_MASS_UNIT_RELATIONSHIP=6.0221407621e26;
00547 const double U_KILOGRAM_ATOMIC_MASS_UNIT_RELATIONSHIP=0.0000000018e26;
00549 const double KILOGRAM_ELECTRON_VOLT_RELATIONSHIP=5.609588603e35;
00550 const double U_KILOGRAM_ELECTRON_VOLT_RELATIONSHIP=0.0e0;
00552 const double KILOGRAM_HARTREE_RELATIONSHIP=2.0614857887409e34;
00553 const double U_KILOGRAM_HARTREE_RELATIONSHIP=0.0000000000040e34;
00555 const double KILOGRAM_HERTZ_RELATIONSHIP=1.356392489e50;
00556 const double U_KILOGRAM_HERTZ_RELATIONSHIP=0.0e0;
00558 const double KILOGRAM_INVERSE_METER_RELATIONSHIP=4.524438335e41;
00559 const double U_KILOGRAM_INVERSE_METER_RELATIONSHIP=0.0e0;
00561 const double KILOGRAM_JOULE_RELATIONSHIP=8.987551787e16;
00562 const double U_KILOGRAM_JOULE_RELATIONSHIP=0.0e0;
00564 const double KILOGRAM_KELVIN_RELATIONSHIP=6.509657260e39;
00565 const double U_KILOGRAM_KELVIN_RELATIONSHIP=0.0e0;
00567 const double LATTICE_PARAMETER_OF_SILICON=5.431020511e-10;
00568 const double U_LATTICE_PARAMETER_OF_SILICON=0.000000089e-10;
00570 const double LATTICE_SPACING_OF_IDEAL_SI_220=1.920155716e-10;
00571 const double U_LATTICE_SPACING_OF_IDEAL_SI_220=0.000000032e-10;
00573 const double LOSCHMIDT_CONSTANT_273_15_K_100_KPA=2.651645804e25;
00574 const double U_LOSCHMIDT_CONSTANT_273_15_K_100_KPA=0.0e0;
00576 const double LOSCHMIDT_CONSTANT_273_15_K_101_325_KPA=2.686780111e25;
00577 const double U_LOSCHMIDT_CONSTANT_273_15_K_101_325_KPA=0.0e0;
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00579 const double LUMINOUS_EFFICACY=683.0e0;
00580 const double U_LUMINOUS_EFFICACY=0.0e0;
00582 const double MAG_FLUX_QUANTUM=2.067833848e-15;
00583 const double U_MAG_FLUX_QUANTUM=0.0e0;
00585 const double MOLAR_GAS_CONSTANT=8.314462618e0;
00586 const double U_MOLAR_GAS_CONSTANT=0.0e0;
00588 const double MOLAR_MASS_CONSTANT=0.99999999965e-3;
00589 const double U_MOLAR_MASS_CONSTANT=0.00000000030e-3;
00591 const double MOLAR_MASS_OF_CARBON_12=11.9999999958e-3;
00592 const double U_MOLAR_MASS_OF_CARBON_12=0.0000000036e-3;
00594 const double MOLAR_PLANCK_CONSTANT=3.990312712e-10;
00595 const double U_MOLAR_PLANCK_CONSTANT=0.0e0;
00597 const double MOLAR_VOLUME_OF_IDEAL_GAS_273_15_K_100_KPA=22.71095464e-3;
00598 const double U_MOLAR_VOLUME_OF_IDEAL_GAS_273_15_K_100_KPA=0.0e0;
00600 const double MOLAR_VOLUME_OF_IDEAL_GAS_273_15_K_101_325_KPA=22.41396954e-3;
00601 const double U_MOLAR_VOLUME_OF_IDEAL_GAS_273_15_K_101_325_KPA=0.0e0;
00603 const double MOLAR_VOLUME_OF_SILICON=1.205883199e-5;
00604 const double U_MOLAR_VOLUME_OF_SILICON=0.000000060e-5;
00606 const double MOLYBDENUM_X_UNIT=1.00209952e-13;
00607 const double U_MOLYBDENUM_X_UNIT=0.00000053e-13;
00609 const double MUON_COMPTON_WAVELENGTH=1.173444110e-14;
00610 const double U_MUON_COMPTON_WAVELENGTH=0.000000026e-14;
00612 const double MUON_ELECTRON_MASS_RATIO=206.7682830e0;
00613 const double U_MUON_ELECTRON_MASS_RATIO=0.0000046e0;
00615 const double MUON_G_FACTOR=-2.0023318418e0;
00616 const double U_MUON_G_FACTOR=0.000000013e0;
00618 const double MUON_MAG_MOM=-4.49044830e-26;
00619 const double U_MUON_MAG_MOM=0.00000010e-26;
00621 const double MUON_MAG_MOM_ANOMALY=1.16592089e-3;
00622 const double U_MUON_MAG_MOM_ANOMALY=0.00000063e-3;
00624 const double MUON_MAG_MOM_TO_BOHR_MAGNETON_RATIO=-4.84197047e-3;
00625 const double U_MUON_MAG_MOM_TO_BOHR_MAGNETON_RATIO=0.00000011e-3;
00627 const double MUON_MAG_MOM_TO_NUCLEAR_MAGNETON_RATIO=-8.89059703e0;
00628 const double U_MUON_MAG_MOM_TO_NUCLEAR_MAGNETON_RATIO=0.00000020e0;
00630 const double MUON_MASS=1.883531627e-28;
00631 const double U_MUON_MASS=0.000000042e-28;
00633 const double MUON_MASS_ENERGY_EQUIVALENT=1.692833804e-11;
00634 const double U_MUON_MASS_ENERGY_EQUIVALENT=0.000000038e-11;
00636 const double MUON_MASS_ENERGY_EQUIVALENT_IN_MEV=105.6583755e0;
00637 const double U_MUON_MASS_ENERGY_EQUIVALENT_IN_MEV=0.0000023e0;
00639 const double MUON_MASS_IN_U=0.1134289259e0;
00640 const double U_MUON_MASS_IN_U=0.0000000025e0;
00642 const double MUON_MOLAR_MASS=1.134289259e-4;
00643 const double U_MUON_MOLAR_MASS=0.000000025e-4;
00645 const double MUON_NEUTRON_MASS_RATIO=0.1124545170e0;
00646 const double U_MUON_NEUTRON_MASS_RATIO=0.0000000025e0;
00648 const double MUON_PROTON_MAG_MOM_RATIO=-3.183345142e0;
00649 const double U_MUON_PROTON_MAG_MOM_RATIO=0.000000071e0;
00651 const double MUON_PROTON_MASS_RATIO=0.1126095264e0;
00652 const double U_MUON_PROTON_MASS_RATIO=0.0000000025e0;
00654 const double MUON_TAU_MASS_RATIO=5.94635e-2;
00655 const double U_MUON_TAU_MASS_RATIO=0.00040e-2;
00657 const double NATURAL_UNIT_OF_ACTION=1.054571817e-34;
00658 const double U_NATURAL_UNIT_OF_ACTION=0.0e0;
00660 const double NATURAL_UNIT_OF_ACTION_IN_EV_S=6.582119569e-16;
00661 const double U_NATURAL_UNIT_OF_ACTION_IN_EV_S=0.0e0;
00663 const double NATURAL_UNIT_OF_ENERGY=8.1871057769e-14;
00664 const double U_NATURAL_UNIT_OF_ENERGY=0.0000000025e-14;
00666 const double NATURAL_UNIT_OF_ENERGY_IN_MEV=0.51099895000e0;
00667 const double U_NATURAL_UNIT_OF_ENERGY_IN_MEV=0.0000000015e0;
00669 const double NATURAL_UNIT_OF_LENGTH=3.8615926796e-13;
00670 const double U_NATURAL_UNIT_OF_LENGTH=0.0000000012e-13;
00672 const double NATURAL_UNIT_OF_MASS=9.1093837015e-31;
00673 const double U_NATURAL_UNIT_OF_MASS=0.0000000028e-31;
00675 const double NATURAL_UNIT_OF_MOMENTUM=2.73092453075e-22;
00676 const double U_NATURAL_UNIT_OF_MOMENTUM=0.0000000082e-22;
00678 const double NATURAL_UNIT_OF_MOMENTUM_IN_MEV_C=0.51099895000e0;
00679 const double U_NATURAL_UNIT_OF_MOMENTUM_IN_MEV_C=0.0000000015e0;
00681 const double NATURAL_UNIT_OF_TIME=1.28808866819e-21;
00682 const double U_NATURAL_UNIT_OF_TIME=0.00000000039e-21;
00684 const double NATURAL_UNIT_OF_VELOCITY=299792458.0e0;
00685 const double U_NATURAL_UNIT_OF_VELOCITY=0.0e0;
00687 const double NEUTRON_COMPTON_WAVELENGTH=1.31959090581e-15;
00688 const double U_NEUTRON_COMPTON_WAVELENGTH=0.00000000075e-15;
00690 const double NEUTRON_ELECTRON_MAG_MOM_RATIO=1.04066882e-3;
00691 const double U_NEUTRON_ELECTRON_MAG_MOM_RATIO=0.00000025e-3;
00693 const double NEUTRON_ELECTRON_MASS_RATIO=1838.68366173e0;
00694 const double U_NEUTRON_ELECTRON_MASS_RATIO=0.00000089e0;
00696 const double NEUTRON_G_FACTOR=-3.82608545e0;
00697 const double U_NEUTRON_G_FACTOR=0.00000090e0;
00699 const double NEUTRON_GYROMAG_RATIO=1.83247171e8;
00700 const double U_NEUTRON_GYROMAG_RATIO=0.00000043e8;
00702 const double NEUTRON_GYROMAG_RATIO_IN_MHZ_T=29.1646931e0;
00703 const double U_NEUTRON_GYROMAG_RATIO_IN_MHZ_T=0.0000069e0;
00705 const double NEUTRON_MAG_MOM=-9.6623651e-27;
00706 const double U_NEUTRON_MAG_MOM=0.0000023e-27;
00708 const double NEUTRON_MAG_MOM_TO_BOHR_MAGNETON_RATIO=-1.04187563e-3;
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00709 const double U_NEUTRON_MAG_MOM_TO_BOHR_MAGNETON_RATIO=0.00000025e-3;
00711 const double NEUTRON_MAG_MOM_TO_NUCLEAR_MAGNETON_RATIO=-1.91304273e0;
00712 const double U_NEUTRON_MAG_MOM_TO_NUCLEAR_MAGNETON_RATIO=0.00000045e0;
00714 const double NEUTRON_MASS=1.67492749804e-27;
00715 const double U_NEUTRON_MASS=0.00000000095e-27;
00717 const double NEUTRON_MASS_ENERGY_EQUIVALENT=1.50534976287e-10;
00718 const double U_NEUTRON_MASS_ENERGY_EQUIVALENT=0.00000000086e-10;
00720 const double NEUTRON_MASS_ENERGY_EQUIVALENT_IN_MEV=939.56542052e0;
00721 const double U_NEUTRON_MASS_ENERGY_EQUIVALENT_IN_MEV=0.00000054e0;
00723 const double NEUTRON_MASS_IN_U=1.00866491595e0;
00724 const double U_NEUTRON_MASS_IN_U=0.00000000049e0;
00726 const double NEUTRON_MOLAR_MASS=1.00866491560e-3;
00727 const double U_NEUTRON_MOLAR_MASS=0.00000000057e-3;
00729 const double NEUTRON_MUON_MASS_RATIO=8.89248406e0;
00730 const double U_NEUTRON_MUON_MASS_RATIO=0.00000020e0;
00732 const double NEUTRON_PROTON_MAG_MOM_RATIO=-0.68497934e0;
00733 const double U_NEUTRON_PROTON_MAG_MOM_RATIO=0.00000016e0;
00735 const double NEUTRON_PROTON_MASS_DIFFERENCE=2.30557435e-30;
00736 const double U_NEUTRON_PROTON_MASS_DIFFERENCE=0.00000082e-30;
00738 const double NEUTRON_PROTON_MASS_DIFFERENCE_ENERGY_EQUIVALENT=2.07214689e-13;
00739 const double U_NEUTRON_PROTON_MASS_DIFFERENCE_ENERGY_EQUIVALENT=0.00000074e-13;
00741 const double NEUTRON_PROTON_MASS_DIFFERENCE_ENERGY_EQUIVALENT_IN_MEV=1.29333236e0;
00742 const double U_NEUTRON_PROTON_MASS_DIFFERENCE_ENERGY_EQUIVALENT_IN_MEV=0.00000046e0;
00744 const double NEUTRON_PROTON_MASS_DIFFERENCE_IN_U=1.38844933e-3;
00745 const double U_NEUTRON_PROTON_MASS_DIFFERENCE_IN_U=0.00000049e-3;
00747 const double NEUTRON_PROTON_MASS_RATIO=1.00137841931e0;
00748 const double U_NEUTRON_PROTON_MASS_RATIO=0.00000000049e0;
00750 const double NEUTRON_RELATIVE_ATOMIC_MASS=1.00866491595e0;
00751 const double U_NEUTRON_RELATIVE_ATOMIC_MASS=0.00000000049e0;
00753 const double NEUTRON_TAU_MASS_RATIO=0.528779e0;
00754 const double U_NEUTRON_TAU_MASS_RATIO=0.000036e0;
00756 const double NEUTRON_TO_SHIELDED_PROTON_MAG_MOM_RATIO=-0.68499694e0;
00757 const double U_NEUTRON_TO_SHIELDED_PROTON_MAG_MOM_RATIO=0.00000016e0;
00759 const double NEWTONIAN_CONSTANT_OF_GRAVITATION=6.67430e-11;
00760 const double U_NEWTONIAN_CONSTANT_OF_GRAVITATION=0.00015e-11;
00762 const double NEWTONIAN_CONSTANT_OF_GRAVITATION_OVER_H_BAR_C=6.70883e-39;
00763 const double U_NEWTONIAN_CONSTANT_OF_GRAVITATION_OVER_H_BAR_C=0.00015e-39;
00765 const double NUCLEAR_MAGNETON=5.0507837461e-27;
00766 const double U_NUCLEAR_MAGNETON=0.0000000015e-27;
00768 const double NUCLEAR_MAGNETON_IN_EV_T=3.15245125844e-8;
00769 const double U_NUCLEAR_MAGNETON_IN_EV_T=0.00000000096e-8;
00771 const double NUCLEAR_MAGNETON_IN_INVERSE_METER_PER_TESLA=2.54262341353e-2;
00772 const double U_NUCLEAR_MAGNETON_IN_INVERSE_METER_PER_TESLA=0.00000000078e-2;
00774 const double NUCLEAR_MAGNETON_IN_K_T=3.6582677756e-4;
00775 const double U_NUCLEAR_MAGNETON_IN_K_T=0.0000000011e-4;
00777 const double NUCLEAR_MAGNETON_IN_MHZ_T=7.6225932291e0;
00778 const double U_NUCLEAR_MAGNETON_IN_MHZ_T=0.0000000023e0;
00780 const double PLANCK_CONSTANT=6.62607015e-34;
00781 const double U_PLANCK_CONSTANT=0.0e0;
00783 const double PLANCK_CONSTANT_IN_EV_HZ=4.135667696e-15;
00784 const double U_PLANCK_CONSTANT_IN_EV_HZ=0.0e0;
00786 const double PLANCK_LENGTH=1.616255e-35;
00787 const double U_PLANCK_LENGTH=0.000018e-35;
00789 const double PLANCK_MASS=2.176434e-8;
00790 const double U_PLANCK_MASS=0.000024e-8;
00792 const double PLANCK_MASS_ENERGY_EQUIVALENT_IN_GEV=1.220890e19;
00793 const double U_PLANCK_MASS_ENERGY_EQUIVALENT_IN_GEV=0.000014e19;
00795 const double PLANCK_TEMPERATURE=1.416784e32;
00796 const double U_PLANCK_TEMPERATURE=0.000016e32;
00798 const double PLANCK_TIME=5.391247e-44;
00799 const double U_PLANCK_TIME=0.000060e-44;
00801 const double PROTON_CHARGE_TO_MASS_QUOTIENT=9.5788331560e7;
00802 const double U_PROTON_CHARGE_TO_MASS_QUOTIENT=0.0000000029e7;
00804 const double PROTON_COMPTON_WAVELENGTH=1.32140985539e-15;
00805 const double U_PROTON_COMPTON_WAVELENGTH=0.00000000040e-15;
00807 const double PROTON_ELECTRON_MASS_RATIO=1836.15267343e0;
00808 const double U_PROTON_ELECTRON_MASS_RATIO=0.00000011e0;
00810 const double PROTON_G_FACTOR=5.5856946893e0;
00811 const double U_PROTON_G_FACTOR=0.0000000016e0;
00813 const double PROTON_GYROMAG_RATIO=2.6752218744e8;
00814 const double U_PROTON_GYROMAG_RATIO=0.0000000011e8;
00816 const double PROTON_GYROMAG_RATIO_IN_MHZ_T=42.577478518e0;
00817 const double U_PROTON_GYROMAG_RATIO_IN_MHZ_T=0.000000018e0;
00819 const double PROTON_MAG_MOM=1.41060679736e-26;
00820 const double U_PROTON_MAG_MOM=0.00000000060e-26;
00822 const double PROTON_MAG_MOM_TO_BOHR_MAGNETON_RATIO=1.52103220230e-3;
00823 const double U_PROTON_MAG_MOM_TO_BOHR_MAGNETON_RATIO=0.00000000046e-3;
00825 const double PROTON_MAG_MOM_TO_NUCLEAR_MAGNETON_RATIO=2.79284734463e0;
00826 const double U_PROTON_MAG_MOM_TO_NUCLEAR_MAGNETON_RATIO=0.00000000082e0;
00828 const double PROTON_MAG_SHIELDING_CORRECTION=2.5689e-5;
00829 const double U_PROTON_MAG_SHIELDING_CORRECTION=0.0011e-5;
00831 const double PROTON_MASS=1.67262192369e-27;
00832 const double U_PROTON_MASS=0.00000000051e-27;
00834 const double PROTON_MASS_ENERGY_EQUIVALENT=1.50327761598e-10;
00835 const double U_PROTON_MASS_ENERGY_EQUIVALENT=0.00000000046e-10;
00837 const double PROTON_MASS_ENERGY_EQUIVALENT_IN_MEV=938.27208816e0;
00838 const double U_PROTON_MASS_ENERGY_EQUIVALENT_IN_MEV=0.00000029e0;
```

```
00840 const double PROTON_MASS_IN_U=1.007276466621e0;
00841 const double U_PROTON_MASS_IN_U=0.000000000053e0;
00843 const double PROTON_MOLAR_MASS=1.00727646627e-3;
00844 const double U_PROTON_MOLAR_MASS=0.00000000031e-3;
00846 const double PROTON_MUON_MASS_RATIO=8.88024337e0;
00847 const double U_PROTON_MUON_MASS_RATIO=0.00000020e0;
00849 const double PROTON_NEUTRON_MAG_MOM_RATIO=-1.45989805e0;
00850 const double U_PROTON_NEUTRON_MAG_MOM_RATIO=0.00000034e0;
00852 const double PROTON_NEUTRON_MASS_RATIO=0.99862347812e0;
00853 const double U_PROTON_NEUTRON_MASS_RATIO=0.0000000049e0;
00855 const double PROTON_RELATIVE_ATOMIC_MASS=1.007276466621e0;
00856 const double U_PROTON_RELATIVE_ATOMIC_MASS=0.00000000053e0;
00858 const double PROTON_RMS_CHARGE_RADIUS=8.414e-16;
00859 const double U_PROTON_RMS_CHARGE_RADIUS=0.019e-16;
00861 const double PROTON_TAU_MASS_RATIO=0.528051e0;
00862 const double U_PROTON_TAU_MASS_RATIO=0.000036e0;
00864 const double QUANTUM_OF_CIRCULATION=3.6369475516e-4;
00865 const double U_QUANTUM_OF_CIRCULATION=0.000000011e-4;
00867 const double QUANTUM_OF_CIRCULATION_TIMES_2=7.2738951032e-4;
00868 const double U_QUANTUM_OF_CIRCULATION_TIMES_2=0.000000022e-4;
00870 const double REDUCED_COMPTON_WAVELENGTH=3.8615926796e-13;
00871 const double U_REduced_COMPTON_WAVELENGTH=0.000000012e-13;
00873 const double REDUCED_MUON_COMPTON_WAVELENGTH=1.867594306e-15;
00874 const double U_REduced_MUON_COMPTON_WAVELENGTH=0.000000042e-15;
00876 const double REDUCED_NEUTRON_COMPTON_WAVELENGTH=2.1001941552e-16;
00877 const double U_REduced_NEUTRON_COMPTON_WAVELENGTH=0.000000012e-16;
00879 const double REDUCED_PLANCK_CONSTANT=1.054571817e-34;
00880 const double U_REduced_PLANCK_CONSTANT=0.0e0;
00882 const double REDUCED_PLANCK_CONSTANT_IN_EV_S=6.582119569e-16;
00883 const double U_REduced_PLANCK_CONSTANT_IN_EV_S=0.0e0;
00885 const double REDUCED_PLANCK_CONSTANT_TIMES_C_IN_MEV_FM=197.3269804e0;
00886 const double U_REduced_PLANCK_CONSTANT_TIMES_C_IN_MEV_FM=0.0e0;
00888 const double REDUCED_PROTON_COMPTON_WAVELENGTH=2.10308910336e-16;
00889 const double U_REduced_PROTON_COMPTON_WAVELENGTH=0.0000000064e-16;
00891 const double REDUCED_TAU_COMPTON_WAVELENGTH=1.110538e-16;
00892 const double U_REduced_TAU_COMPTON_WAVELENGTH=0.000075e-16;
00894 const double RYDBERG_CONSTANT=10973731.568160e0;
00895 const double U_RYDBERG_CONSTANT=0.000021e0;
00897 const double RYDBERG_CONSTANT_TIMES_C_IN_HZ=3.2898419602508e15;
00898 const double U_RYDBERG_CONSTANT_TIMES_C_IN_HZ=0.00000000064e15;
00900 const double RYDBERG_CONSTANT_TIMES_HC_IN_EV=13.605693122994e0;
00901 const double U_RYDBERG_CONSTANT_TIMES_HC_IN_EV=0.00000000026e0;
00903 const double RYDBERG_CONSTANT_TIMES_HC_IN_J=2.1798723611035e-18;
00904 const double U_RYDBERG_CONSTANT_TIMES_HC_IN_J=0.00000000042e-18;
00906 const double SACKUR_TETRODE_CONSTANT_1_K_100_KPA=-1.15170753706e0;
00907 const double U_SACKUR_TETRODE_CONSTANT_1_K_100_KPA=0.0000000045e0;
00909 const double SACKUR_TETRODE_CONSTANT_1_K_101_325_KPA=-1.16487052358e0;
00910 const double U_SACKUR_TETRODE_CONSTANT_1_K_101_325_KPA=0.0000000045e0;
00912 const double SECOND_RADIATION_CONSTANT=1.438776877e-2;
00913 const double U_SECOND_RADIATION_CONSTANT=0.0e0;
00915 const double SHIELDED_HELION_GYROMAG_RATIO=2.037894569e8;
00916 const double U_SHIELDED_HELION_GYROMAG_RATIO=0.00000024e8;
00918 const double SHIELDED_HELION_GYROMAG_RATIO_IN_MHZ_T=32.43409942e0;
00919 const double U_SHIELDED_HELION_GYROMAG_RATIO_IN_MHZ_T=0.00000038e0;
00921 const double SHIELDED_HELION_MAG_MOM=-1.074553090e-26;
00922 const double U_SHIELDED_HELION_MAG_MOM=0.00000013e-26;
00924 const double SHIELDED_HELION_MAG_MOM_TO_BOHR_MAGNETON_RATIO=-1.158671471e-3;
00925 const double U_SHIELDED_HELION_MAG_MOM_TO_BOHR_MAGNETON_RATIO=0.00000014e-3;
00927 const double SHIELDED_HELION_MAG_MOM_TO_NUCLEAR_MAGNETON_RATIO=-2.127497719e0;
00928 const double U_SHIELDED_HELION_MAG_MOM_TO_NUCLEAR_MAGNETON_RATIO=0.000000025e0;
00930 const double SHIELDED_HELION_TO_PROTON_MAG_MOM_RATIO=-0.7617665618e0;
00931 const double U_SHIELDED_HELION_TO_PROTON_MAG_MOM_RATIO=0.000000089e0;
00933 const double SHIELDED_HELION_TO_SHIELDED_PROTON_MAG_MOM_RATIO=-0.7617861313e0;
00934 const double U_SHIELDED_HELION_TO_SHIELDED_PROTON_MAG_MOM_RATIO=0.000000033e0;
00936 const double SHIELDED_PROTON_GYROMAG_RATIO=2.675153151e8;
00937 const double U_SHIELDED_PROTON_GYROMAG_RATIO=0.00000029e8;
00939 const double SHIELDED_PROTON_GYROMAG_RATIO_IN_MHZ_T=42.57638474e0;
00940 const double U_SHIELDED_PROTON_GYROMAG_RATIO_IN_MHZ_T=0.00000046e0;
00942 const double SHIELDED_PROTON_MAG_MOM=1.410570560e-26;
00943 const double U_SHIELDED_PROTON_MAG_MOM=0.00000015e-26;
00945 const double SHIELDED_PROTON_MAG_MOM_TO_BOHR_MAGNETON_RATIO=1.520993128e-3;
00946 const double U_SHIELDED_PROTON_MAG_MOM_TO_BOHR_MAGNETON_RATIO=0.00000017e-3;
00948 const double SHIELDED_PROTON_MAG_MOM_TO_NUCLEAR_MAGNETON_RATIO=2.792775599e0;
00949 const double U_SHIELDED_PROTON_MAG_MOM_TO_NUCLEAR_MAGNETON_RATIO=0.00000030e0;
00951 const double SHIELDING_DIFFERENCE_OF_D_AND_P_IN_HD=2.0200e-8;
00952 const double U_SHIELDING_DIFFERENCE_OF_D_AND_P_IN_HD=0.0020e-8;
00954 const double SHIELDING_DIFFERENCE_OF_T_AND_P_IN_HT=2.4140e-8;
00955 const double U_SHIELDING_DIFFERENCE_OF_T_AND_P_IN_HT=0.0020e-8;
00957 const double SPEED_OF_LIGHT_IN_VACUUM=299792458.0e0;
00958 const double U_SPEED_OF_LIGHT_IN_VACUUM=0.0e0;
00960 const double STANDARD_ACCELERATION_OF_GRAVITY=9.80665e0;
00961 const double U_STANDARD_ACCELERATION_OF_GRAVITY=0.0e0;
00963 const double STANDARD_ATMOSPHERE=101325.0e0;
00964 const double U_STANDARD_ATMOSPHERE=0.0e0;
00966 const double STANDARD_STATE_PRESSURE=100000.0e0;
00967 const double U_STANDARD_STATE_PRESSURE=0.0e0;
00969 const double STEFAN_BOLTZMANN_CONSTANT=5.670374419e-8;
```

```

00970 const double U_STEFAN_BOLTZMANN_CONSTANT=0.0e0;
00972 const double TAU_COMPTON_WAVELENGTH=6.97771e-16;
00973 const double U_TAU_COMPTON_WAVELENGTH=0.00047e-16;
00975 const double TAU_ELECTRON_MASS_RATIO=3477.23e0;
00976 const double U_TAU_ELECTRON_MASS_RATIO=0.23e0;
00978 const double TAU_ENERGY_EQUIVALENT=1776.86e0;
00979 const double U_TAU_ENERGY_EQUIVALENT=0.12e0;
00981 const double TAU_MASS=3.16754e-27;
00982 const double U_TAU_MASS=0.00021e-27;
00984 const double TAU_MASS_ENERGY_EQUIVALENT=2.84684e-10;
00985 const double U_TAU_MASS_ENERGY_EQUIVALENT=0.00019e-10;
00987 const double TAU_MASS_IN_U=1.90754e0;
00988 const double U_TAU_MASS_IN_U=0.00013e0;
00990 const double TAU_MOLAR_MASS=1.90754e-3;
00991 const double U_TAU_MOLAR_MASS=0.00013e-3;
00993 const double TAU_MUON_MASS_RATIO=16.8170e0;
00994 const double U_TAU_MUON_MASS_RATIO=0.0011e0;
00996 const double TAU_NEUTRON_MASS_RATIO=1.89115e0;
00997 const double U_TAU_NEUTRON_MASS_RATIO=0.00013e0;
00999 const double TAU_PROTON_MASS_RATIO=1.89376e0;
01000 const double U_TAU_PROTON_MASS_RATIO=0.00013e0;
01002 const double THOMSON_CROSS_SECTION=6.6524587321e-29;
01003 const double U_THOMSON_CROSS_SECTION=0.0000000060e-29;
01005 const double TRITON_ELECTRON_MASS_RATIO=5496.92153573e0;
01006 const double U_TRITON_ELECTRON_MASS_RATIO=0.00000027e0;
01008 const double TRITON_G_FACTOR=5.957924931e0;
01009 const double U_TRITON_G_FACTOR=0.000000012e0;
01011 const double TRITON_MAG_MOM=1.5046095202e-26;
01012 const double U_TRITON_MAG_MOM=0.0000000030e-26;
01014 const double TRITON_MAG_MOM_TO_BOHR_MAGNETON_RATIO=1.6223936651e-3;
01015 const double U_TRITON_MAG_MOM_TO_BOHR_MAGNETON_RATIO=0.0000000032e-3;
01017 const double TRITON_MAG_MOM_TO_NUCLEAR_MAGNETON_RATIO=2.9789624656e0;
01018 const double U_TRITON_MAG_MOM_TO_NUCLEAR_MAGNETON_RATIO=0.0000000059e0;
01020 const double TRITON_MASS=5.0073567446e-27;
01021 const double U_TRITON_MASS=0.0000000015e-27;
01023 const double TRITON_MASS_ENERGY_EQUIVALENT=4.5003878060e-10;
01024 const double U_TRITON_MASS_ENERGY_EQUIVALENT=0.0000000014e-10;
01026 const double TRITON_MASS_ENERGY_EQUIVALENT_IN_MEV=2808.92113298e0;
01027 const double U_TRITON_MASS_ENERGY_EQUIVALENT_IN_MEV=0.000000085e0;
01029 const double TRITON_MASS_IN_U=3.01550071621e0;
01030 const double U_TRITON_MASS_IN_U=0.00000000012e0;
01032 const double TRITON_MOLAR_MASS=3.01550071517e-3;
01033 const double U_TRITON_MOLAR_MASS=0.00000000092e-3;
01035 const double TRITON_PROTON_MASS_RATIO=2.99371703414e0;
01036 const double U_TRITON_PROTON_MASS_RATIO=0.00000000015e0;
01038 const double TRITON_RELATIVE_ATOMIC_MASS=3.01550071621e0;
01039 const double U_TRITON_RELATIVE_ATOMIC_MASS=0.00000000012e0;
01041 const double TRITON_TO_PROTON_MAG_MOM_RATIO=1.0666399191e0;
01042 const double U_TRITON_TO_PROTON_MAG_MOM_RATIO=0.0000000021e0;
01044 const double UNIFIED_ATOMIC_MASS_UNIT=1.66053906660e-27;
01045 const double U_UNIFIED_ATOMIC_MASS_UNIT=0.00000000050e-27;
01047 const double VACUUM_ELECTRIC_PERMITTIVITY=8.8541878128e-12;
01048 const double U_VACUUM_ELECTRIC_PERMITTIVITY=0.0000000013e-12;
01050 const double VACUUM_MAG_PERMEABILITY=1.25663706212e-6;
01051 const double U_VACUUM_MAG_PERMEABILITY=0.00000000019e-6;
01053 const double VON_KLITZING_CONSTANT=25812.80745e0;
01054 const double U_VON_KLITZING_CONSTANT=0.0e0;
01056 const double WEAK_MIXING_ANGLE=0.22290e0;
01057 const double U_WEAK_MIXING_ANGLE=0.00030e0;
01059 const double WIEN_FREQUENCY_DISPLACEMENT_LAW_CONSTANT=5.878925757e10;
01060 const double U_WIEN_FREQUENCY_DISPLACEMENT_LAW_CONSTANT=0.0e0;
01062 const double WIEN_WAVELENGTH_DISPLACEMENT_LAW_CONSTANT=2.897771955e-3;
01063 const double U_WIEN_WAVELENGTH_DISPLACEMENT_LAW_CONSTANT=0.0e0;
01065 const double W_TO_Z_MASS_RATIO=0.88153e0;
01066 const double U_W_TO_Z_MASS_RATIO=0.00017e0;

```

## 17.14 /Users/milan/programs/codata/src/cpycodata.c File Reference

```

#include <Python.h>
#include "codata.h"

```

### Macros

- #define PY\_SSIZE\_T\_CLEAN



## Functions

- [PyDoc\\_STRVAR](#) (module\_docstring, "C extension for codata constants.")
- PyMODINIT\_FUNC [PyInit\\_codata](#) (void)

### 17.14.1 Macro Definition Documentation

#### 17.14.1.1 PY\_SSIZE\_T\_CLEAN

```
#define PY_SSIZE_T_CLEAN
```

Definition at line 1 of file [cpycodata.c](#).

### 17.14.2 Function Documentation

#### 17.14.2.1 PyDoc\_STRVAR()

```
PyDoc_STRVAR (
    module_docstring ,
    "C extension for codata constants." )
```

#### 17.14.2.2 PyInit\_codata()

```
PyMODINIT_FUNC PyInit_codata (
    void )
```

Definition at line 12 of file [cpycodata.c](#).

## 17.15 cpycodata.c

[Go to the documentation of this file.](#)

```

00001 #define PY_SSIZE_T_CLEAN
00002 #include <Python.h>
00003 #include "codata.h"
00004
00005
00006 PyDoc_STRVAR(module_docstring, "C extension for codata constants.");
00007
00008 static PyMethodDef myMethods[] = {{ NULL, NULL, 0, NULL }};
00009
00010 static struct PyModuleDef codata = {PyModuleDef_HEAD_INIT, "codata", module_docstring, -1, myMethods};
00011
00012 PyMODINIT_FUNC PyInit_codata(void) {
00013     PyObject *m;
00014     PyObject *d;
00015     PyObject *v;
00016     m = PyModule_Create(&codata);
00017     d = PyModule_GetDict(m);
00018
00019     v = PyFloat_FromDouble(ALPHA_PARTICLE_ELECTRON_MASS_RATIO);
00020     PyDict_SetItemString(d, "ALPHA_PARTICLE_ELECTRON_MASS_RATIO", v);
00021     Py_INCREF(v);
00022     v = PyFloat_FromDouble(U_ALPHA_PARTICLE_ELECTRON_MASS_RATIO);
00023     PyDict_SetItemString(d, "U_ALPHA_PARTICLE_ELECTRON_MASS_RATIO", v);
00024     Py_INCREF(v);
00025
00026     v = PyFloat_FromDouble(ALPHA_PARTICLE_MASS);
00027     PyDict_SetItemString(d, "ALPHA_PARTICLE_MASS", v);
00028     Py_INCREF(v);
00029     v = PyFloat_FromDouble(U_ALPHA_PARTICLE_MASS);
00030     PyDict_SetItemString(d, "U_ALPHA_PARTICLE_MASS", v);
00031     Py_INCREF(v);
00032
00033     v = PyFloat_FromDouble(ALPHA_PARTICLE_MASS_ENERGY_EQUIVALENT);
00034     PyDict_SetItemString(d, "ALPHA_PARTICLE_MASS_ENERGY_EQUIVALENT", v);
00035     Py_INCREF(v);
00036     v = PyFloat_FromDouble(U_ALPHA_PARTICLE_MASS_ENERGY_EQUIVALENT);
00037     PyDict_SetItemString(d, "U_ALPHA_PARTICLE_MASS_ENERGY_EQUIVALENT", v);
00038     Py_INCREF(v);
00039
00040     v = PyFloat_FromDouble(ALPHA_PARTICLE_MASS_ENERGY_EQUIVALENT_IN_MEV);
00041     PyDict_SetItemString(d, "ALPHA_PARTICLE_MASS_ENERGY_EQUIVALENT_IN_MEV", v);
00042     Py_INCREF(v);
00043     v = PyFloat_FromDouble(U_ALPHA_PARTICLE_MASS_ENERGY_EQUIVALENT_IN_MEV);
00044     PyDict_SetItemString(d, "U_ALPHA_PARTICLE_MASS_ENERGY_EQUIVALENT_IN_MEV", v);
00045     Py_INCREF(v);
00046
00047     v = PyFloat_FromDouble(ALPHA_PARTICLE_MASS_IN_U);
00048     PyDict_SetItemString(d, "ALPHA_PARTICLE_MASS_IN_U", v);
00049     Py_INCREF(v);
00050     v = PyFloat_FromDouble(U_ALPHA_PARTICLE_MASS_IN_U);
00051     PyDict_SetItemString(d, "U_ALPHA_PARTICLE_MASS_IN_U", v);
00052     Py_INCREF(v);
00053
00054     v = PyFloat_FromDouble(ALPHA_PARTICLE_MOLAR_MASS);
00055     PyDict_SetItemString(d, "ALPHA_PARTICLE_MOLAR_MASS", v);
00056     Py_INCREF(v);
00057     v = PyFloat_FromDouble(U_ALPHA_PARTICLE_MOLAR_MASS);
00058     PyDict_SetItemString(d, "U_ALPHA_PARTICLE_MOLAR_MASS", v);
00059     Py_INCREF(v);
00060
00061     v = PyFloat_FromDouble(ALPHA_PARTICLE_PROTON_MASS_RATIO);
00062     PyDict_SetItemString(d, "ALPHA_PARTICLE_PROTON_MASS_RATIO", v);
00063     Py_INCREF(v);
00064     v = PyFloat_FromDouble(U_ALPHA_PARTICLE_PROTON_MASS_RATIO);
00065     PyDict_SetItemString(d, "U_ALPHA_PARTICLE_PROTON_MASS_RATIO", v);
00066     Py_INCREF(v);
00067
00068     v = PyFloat_FromDouble(ALPHA_PARTICLE_RELATIVE_ATOMIC_MASS);
00069     PyDict_SetItemString(d, "ALPHA_PARTICLE_RELATIVE_ATOMIC_MASS", v);
00070     Py_INCREF(v);
00071     v = PyFloat_FromDouble(U_ALPHA_PARTICLE_RELATIVE_ATOMIC_MASS);
00072     PyDict_SetItemString(d, "U_ALPHA_PARTICLE_RELATIVE_ATOMIC_MASS", v);
00073     Py_INCREF(v);
00074
00075     v = PyFloat_FromDouble(ANGSTROM_STAR);
00076     PyDict_SetItemString(d, "ANGSTROM_STAR", v);
00077     Py_INCREF(v);
00078     v = PyFloat_FromDouble(U_ANGSTROM_STAR);
00079     PyDict_SetItemString(d, "U_ANGSTROM_STAR", v);
00080     Py_INCREF(v);
00081
00082     v = PyFloat_FromDouble(ATOMIC_MASS_CONSTANT);

```

```
00083     PyDict_SetItemString(d, "ATOMIC_MASS_CONSTANT", v);
00084     Py_INCREF(v);
00085     v = PyFloat_FromDouble(U_ATOMIC_MASS_CONSTANT);
00086     PyDict_SetItemString(d, "U_ATOMIC_MASS_CONSTANT", v);
00087     Py_INCREF(v);
00088
00089     v = PyFloat_FromDouble(ATOMIC_MASS_CONSTANT_ENERGY_EQUIVALENT);
00090     PyDict_SetItemString(d, "ATOMIC_MASS_CONSTANT_ENERGY_EQUIVALENT", v);
00091     Py_INCREF(v);
00092     v = PyFloat_FromDouble(U_ATOMIC_MASS_CONSTANT_ENERGY_EQUIVALENT);
00093     PyDict_SetItemString(d, "U_ATOMIC_MASS_CONSTANT_ENERGY_EQUIVALENT", v);
00094     Py_INCREF(v);
00095
00096     v = PyFloat_FromDouble(ATOMIC_MASS_CONSTANT_ENERGY_EQUIVALENT_IN_MEV);
00097     PyDict_SetItemString(d, "ATOMIC_MASS_CONSTANT_ENERGY_EQUIVALENT_IN_MEV", v);
00098     Py_INCREF(v);
00099     v = PyFloat_FromDouble(U_ATOMIC_MASS_CONSTANT_ENERGY_EQUIVALENT_IN_MEV);
00100     PyDict_SetItemString(d, "U_ATOMIC_MASS_CONSTANT_ENERGY_EQUIVALENT_IN_MEV", v);
00101     Py_INCREF(v);
00102
00103     v = PyFloat_FromDouble(ATOMIC_MASS_UNIT_ELECTRON_VOLT_RELATIONSHIP);
00104     PyDict_SetItemString(d, "ATOMIC_MASS_UNIT_ELECTRON_VOLT_RELATIONSHIP", v);
00105     Py_INCREF(v);
00106     v = PyFloat_FromDouble(U_ATOMIC_MASS_UNIT_ELECTRON_VOLT_RELATIONSHIP);
00107     PyDict_SetItemString(d, "U_ATOMIC_MASS_UNIT_ELECTRON_VOLT_RELATIONSHIP", v);
00108     Py_INCREF(v);
00109
00110     v = PyFloat_FromDouble(ATOMIC_MASS_UNIT_HARTREE_RELATIONSHIP);
00111     PyDict_SetItemString(d, "ATOMIC_MASS_UNIT_HARTREE_RELATIONSHIP", v);
00112     Py_INCREF(v);
00113     v = PyFloat_FromDouble(U_ATOMIC_MASS_UNIT_HARTREE_RELATIONSHIP);
00114     PyDict_SetItemString(d, "U_ATOMIC_MASS_UNIT_HARTREE_RELATIONSHIP", v);
00115     Py_INCREF(v);
00116
00117     v = PyFloat_FromDouble(ATOMIC_MASS_UNIT_HERTZ_RELATIONSHIP);
00118     PyDict_SetItemString(d, "ATOMIC_MASS_UNIT_HERTZ_RELATIONSHIP", v);
00119     Py_INCREF(v);
00120     v = PyFloat_FromDouble(U_ATOMIC_MASS_UNIT_HERTZ_RELATIONSHIP);
00121     PyDict_SetItemString(d, "U_ATOMIC_MASS_UNIT_HERTZ_RELATIONSHIP", v);
00122     Py_INCREF(v);
00123
00124     v = PyFloat_FromDouble(ATOMIC_MASS_UNIT_INVERSE_METER_RELATIONSHIP);
00125     PyDict_SetItemString(d, "ATOMIC_MASS_UNIT_INVERSE_METER_RELATIONSHIP", v);
00126     Py_INCREF(v);
00127     v = PyFloat_FromDouble(U_ATOMIC_MASS_UNIT_INVERSE_METER_RELATIONSHIP);
00128     PyDict_SetItemString(d, "U_ATOMIC_MASS_UNIT_INVERSE_METER_RELATIONSHIP", v);
00129     Py_INCREF(v);
00130
00131     v = PyFloat_FromDouble(ATOMIC_MASS_UNIT_JOULE_RELATIONSHIP);
00132     PyDict_SetItemString(d, "ATOMIC_MASS_UNIT_JOULE_RELATIONSHIP", v);
00133     Py_INCREF(v);
00134     v = PyFloat_FromDouble(U_ATOMIC_MASS_UNIT_JOULE_RELATIONSHIP);
00135     PyDict_SetItemString(d, "U_ATOMIC_MASS_UNIT_JOULE_RELATIONSHIP", v);
00136     Py_INCREF(v);
00137
00138     v = PyFloat_FromDouble(ATOMIC_MASS_UNIT_KELVIN_RELATIONSHIP);
00139     PyDict_SetItemString(d, "ATOMIC_MASS_UNIT_KELVIN_RELATIONSHIP", v);
00140     Py_INCREF(v);
00141     v = PyFloat_FromDouble(U_ATOMIC_MASS_UNIT_KELVIN_RELATIONSHIP);
00142     PyDict_SetItemString(d, "U_ATOMIC_MASS_UNIT_KELVIN_RELATIONSHIP", v);
00143     Py_INCREF(v);
00144
00145     v = PyFloat_FromDouble(ATOMIC_MASS_UNIT_KILOGRAM_RELATIONSHIP);
00146     PyDict_SetItemString(d, "ATOMIC_MASS_UNIT_KILOGRAM_RELATIONSHIP", v);
00147     Py_INCREF(v);
00148     v = PyFloat_FromDouble(U_ATOMIC_MASS_UNIT_KILOGRAM_RELATIONSHIP);
00149     PyDict_SetItemString(d, "U_ATOMIC_MASS_UNIT_KILOGRAM_RELATIONSHIP", v);
00150     Py_INCREF(v);
00151
00152     v = PyFloat_FromDouble(ATOMIC_UNIT_OF_1ST_HYPERPOLARIZABILITY);
00153     PyDict_SetItemString(d, "ATOMIC_UNIT_OF_1ST_HYPERPOLARIZABILITY", v);
00154     Py_INCREF(v);
00155     v = PyFloat_FromDouble(U_ATOMIC_UNIT_OF_1ST_HYPERPOLARIZABILITY);
00156     PyDict_SetItemString(d, "U_ATOMIC_UNIT_OF_1ST_HYPERPOLARIZABILITY", v);
00157     Py_INCREF(v);
00158
00159     v = PyFloat_FromDouble(ATOMIC_UNIT_OF_2ND_HYPERPOLARIZABILITY);
00160     PyDict_SetItemString(d, "ATOMIC_UNIT_OF_2ND_HYPERPOLARIZABILITY", v);
00161     Py_INCREF(v);
00162     v = PyFloat_FromDouble(U_ATOMIC_UNIT_OF_2ND_HYPERPOLARIZABILITY);
00163     PyDict_SetItemString(d, "U_ATOMIC_UNIT_OF_2ND_HYPERPOLARIZABILITY", v);
00164     Py_INCREF(v);
00165
00166     v = PyFloat_FromDouble(ATOMIC_UNIT_OF_ACTION);
00167     PyDict_SetItemString(d, "ATOMIC_UNIT_OF_ACTION", v);
00168     Py_INCREF(v);
00169     v = PyFloat_FromDouble(U_ATOMIC_UNIT_OF_ACTION);
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```
00170     PyDict_SetItemString(d, "U_ATOMIC_UNIT_OF_ACTION", v);
00171     Py_INCREF(v);
00172
00173     v = PyFloat_FromDouble(ATOMIC_UNIT_OF_CHARGE);
00174     PyDict_SetItemString(d, "ATOMIC_UNIT_OF_CHARGE", v);
00175     Py_INCREF(v);
00176     v = PyFloat_FromDouble(U_ATOMIC_UNIT_OF_CHARGE);
00177     PyDict_SetItemString(d, "U_ATOMIC_UNIT_OF_CHARGE", v);
00178     Py_INCREF(v);
00179
00180     v = PyFloat_FromDouble(ATOMIC_UNIT_OF_CHARGE_DENSITY);
00181     PyDict_SetItemString(d, "ATOMIC_UNIT_OF_CHARGE_DENSITY", v);
00182     Py_INCREF(v);
00183     v = PyFloat_FromDouble(U_ATOMIC_UNIT_OF_CHARGE_DENSITY);
00184     PyDict_SetItemString(d, "U_ATOMIC_UNIT_OF_CHARGE_DENSITY", v);
00185     Py_INCREF(v);
00186
00187     v = PyFloat_FromDouble(ATOMIC_UNIT_OF_CURRENT);
00188     PyDict_SetItemString(d, "ATOMIC_UNIT_OF_CURRENT", v);
00189     Py_INCREF(v);
00190     v = PyFloat_FromDouble(U_ATOMIC_UNIT_OF_CURRENT);
00191     PyDict_SetItemString(d, "U_ATOMIC_UNIT_OF_CURRENT", v);
00192     Py_INCREF(v);
00193
00194     v = PyFloat_FromDouble(ATOMIC_UNIT_OF_ELECTRIC_DIPOLE_MOM);
00195     PyDict_SetItemString(d, "ATOMIC_UNIT_OF_ELECTRIC_DIPOLE_MOM", v);
00196     Py_INCREF(v);
00197     v = PyFloat_FromDouble(U_ATOMIC_UNIT_OF_ELECTRIC_DIPOLE_MOM);
00198     PyDict_SetItemString(d, "U_ATOMIC_UNIT_OF_ELECTRIC_DIPOLE_MOM", v);
00199     Py_INCREF(v);
00200
00201     v = PyFloat_FromDouble(ATOMIC_UNIT_OF_ELECTRIC_FIELD);
00202     PyDict_SetItemString(d, "ATOMIC_UNIT_OF_ELECTRIC_FIELD", v);
00203     Py_INCREF(v);
00204     v = PyFloat_FromDouble(U_ATOMIC_UNIT_OF_ELECTRIC_FIELD);
00205     PyDict_SetItemString(d, "U_ATOMIC_UNIT_OF_ELECTRIC_FIELD", v);
00206     Py_INCREF(v);
00207
00208     v = PyFloat_FromDouble(ATOMIC_UNIT_OF_ELECTRIC_FIELD_GRADIENT);
00209     PyDict_SetItemString(d, "ATOMIC_UNIT_OF_ELECTRIC_FIELD_GRADIENT", v);
00210     Py_INCREF(v);
00211     v = PyFloat_FromDouble(U_ATOMIC_UNIT_OF_ELECTRIC_FIELD_GRADIENT);
00212     PyDict_SetItemString(d, "U_ATOMIC_UNIT_OF_ELECTRIC_FIELD_GRADIENT", v);
00213     Py_INCREF(v);
00214
00215     v = PyFloat_FromDouble(ATOMIC_UNIT_OF_ELECTRIC_POLARIZABILITY);
00216     PyDict_SetItemString(d, "ATOMIC_UNIT_OF_ELECTRIC_POLARIZABILITY", v);
00217     Py_INCREF(v);
00218     v = PyFloat_FromDouble(U_ATOMIC_UNIT_OF_ELECTRIC_POLARIZABILITY);
00219     PyDict_SetItemString(d, "U_ATOMIC_UNIT_OF_ELECTRIC_POLARIZABILITY", v);
00220     Py_INCREF(v);
00221
00222     v = PyFloat_FromDouble(ATOMIC_UNIT_OF_ELECTRIC_POTENTIAL);
00223     PyDict_SetItemString(d, "ATOMIC_UNIT_OF_ELECTRIC_POTENTIAL", v);
00224     Py_INCREF(v);
00225     v = PyFloat_FromDouble(U_ATOMIC_UNIT_OF_ELECTRIC_POTENTIAL);
00226     PyDict_SetItemString(d, "U_ATOMIC_UNIT_OF_ELECTRIC_POTENTIAL", v);
00227     Py_INCREF(v);
00228
00229     v = PyFloat_FromDouble(ATOMIC_UNIT_OF_ELECTRIC_QUADRUPOLE_MOM);
00230     PyDict_SetItemString(d, "ATOMIC_UNIT_OF_ELECTRIC_QUADRUPOLE_MOM", v);
00231     Py_INCREF(v);
00232     v = PyFloat_FromDouble(U_ATOMIC_UNIT_OF_ELECTRIC_QUADRUPOLE_MOM);
00233     PyDict_SetItemString(d, "U_ATOMIC_UNIT_OF_ELECTRIC_QUADRUPOLE_MOM", v);
00234     Py_INCREF(v);
00235
00236     v = PyFloat_FromDouble(ATOMIC_UNIT_OF_ENERGY);
00237     PyDict_SetItemString(d, "ATOMIC_UNIT_OF_ENERGY", v);
00238     Py_INCREF(v);
00239     v = PyFloat_FromDouble(U_ATOMIC_UNIT_OF_ENERGY);
00240     PyDict_SetItemString(d, "U_ATOMIC_UNIT_OF_ENERGY", v);
00241     Py_INCREF(v);
00242
00243     v = PyFloat_FromDouble(ATOMIC_UNIT_OF_FORCE);
00244     PyDict_SetItemString(d, "ATOMIC_UNIT_OF_FORCE", v);
00245     Py_INCREF(v);
00246     v = PyFloat_FromDouble(U_ATOMIC_UNIT_OF_FORCE);
00247     PyDict_SetItemString(d, "U_ATOMIC_UNIT_OF_FORCE", v);
00248     Py_INCREF(v);
00249
00250     v = PyFloat_FromDouble(ATOMIC_UNIT_OF_LENGTH);
00251     PyDict_SetItemString(d, "ATOMIC_UNIT_OF_LENGTH", v);
00252     Py_INCREF(v);
00253     v = PyFloat_FromDouble(U_ATOMIC_UNIT_OF_LENGTH);
00254     PyDict_SetItemString(d, "U_ATOMIC_UNIT_OF_LENGTH", v);
00255     Py_INCREF(v);
00256
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00257     v = PyFloat_FromDouble(ATOMIC_UNIT_OF_MAG__DIPOLE_MOM);
00258     PyDict_SetItemString(d, "ATOMIC_UNIT_OF_MAG__DIPOLE_MOM", v);
00259     Py_INCREF(v);
00260     v = PyFloat_FromDouble(U_ATOMIC_UNIT_OF_MAG__DIPOLE_MOM);
00261     PyDict_SetItemString(d, "U_ATOMIC_UNIT_OF_MAG__DIPOLE_MOM", v);
00262     Py_INCREF(v);
00263
00264     v = PyFloat_FromDouble(ATOMIC_UNIT_OF_MAG__FLUX_DENSITY);
00265     PyDict_SetItemString(d, "ATOMIC_UNIT_OF_MAG__FLUX_DENSITY", v);
00266     Py_INCREF(v);
00267     v = PyFloat_FromDouble(U_ATOMIC_UNIT_OF_MAG__FLUX_DENSITY);
00268     PyDict_SetItemString(d, "U_ATOMIC_UNIT_OF_MAG__FLUX_DENSITY", v);
00269     Py_INCREF(v);
00270
00271     v = PyFloat_FromDouble(ATOMIC_UNIT_OF_MAGNETIZABILITY);
00272     PyDict_SetItemString(d, "ATOMIC_UNIT_OF_MAGNETIZABILITY", v);
00273     Py_INCREF(v);
00274     v = PyFloat_FromDouble(U_ATOMIC_UNIT_OF_MAGNETIZABILITY);
00275     PyDict_SetItemString(d, "U_ATOMIC_UNIT_OF_MAGNETIZABILITY", v);
00276     Py_INCREF(v);
00277
00278     v = PyFloat_FromDouble(ATOMIC_UNIT_OF_MASS);
00279     PyDict_SetItemString(d, "ATOMIC_UNIT_OF_MASS", v);
00280     Py_INCREF(v);
00281     v = PyFloat_FromDouble(U_ATOMIC_UNIT_OF_MASS);
00282     PyDict_SetItemString(d, "U_ATOMIC_UNIT_OF_MASS", v);
00283     Py_INCREF(v);
00284
00285     v = PyFloat_FromDouble(ATOMIC_UNIT_OF_MOMENTUM);
00286     PyDict_SetItemString(d, "ATOMIC_UNIT_OF_MOMENTUM", v);
00287     Py_INCREF(v);
00288     v = PyFloat_FromDouble(U_ATOMIC_UNIT_OF_MOMENTUM);
00289     PyDict_SetItemString(d, "U_ATOMIC_UNIT_OF_MOMENTUM", v);
00290     Py_INCREF(v);
00291
00292     v = PyFloat_FromDouble(ATOMIC_UNIT_OF_PERMITTIVITY);
00293     PyDict_SetItemString(d, "ATOMIC_UNIT_OF_PERMITTIVITY", v);
00294     Py_INCREF(v);
00295     v = PyFloat_FromDouble(U_ATOMIC_UNIT_OF_PERMITTIVITY);
00296     PyDict_SetItemString(d, "U_ATOMIC_UNIT_OF_PERMITTIVITY", v);
00297     Py_INCREF(v);
00298
00299     v = PyFloat_FromDouble(ATOMIC_UNIT_OF_TIME);
00300     PyDict_SetItemString(d, "ATOMIC_UNIT_OF_TIME", v);
00301     Py_INCREF(v);
00302     v = PyFloat_FromDouble(U_ATOMIC_UNIT_OF_TIME);
00303     PyDict_SetItemString(d, "U_ATOMIC_UNIT_OF_TIME", v);
00304     Py_INCREF(v);
00305
00306     v = PyFloat_FromDouble(ATOMIC_UNIT_OF_VELOCITY);
00307     PyDict_SetItemString(d, "ATOMIC_UNIT_OF_VELOCITY", v);
00308     Py_INCREF(v);
00309     v = PyFloat_FromDouble(U_ATOMIC_UNIT_OF_VELOCITY);
00310     PyDict_SetItemString(d, "U_ATOMIC_UNIT_OF_VELOCITY", v);
00311     Py_INCREF(v);
00312
00313     v = PyFloat_FromDouble(AVOGADRO_CONSTANT);
00314     PyDict_SetItemString(d, "AVOGADRO_CONSTANT", v);
00315     Py_INCREF(v);
00316     v = PyFloat_FromDouble(U_AVOGADRO_CONSTANT);
00317     PyDict_SetItemString(d, "U_AVOGADRO_CONSTANT", v);
00318     Py_INCREF(v);
00319
00320     v = PyFloat_FromDouble(BOHR_MAGNETON);
00321     PyDict_SetItemString(d, "BOHR_MAGNETON", v);
00322     Py_INCREF(v);
00323     v = PyFloat_FromDouble(U_BOHR_MAGNETON);
00324     PyDict_SetItemString(d, "U_BOHR_MAGNETON", v);
00325     Py_INCREF(v);
00326
00327     v = PyFloat_FromDouble(BOHR_MAGNETON_IN_EV_T);
00328     PyDict_SetItemString(d, "BOHR_MAGNETON_IN_EV_T", v);
00329     Py_INCREF(v);
00330     v = PyFloat_FromDouble(U_BOHR_MAGNETON_IN_EV_T);
00331     PyDict_SetItemString(d, "U_BOHR_MAGNETON_IN_EV_T", v);
00332     Py_INCREF(v);
00333
00334     v = PyFloat_FromDouble(BOHR_MAGNETON_IN_HZ_T);
00335     PyDict_SetItemString(d, "BOHR_MAGNETON_IN_HZ_T", v);
00336     Py_INCREF(v);
00337     v = PyFloat_FromDouble(U_BOHR_MAGNETON_IN_HZ_T);
00338     PyDict_SetItemString(d, "U_BOHR_MAGNETON_IN_HZ_T", v);
00339     Py_INCREF(v);
00340
00341     v = PyFloat_FromDouble(BOHR_MAGNETON_IN_INVERSE_METER_PER_TESLA);
00342     PyDict_SetItemString(d, "BOHR_MAGNETON_IN_INVERSE_METER_PER_TESLA", v);
00343     Py_INCREF(v);

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00344     v = PyFloat_FromDouble(U_BOHR_MAGNETON_IN_INVERSE_METER_PER_TESLA);
00345     PyDict_SetItemString(d, "U_BOHR_MAGNETON_IN_INVERSE_METER_PER_TESLA", v);
00346     Py_INCREF(v);
00347
00348     v = PyFloat_FromDouble(BOHR_MAGNETON_IN_K_T);
00349     PyDict_SetItemString(d, "BOHR_MAGNETON_IN_K_T", v);
00350     Py_INCREF(v);
00351     v = PyFloat_FromDouble(U_BOHR_MAGNETON_IN_K_T);
00352     PyDict_SetItemString(d, "U_BOHR_MAGNETON_IN_K_T", v);
00353     Py_INCREF(v);
00354
00355     v = PyFloat_FromDouble(BOHR_RADIUS);
00356     PyDict_SetItemString(d, "BOHR_RADIUS", v);
00357     Py_INCREF(v);
00358     v = PyFloat_FromDouble(U_BOHR_RADIUS);
00359     PyDict_SetItemString(d, "U_BOHR_RADIUS", v);
00360     Py_INCREF(v);
00361
00362     v = PyFloat_FromDouble(BOLTZMANN_CONSTANT);
00363     PyDict_SetItemString(d, "BOLTZMANN_CONSTANT", v);
00364     Py_INCREF(v);
00365     v = PyFloat_FromDouble(U_BOLTZMANN_CONSTANT);
00366     PyDict_SetItemString(d, "U_BOLTZMANN_CONSTANT", v);
00367     Py_INCREF(v);
00368
00369     v = PyFloat_FromDouble(BOLTZMANN_CONSTANT_IN_EV_K);
00370     PyDict_SetItemString(d, "BOLTZMANN_CONSTANT_IN_EV_K", v);
00371     Py_INCREF(v);
00372     v = PyFloat_FromDouble(U_BOLTZMANN_CONSTANT_IN_EV_K);
00373     PyDict_SetItemString(d, "U_BOLTZMANN_CONSTANT_IN_EV_K", v);
00374     Py_INCREF(v);
00375
00376     v = PyFloat_FromDouble(BOLTZMANN_CONSTANT_IN_HZ_K);
00377     PyDict_SetItemString(d, "BOLTZMANN_CONSTANT_IN_HZ_K", v);
00378     Py_INCREF(v);
00379     v = PyFloat_FromDouble(U_BOLTZMANN_CONSTANT_IN_HZ_K);
00380     PyDict_SetItemString(d, "U_BOLTZMANN_CONSTANT_IN_HZ_K", v);
00381     Py_INCREF(v);
00382
00383     v = PyFloat_FromDouble(BOLTZMANN_CONSTANT_IN_INVERSE_METER_PER_KELVIN);
00384     PyDict_SetItemString(d, "BOLTZMANN_CONSTANT_IN_INVERSE_METER_PER_KELVIN", v);
00385     Py_INCREF(v);
00386     v = PyFloat_FromDouble(U_BOLTZMANN_CONSTANT_IN_INVERSE_METER_PER_KELVIN);
00387     PyDict_SetItemString(d, "U_BOLTZMANN_CONSTANT_IN_INVERSE_METER_PER_KELVIN", v);
00388     Py_INCREF(v);
00389
00390     v = PyFloat_FromDouble(CHARACTERISTIC_IMPEDANCE_OF_VACUUM);
00391     PyDict_SetItemString(d, "CHARACTERISTIC_IMPEDANCE_OF_VACUUM", v);
00392     Py_INCREF(v);
00393     v = PyFloat_FromDouble(U_CHARACTERISTIC_IMPEDANCE_OF_VACUUM);
00394     PyDict_SetItemString(d, "U_CHARACTERISTIC_IMPEDANCE_OF_VACUUM", v);
00395     Py_INCREF(v);
00396
00397     v = PyFloat_FromDouble(CLASSICAL_ELECTRON_RADIUS);
00398     PyDict_SetItemString(d, "CLASSICAL_ELECTRON_RADIUS", v);
00399     Py_INCREF(v);
00400     v = PyFloat_FromDouble(U_CLASSICAL_ELECTRON_RADIUS);
00401     PyDict_SetItemString(d, "U_CLASSICAL_ELECTRON_RADIUS", v);
00402     Py_INCREF(v);
00403
00404     v = PyFloat_FromDouble(COMPTON_WAVELENGTH);
00405     PyDict_SetItemString(d, "COMPTON_WAVELENGTH", v);
00406     Py_INCREF(v);
00407     v = PyFloat_FromDouble(U_COMPTON_WAVELENGTH);
00408     PyDict_SetItemString(d, "U_COMPTON_WAVELENGTH", v);
00409     Py_INCREF(v);
00410
00411     v = PyFloat_FromDouble(CONDUCTANCE_QUANTUM);
00412     PyDict_SetItemString(d, "CONDUCTANCE_QUANTUM", v);
00413     Py_INCREF(v);
00414     v = PyFloat_FromDouble(U_CONDUCTANCE_QUANTUM);
00415     PyDict_SetItemString(d, "U_CONDUCTANCE_QUANTUM", v);
00416     Py_INCREF(v);
00417
00418     v = PyFloat_FromDouble(CONVENTIONAL_VALUE_OF_AMPERE_90);
00419     PyDict_SetItemString(d, "CONVENTIONAL_VALUE_OF_AMPERE_90", v);
00420     Py_INCREF(v);
00421     v = PyFloat_FromDouble(U_CONVENTIONAL_VALUE_OF_AMPERE_90);
00422     PyDict_SetItemString(d, "U_CONVENTIONAL_VALUE_OF_AMPERE_90", v);
00423     Py_INCREF(v);
00424
00425     v = PyFloat_FromDouble(CONVENTIONAL_VALUE_OF_COULOMB_90);
00426     PyDict_SetItemString(d, "CONVENTIONAL_VALUE_OF_COULOMB_90", v);
00427     Py_INCREF(v);
00428     v = PyFloat_FromDouble(U_CONVENTIONAL_VALUE_OF_COULOMB_90);
00429     PyDict_SetItemString(d, "U_CONVENTIONAL_VALUE_OF_COULOMB_90", v);
00430     Py_INCREF(v);
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00431
00432     v = PyFloat_FromDouble(CONVENTIONAL_VALUE_OF_FARAD_90);
00433     PyDict_SetItemString(d, "CONVENTIONAL_VALUE_OF_FARAD_90", v);
00434     Py_INCREF(v);
00435     v = PyFloat_FromDouble(U_CONVENTIONAL_VALUE_OF_FARAD_90);
00436     PyDict_SetItemString(d, "U_CONVENTIONAL_VALUE_OF_FARAD_90", v);
00437     Py_INCREF(v);
00438
00439     v = PyFloat_FromDouble(CONVENTIONAL_VALUE_OF_HENRY_90);
00440     PyDict_SetItemString(d, "CONVENTIONAL_VALUE_OF_HENRY_90", v);
00441     Py_INCREF(v);
00442     v = PyFloat_FromDouble(U_CONVENTIONAL_VALUE_OF_HENRY_90);
00443     PyDict_SetItemString(d, "U_CONVENTIONAL_VALUE_OF_HENRY_90", v);
00444     Py_INCREF(v);
00445
00446     v = PyFloat_FromDouble(CONVENTIONAL_VALUE_OF_JOSEPHSON_CONSTANT);
00447     PyDict_SetItemString(d, "CONVENTIONAL_VALUE_OF_JOSEPHSON_CONSTANT", v);
00448     Py_INCREF(v);
00449     v = PyFloat_FromDouble(U_CONVENTIONAL_VALUE_OF_JOSEPHSON_CONSTANT);
00450     PyDict_SetItemString(d, "U_CONVENTIONAL_VALUE_OF_JOSEPHSON_CONSTANT", v);
00451     Py_INCREF(v);
00452
00453     v = PyFloat_FromDouble(CONVENTIONAL_VALUE_OF_OHM_90);
00454     PyDict_SetItemString(d, "CONVENTIONAL_VALUE_OF_OHM_90", v);
00455     Py_INCREF(v);
00456     v = PyFloat_FromDouble(U_CONVENTIONAL_VALUE_OF_OHM_90);
00457     PyDict_SetItemString(d, "U_CONVENTIONAL_VALUE_OF_OHM_90", v);
00458     Py_INCREF(v);
00459
00460     v = PyFloat_FromDouble(CONVENTIONAL_VALUE_OF_VOLT_90);
00461     PyDict_SetItemString(d, "CONVENTIONAL_VALUE_OF_VOLT_90", v);
00462     Py_INCREF(v);
00463     v = PyFloat_FromDouble(U_CONVENTIONAL_VALUE_OF_VOLT_90);
00464     PyDict_SetItemString(d, "U_CONVENTIONAL_VALUE_OF_VOLT_90", v);
00465     Py_INCREF(v);
00466
00467     v = PyFloat_FromDouble(CONVENTIONAL_VALUE_OF_VON_KLITZING_CONSTANT);
00468     PyDict_SetItemString(d, "CONVENTIONAL_VALUE_OF_VON_KLITZING_CONSTANT", v);
00469     Py_INCREF(v);
00470     v = PyFloat_FromDouble(U_CONVENTIONAL_VALUE_OF_VON_KLITZING_CONSTANT);
00471     PyDict_SetItemString(d, "U_CONVENTIONAL_VALUE_OF_VON_KLITZING_CONSTANT", v);
00472     Py_INCREF(v);
00473
00474     v = PyFloat_FromDouble(CONVENTIONAL_VALUE_OF_WATT_90);
00475     PyDict_SetItemString(d, "CONVENTIONAL_VALUE_OF_WATT_90", v);
00476     Py_INCREF(v);
00477     v = PyFloat_FromDouble(U_CONVENTIONAL_VALUE_OF_WATT_90);
00478     PyDict_SetItemString(d, "U_CONVENTIONAL_VALUE_OF_WATT_90", v);
00479     Py_INCREF(v);
00480
00481     v = PyFloat_FromDouble(COPPER_X_UNIT);
00482     PyDict_SetItemString(d, "COPPER_X_UNIT", v);
00483     Py_INCREF(v);
00484     v = PyFloat_FromDouble(U_COPPER_X_UNIT);
00485     PyDict_SetItemString(d, "U_COPPER_X_UNIT", v);
00486     Py_INCREF(v);
00487
00488     v = PyFloat_FromDouble(DEUTERON_ELECTRON_MAG_MOM_RATIO);
00489     PyDict_SetItemString(d, "DEUTERON_ELECTRON_MAG_MOM_RATIO", v);
00490     Py_INCREF(v);
00491     v = PyFloat_FromDouble(U_DEUTERON_ELECTRON_MAG_MOM_RATIO);
00492     PyDict_SetItemString(d, "U_DEUTERON_ELECTRON_MAG_MOM_RATIO", v);
00493     Py_INCREF(v);
00494
00495     v = PyFloat_FromDouble(DEUTERON_ELECTRON_MASS_RATIO);
00496     PyDict_SetItemString(d, "DEUTERON_ELECTRON_MASS_RATIO", v);
00497     Py_INCREF(v);
00498     v = PyFloat_FromDouble(U_DEUTERON_ELECTRON_MASS_RATIO);
00499     PyDict_SetItemString(d, "U_DEUTERON_ELECTRON_MASS_RATIO", v);
00500     Py_INCREF(v);
00501
00502     v = PyFloat_FromDouble(DEUTERON_G_FACTOR);
00503     PyDict_SetItemString(d, "DEUTERON_G_FACTOR", v);
00504     Py_INCREF(v);
00505     v = PyFloat_FromDouble(U_DEUTERON_G_FACTOR);
00506     PyDict_SetItemString(d, "U_DEUTERON_G_FACTOR", v);
00507     Py_INCREF(v);
00508
00509     v = PyFloat_FromDouble(DEUTERON_MAG_MOM);
00510     PyDict_SetItemString(d, "DEUTERON_MAG_MOM", v);
00511     Py_INCREF(v);
00512     v = PyFloat_FromDouble(U_DEUTERON_MAG_MOM);
00513     PyDict_SetItemString(d, "U_DEUTERON_MAG_MOM", v);
00514     Py_INCREF(v);
00515
00516     v = PyFloat_FromDouble(DEUTERON_MAG_MOM_TO_BOHR_MAGNETON_RATIO);
00517     PyDict_SetItemString(d, "DEUTERON_MAG_MOM_TO_BOHR_MAGNETON_RATIO", v);
```



```
00518     Py_INCREF(v);
00519     v = PyFloat_FromDouble(U_DEUTERON_MAG__MOM__TO_BOHR_MAGNETON_RATIO);
00520     PyDict_SetItemString(d, "U_DEUTERON_MAG__MOM__TO_BOHR_MAGNETON_RATIO", v);
00521     Py_INCREF(v);
00522
00523     v = PyFloat_FromDouble(DEUTERON_MAG__MOM__TO_NUCLEAR_MAGNETON_RATIO);
00524     PyDict_SetItemString(d, "DEUTERON_MAG__MOM__TO_NUCLEAR_MAGNETON_RATIO", v);
00525     Py_INCREF(v);
00526     v = PyFloat_FromDouble(U_DEUTERON_MAG__MOM__TO_NUCLEAR_MAGNETON_RATIO);
00527     PyDict_SetItemString(d, "U_DEUTERON_MAG__MOM__TO_NUCLEAR_MAGNETON_RATIO", v);
00528     Py_INCREF(v);
00529
00530     v = PyFloat_FromDouble(DEUTERON_MASS);
00531     PyDict_SetItemString(d, "DEUTERON_MASS", v);
00532     Py_INCREF(v);
00533     v = PyFloat_FromDouble(U_DEUTERON_MASS);
00534     PyDict_SetItemString(d, "U_DEUTERON_MASS", v);
00535     Py_INCREF(v);
00536
00537     v = PyFloat_FromDouble(DEUTERON_MASS_ENERGY_EQUIVALENT);
00538     PyDict_SetItemString(d, "DEUTERON_MASS_ENERGY_EQUIVALENT", v);
00539     Py_INCREF(v);
00540     v = PyFloat_FromDouble(U_DEUTERON_MASS_ENERGY_EQUIVALENT);
00541     PyDict_SetItemString(d, "U_DEUTERON_MASS_ENERGY_EQUIVALENT", v);
00542     Py_INCREF(v);
00543
00544     v = PyFloat_FromDouble(DEUTERON_MASS_ENERGY_EQUIVALENT_IN_MEV);
00545     PyDict_SetItemString(d, "DEUTERON_MASS_ENERGY_EQUIVALENT_IN_MEV", v);
00546     Py_INCREF(v);
00547     v = PyFloat_FromDouble(U_DEUTERON_MASS_ENERGY_EQUIVALENT_IN_MEV);
00548     PyDict_SetItemString(d, "U_DEUTERON_MASS_ENERGY_EQUIVALENT_IN_MEV", v);
00549     Py_INCREF(v);
00550
00551     v = PyFloat_FromDouble(DEUTERON_MASS_IN_U);
00552     PyDict_SetItemString(d, "DEUTERON_MASS_IN_U", v);
00553     Py_INCREF(v);
00554     v = PyFloat_FromDouble(U_DEUTERON_MASS_IN_U);
00555     PyDict_SetItemString(d, "U_DEUTERON_MASS_IN_U", v);
00556     Py_INCREF(v);
00557
00558     v = PyFloat_FromDouble(DEUTERON_MOLAR_MASS);
00559     PyDict_SetItemString(d, "DEUTERON_MOLAR_MASS", v);
00560     Py_INCREF(v);
00561     v = PyFloat_FromDouble(U_DEUTERON_MOLAR_MASS);
00562     PyDict_SetItemString(d, "U_DEUTERON_MOLAR_MASS", v);
00563     Py_INCREF(v);
00564
00565     v = PyFloat_FromDouble(DEUTERON_NEUTRON_MAG__MOM__RATIO);
00566     PyDict_SetItemString(d, "DEUTERON_NEUTRON_MAG__MOM__RATIO", v);
00567     Py_INCREF(v);
00568     v = PyFloat_FromDouble(U_DEUTERON_NEUTRON_MAG__MOM__RATIO);
00569     PyDict_SetItemString(d, "U_DEUTERON_NEUTRON_MAG__MOM__RATIO", v);
00570     Py_INCREF(v);
00571
00572     v = PyFloat_FromDouble(DEUTERON_PROTON_MAG__MOM__RATIO);
00573     PyDict_SetItemString(d, "DEUTERON_PROTON_MAG__MOM__RATIO", v);
00574     Py_INCREF(v);
00575     v = PyFloat_FromDouble(U_DEUTERON_PROTON_MAG__MOM__RATIO);
00576     PyDict_SetItemString(d, "U_DEUTERON_PROTON_MAG__MOM__RATIO", v);
00577     Py_INCREF(v);
00578
00579     v = PyFloat_FromDouble(DEUTERON_PROTON_MASS_RATIO);
00580     PyDict_SetItemString(d, "DEUTERON_PROTON_MASS_RATIO", v);
00581     Py_INCREF(v);
00582     v = PyFloat_FromDouble(U_DEUTERON_PROTON_MASS_RATIO);
00583     PyDict_SetItemString(d, "U_DEUTERON_PROTON_MASS_RATIO", v);
00584     Py_INCREF(v);
00585
00586     v = PyFloat_FromDouble(DEUTERON_RELATIVE_ATOMIC_MASS);
00587     PyDict_SetItemString(d, "DEUTERON_RELATIVE_ATOMIC_MASS", v);
00588     Py_INCREF(v);
00589     v = PyFloat_FromDouble(U_DEUTERON_RELATIVE_ATOMIC_MASS);
00590     PyDict_SetItemString(d, "U_DEUTERON_RELATIVE_ATOMIC_MASS", v);
00591     Py_INCREF(v);
00592
00593     v = PyFloat_FromDouble(DEUTERON_RMS_CHARGE_RADIUS);
00594     PyDict_SetItemString(d, "DEUTERON_RMS_CHARGE_RADIUS", v);
00595     Py_INCREF(v);
00596     v = PyFloat_FromDouble(U_DEUTERON_RMS_CHARGE_RADIUS);
00597     PyDict_SetItemString(d, "U_DEUTERON_RMS_CHARGE_RADIUS", v);
00598     Py_INCREF(v);
00599
00600     v = PyFloat_FromDouble(ELECTRON_CHARGE_TO_MASS_QUOTIENT);
00601     PyDict_SetItemString(d, "ELECTRON_CHARGE_TO_MASS_QUOTIENT", v);
00602     Py_INCREF(v);
00603     v = PyFloat_FromDouble(U_ELECTRON_CHARGE_TO_MASS_QUOTIENT);
00604     PyDict_SetItemString(d, "U_ELECTRON_CHARGE_TO_MASS_QUOTIENT", v);
```



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00605     Py_INCREF(v);
00606
00607     v = PyFloat_FromDouble(ELECTRON_DEUTERON_MAG__MOM__RATIO);
00608     PyDict_SetItemString(d, "ELECTRON_DEUTERON_MAG__MOM__RATIO", v);
00609     Py_INCREF(v);
00610     v = PyFloat_FromDouble(U_ELECTRON_DEUTERON_MAG__MOM__RATIO);
00611     PyDict_SetItemString(d, "U_ELECTRON_DEUTERON_MAG__MOM__RATIO", v);
00612     Py_INCREF(v);
00613
00614     v = PyFloat_FromDouble(ELECTRON_DEUTERON_MASS_RATIO);
00615     PyDict_SetItemString(d, "ELECTRON_DEUTERON_MASS_RATIO", v);
00616     Py_INCREF(v);
00617     v = PyFloat_FromDouble(U_ELECTRON_DEUTERON_MASS_RATIO);
00618     PyDict_SetItemString(d, "U_ELECTRON_DEUTERON_MASS_RATIO", v);
00619     Py_INCREF(v);
00620
00621     v = PyFloat_FromDouble(ELECTRON_G_FACTOR);
00622     PyDict_SetItemString(d, "ELECTRON_G_FACTOR", v);
00623     Py_INCREF(v);
00624     v = PyFloat_FromDouble(U_ELECTRON_G_FACTOR);
00625     PyDict_SetItemString(d, "U_ELECTRON_G_FACTOR", v);
00626     Py_INCREF(v);
00627
00628     v = PyFloat_FromDouble(ELECTRON_GYROMAG__RATIO);
00629     PyDict_SetItemString(d, "ELECTRON_GYROMAG__RATIO", v);
00630     Py_INCREF(v);
00631     v = PyFloat_FromDouble(U_ELECTRON_GYROMAG__RATIO);
00632     PyDict_SetItemString(d, "U_ELECTRON_GYROMAG__RATIO", v);
00633     Py_INCREF(v);
00634
00635     v = PyFloat_FromDouble(ELECTRON_GYROMAG__RATIO_IN_MHZ_T);
00636     PyDict_SetItemString(d, "ELECTRON_GYROMAG__RATIO_IN_MHZ_T", v);
00637     Py_INCREF(v);
00638     v = PyFloat_FromDouble(U_ELECTRON_GYROMAG__RATIO_IN_MHZ_T);
00639     PyDict_SetItemString(d, "U_ELECTRON_GYROMAG__RATIO_IN_MHZ_T", v);
00640     Py_INCREF(v);
00641
00642     v = PyFloat_FromDouble(ELECTRON_HELION_MASS_RATIO);
00643     PyDict_SetItemString(d, "ELECTRON_HELION_MASS_RATIO", v);
00644     Py_INCREF(v);
00645     v = PyFloat_FromDouble(U_ELECTRON_HELION_MASS_RATIO);
00646     PyDict_SetItemString(d, "U_ELECTRON_HELION_MASS_RATIO", v);
00647     Py_INCREF(v);
00648
00649     v = PyFloat_FromDouble(ELECTRON_MAG__MOM);
00650     PyDict_SetItemString(d, "ELECTRON_MAG__MOM", v);
00651     Py_INCREF(v);
00652     v = PyFloat_FromDouble(U_ELECTRON_MAG__MOM);
00653     PyDict_SetItemString(d, "U_ELECTRON_MAG__MOM", v);
00654     Py_INCREF(v);
00655
00656     v = PyFloat_FromDouble(ELECTRON_MAG__MOM__ANOMALY);
00657     PyDict_SetItemString(d, "ELECTRON_MAG__MOM__ANOMALY", v);
00658     Py_INCREF(v);
00659     v = PyFloat_FromDouble(U_ELECTRON_MAG__MOM__ANOMALY);
00660     PyDict_SetItemString(d, "U_ELECTRON_MAG__MOM__ANOMALY", v);
00661     Py_INCREF(v);
00662
00663     v = PyFloat_FromDouble(ELECTRON_MAG__MOM__TO_BOHR_MAGNETON_RATIO);
00664     PyDict_SetItemString(d, "ELECTRON_MAG__MOM__TO_BOHR_MAGNETON_RATIO", v);
00665     Py_INCREF(v);
00666     v = PyFloat_FromDouble(U_ELECTRON_MAG__MOM__TO_BOHR_MAGNETON_RATIO);
00667     PyDict_SetItemString(d, "U_ELECTRON_MAG__MOM__TO_BOHR_MAGNETON_RATIO", v);
00668     Py_INCREF(v);
00669
00670     v = PyFloat_FromDouble(ELECTRON_MAG__MOM__TO_NUCLEAR_MAGNETON_RATIO);
00671     PyDict_SetItemString(d, "ELECTRON_MAG__MOM__TO_NUCLEAR_MAGNETON_RATIO", v);
00672     Py_INCREF(v);
00673     v = PyFloat_FromDouble(U_ELECTRON_MAG__MOM__TO_NUCLEAR_MAGNETON_RATIO);
00674     PyDict_SetItemString(d, "U_ELECTRON_MAG__MOM__TO_NUCLEAR_MAGNETON_RATIO", v);
00675     Py_INCREF(v);
00676
00677     v = PyFloat_FromDouble(ELECTRON_MASS);
00678     PyDict_SetItemString(d, "ELECTRON_MASS", v);
00679     Py_INCREF(v);
00680     v = PyFloat_FromDouble(U_ELECTRON_MASS);
00681     PyDict_SetItemString(d, "U_ELECTRON_MASS", v);
00682     Py_INCREF(v);
00683
00684     v = PyFloat_FromDouble(ELECTRON_MASS_ENERGY_EQUIVALENT);
00685     PyDict_SetItemString(d, "ELECTRON_MASS_ENERGY_EQUIVALENT", v);
00686     Py_INCREF(v);
00687     v = PyFloat_FromDouble(U_ELECTRON_MASS_ENERGY_EQUIVALENT);
00688     PyDict_SetItemString(d, "U_ELECTRON_MASS_ENERGY_EQUIVALENT", v);
00689     Py_INCREF(v);
00690
00691     v = PyFloat_FromDouble(ELECTRON_MASS_ENERGY_EQUIVALENT_IN_MEV);
```

```
00692 PyDict_SetItemString(d, "ELECTRON_MASS_ENERGY_EQUIVALENT_IN_MEV", v);
00693 Py_INCREF(v);
00694 v = PyFloat_FromDouble(U_ELECTRON_MASS_ENERGY_EQUIVALENT_IN_MEV);
00695 PyDict_SetItemString(d, "U_ELECTRON_MASS_ENERGY_EQUIVALENT_IN_MEV", v);
00696 Py_INCREF(v);
00697
00698 v = PyFloat_FromDouble(ELECTRON_MASS_IN_U);
00699 PyDict_SetItemString(d, "ELECTRON_MASS_IN_U", v);
00700 Py_INCREF(v);
00701 v = PyFloat_FromDouble(U_ELECTRON_MASS_IN_U);
00702 PyDict_SetItemString(d, "U_ELECTRON_MASS_IN_U", v);
00703 Py_INCREF(v);
00704
00705 v = PyFloat_FromDouble(ELECTRON_MOLAR_MASS);
00706 PyDict_SetItemString(d, "ELECTRON_MOLAR_MASS", v);
00707 Py_INCREF(v);
00708 v = PyFloat_FromDouble(U_ELECTRON_MOLAR_MASS);
00709 PyDict_SetItemString(d, "U_ELECTRON_MOLAR_MASS", v);
00710 Py_INCREF(v);
00711
00712 v = PyFloat_FromDouble(ELECTRON_MUON_MAG_MOM_RATIO);
00713 PyDict_SetItemString(d, "ELECTRON_MUON_MAG_MOM_RATIO", v);
00714 Py_INCREF(v);
00715 v = PyFloat_FromDouble(U_ELECTRON_MUON_MAG_MOM_RATIO);
00716 PyDict_SetItemString(d, "U_ELECTRON_MUON_MAG_MOM_RATIO", v);
00717 Py_INCREF(v);
00718
00719 v = PyFloat_FromDouble(ELECTRON_MUON_MASS_RATIO);
00720 PyDict_SetItemString(d, "ELECTRON_MUON_MASS_RATIO", v);
00721 Py_INCREF(v);
00722 v = PyFloat_FromDouble(U_ELECTRON_MUON_MASS_RATIO);
00723 PyDict_SetItemString(d, "U_ELECTRON_MUON_MASS_RATIO", v);
00724 Py_INCREF(v);
00725
00726 v = PyFloat_FromDouble(ELECTRON_NEUTRON_MAG_MOM_RATIO);
00727 PyDict_SetItemString(d, "ELECTRON_NEUTRON_MAG_MOM_RATIO", v);
00728 Py_INCREF(v);
00729 v = PyFloat_FromDouble(U_ELECTRON_NEUTRON_MAG_MOM_RATIO);
00730 PyDict_SetItemString(d, "U_ELECTRON_NEUTRON_MAG_MOM_RATIO", v);
00731 Py_INCREF(v);
00732
00733 v = PyFloat_FromDouble(ELECTRON_NEUTRON_MASS_RATIO);
00734 PyDict_SetItemString(d, "ELECTRON_NEUTRON_MASS_RATIO", v);
00735 Py_INCREF(v);
00736 v = PyFloat_FromDouble(U_ELECTRON_NEUTRON_MASS_RATIO);
00737 PyDict_SetItemString(d, "U_ELECTRON_NEUTRON_MASS_RATIO", v);
00738 Py_INCREF(v);
00739
00740 v = PyFloat_FromDouble(ELECTRON_PROTON_MAG_MOM_RATIO);
00741 PyDict_SetItemString(d, "ELECTRON_PROTON_MAG_MOM_RATIO", v);
00742 Py_INCREF(v);
00743 v = PyFloat_FromDouble(U_ELECTRON_PROTON_MAG_MOM_RATIO);
00744 PyDict_SetItemString(d, "U_ELECTRON_PROTON_MAG_MOM_RATIO", v);
00745 Py_INCREF(v);
00746
00747 v = PyFloat_FromDouble(ELECTRON_PROTON_MASS_RATIO);
00748 PyDict_SetItemString(d, "ELECTRON_PROTON_MASS_RATIO", v);
00749 Py_INCREF(v);
00750 v = PyFloat_FromDouble(U_ELECTRON_PROTON_MASS_RATIO);
00751 PyDict_SetItemString(d, "U_ELECTRON_PROTON_MASS_RATIO", v);
00752 Py_INCREF(v);
00753
00754 v = PyFloat_FromDouble(ELECTRON_RELATIVE_ATOMIC_MASS);
00755 PyDict_SetItemString(d, "ELECTRON_RELATIVE_ATOMIC_MASS", v);
00756 Py_INCREF(v);
00757 v = PyFloat_FromDouble(U_ELECTRON_RELATIVE_ATOMIC_MASS);
00758 PyDict_SetItemString(d, "U_ELECTRON_RELATIVE_ATOMIC_MASS", v);
00759 Py_INCREF(v);
00760
00761 v = PyFloat_FromDouble(ELECTRON_TAU_MASS_RATIO);
00762 PyDict_SetItemString(d, "ELECTRON_TAU_MASS_RATIO", v);
00763 Py_INCREF(v);
00764 v = PyFloat_FromDouble(U_ELECTRON_TAU_MASS_RATIO);
00765 PyDict_SetItemString(d, "U_ELECTRON_TAU_MASS_RATIO", v);
00766 Py_INCREF(v);
00767
00768 v = PyFloat_FromDouble(ELECTRON_TO_ALPHA_PARTICLE_MASS_RATIO);
00769 PyDict_SetItemString(d, "ELECTRON_TO_ALPHA_PARTICLE_MASS_RATIO", v);
00770 Py_INCREF(v);
00771 v = PyFloat_FromDouble(U_ELECTRON_TO_ALPHA_PARTICLE_MASS_RATIO);
00772 PyDict_SetItemString(d, "U_ELECTRON_TO_ALPHA_PARTICLE_MASS_RATIO", v);
00773 Py_INCREF(v);
00774
00775 v = PyFloat_FromDouble(ELECTRON_TO_SHIELDED_HELION_MAG_MOM_RATIO);
00776 PyDict_SetItemString(d, "ELECTRON_TO_SHIELDED_HELION_MAG_MOM_RATIO", v);
00777 Py_INCREF(v);
00778 v = PyFloat_FromDouble(U_ELECTRON_TO_SHIELDED_HELION_MAG_MOM_RATIO);
```

```
00779     PyDict_SetItemString(d, "U_ELECTRON_TO_SHIELDED_HELION_MAG__MOM__RATIO", v);
00780     Py_INCREF(v);
00781
00782     v = PyFloat_FromDouble(ELECTRON_TO_SHIELDED_PROTON_MAG__MOM__RATIO);
00783     PyDict_SetItemString(d, "ELECTRON_TO_SHIELDED_PROTON_MAG__MOM__RATIO", v);
00784     Py_INCREF(v);
00785     v = PyFloat_FromDouble(U_ELECTRON_TO_SHIELDED_PROTON_MAG__MOM__RATIO);
00786     PyDict_SetItemString(d, "U_ELECTRON_TO_SHIELDED_PROTON_MAG__MOM__RATIO", v);
00787     Py_INCREF(v);
00788
00789     v = PyFloat_FromDouble(ELECTRON_TRITON_MASS_RATIO);
00790     PyDict_SetItemString(d, "ELECTRON_TRITON_MASS_RATIO", v);
00791     Py_INCREF(v);
00792     v = PyFloat_FromDouble(U_ELECTRON_TRITON_MASS_RATIO);
00793     PyDict_SetItemString(d, "U_ELECTRON_TRITON_MASS_RATIO", v);
00794     Py_INCREF(v);
00795
00796     v = PyFloat_FromDouble(ELECTRON_VOLT);
00797     PyDict_SetItemString(d, "ELECTRON_VOLT", v);
00798     Py_INCREF(v);
00799     v = PyFloat_FromDouble(U_ELECTRON_VOLT);
00800     PyDict_SetItemString(d, "U_ELECTRON_VOLT", v);
00801     Py_INCREF(v);
00802
00803     v = PyFloat_FromDouble(ELECTRON_VOLT_ATOMIC_MASS_UNIT_RELATIONSHIP);
00804     PyDict_SetItemString(d, "ELECTRON_VOLT_ATOMIC_MASS_UNIT_RELATIONSHIP", v);
00805     Py_INCREF(v);
00806     v = PyFloat_FromDouble(U_ELECTRON_VOLT_ATOMIC_MASS_UNIT_RELATIONSHIP);
00807     PyDict_SetItemString(d, "U_ELECTRON_VOLT_ATOMIC_MASS_UNIT_RELATIONSHIP", v);
00808     Py_INCREF(v);
00809
00810     v = PyFloat_FromDouble(ELECTRON_VOLT_HARTREE_RELATIONSHIP);
00811     PyDict_SetItemString(d, "ELECTRON_VOLT_HARTREE_RELATIONSHIP", v);
00812     Py_INCREF(v);
00813     v = PyFloat_FromDouble(U_ELECTRON_VOLT_HARTREE_RELATIONSHIP);
00814     PyDict_SetItemString(d, "U_ELECTRON_VOLT_HARTREE_RELATIONSHIP", v);
00815     Py_INCREF(v);
00816
00817     v = PyFloat_FromDouble(ELECTRON_VOLT_HERTZ_RELATIONSHIP);
00818     PyDict_SetItemString(d, "ELECTRON_VOLT_HERTZ_RELATIONSHIP", v);
00819     Py_INCREF(v);
00820     v = PyFloat_FromDouble(U_ELECTRON_VOLT_HERTZ_RELATIONSHIP);
00821     PyDict_SetItemString(d, "U_ELECTRON_VOLT_HERTZ_RELATIONSHIP", v);
00822     Py_INCREF(v);
00823
00824     v = PyFloat_FromDouble(ELECTRON_VOLT_INVERSE_METER_RELATIONSHIP);
00825     PyDict_SetItemString(d, "ELECTRON_VOLT_INVERSE_METER_RELATIONSHIP", v);
00826     Py_INCREF(v);
00827     v = PyFloat_FromDouble(U_ELECTRON_VOLT_INVERSE_METER_RELATIONSHIP);
00828     PyDict_SetItemString(d, "U_ELECTRON_VOLT_INVERSE_METER_RELATIONSHIP", v);
00829     Py_INCREF(v);
00830
00831     v = PyFloat_FromDouble(ELECTRON_VOLT_JOULE_RELATIONSHIP);
00832     PyDict_SetItemString(d, "ELECTRON_VOLT_JOULE_RELATIONSHIP", v);
00833     Py_INCREF(v);
00834     v = PyFloat_FromDouble(U_ELECTRON_VOLT_JOULE_RELATIONSHIP);
00835     PyDict_SetItemString(d, "U_ELECTRON_VOLT_JOULE_RELATIONSHIP", v);
00836     Py_INCREF(v);
00837
00838     v = PyFloat_FromDouble(ELECTRON_VOLT_KELVIN_RELATIONSHIP);
00839     PyDict_SetItemString(d, "ELECTRON_VOLT_KELVIN_RELATIONSHIP", v);
00840     Py_INCREF(v);
00841     v = PyFloat_FromDouble(U_ELECTRON_VOLT_KELVIN_RELATIONSHIP);
00842     PyDict_SetItemString(d, "U_ELECTRON_VOLT_KELVIN_RELATIONSHIP", v);
00843     Py_INCREF(v);
00844
00845     v = PyFloat_FromDouble(ELECTRON_VOLT_KILOGRAM_RELATIONSHIP);
00846     PyDict_SetItemString(d, "ELECTRON_VOLT_KILOGRAM_RELATIONSHIP", v);
00847     Py_INCREF(v);
00848     v = PyFloat_FromDouble(U_ELECTRON_VOLT_KILOGRAM_RELATIONSHIP);
00849     PyDict_SetItemString(d, "U_ELECTRON_VOLT_KILOGRAM_RELATIONSHIP", v);
00850     Py_INCREF(v);
00851
00852     v = PyFloat_FromDouble(ELEMENTARY_CHARGE);
00853     PyDict_SetItemString(d, "ELEMENTARY_CHARGE", v);
00854     Py_INCREF(v);
00855     v = PyFloat_FromDouble(U_ELEMENTARY_CHARGE);
00856     PyDict_SetItemString(d, "U_ELEMENTARY_CHARGE", v);
00857     Py_INCREF(v);
00858
00859     v = PyFloat_FromDouble(ELEMENTARY_CHARGE_OVER_H_BAR);
00860     PyDict_SetItemString(d, "ELEMENTARY_CHARGE_OVER_H_BAR", v);
00861     Py_INCREF(v);
00862     v = PyFloat_FromDouble(U_ELEMENTARY_CHARGE_OVER_H_BAR);
00863     PyDict_SetItemString(d, "U_ELEMENTARY_CHARGE_OVER_H_BAR", v);
00864     Py_INCREF(v);
00865
```

```
00866     v = PyFloat_FromDouble(FARADAY_CONSTANT);
00867     PyDict_SetItemString(d, "FARADAY_CONSTANT", v);
00868     Py_INCREF(v);
00869     v = PyFloat_FromDouble(U_FARADAY_CONSTANT);
00870     PyDict_SetItemString(d, "U_FARADAY_CONSTANT", v);
00871     Py_INCREF(v);
00872
00873     v = PyFloat_FromDouble(FERMI_COUPLING_CONSTANT);
00874     PyDict_SetItemString(d, "FERMI_COUPLING_CONSTANT", v);
00875     Py_INCREF(v);
00876     v = PyFloat_FromDouble(U_FERMI_COUPLING_CONSTANT);
00877     PyDict_SetItemString(d, "U_FERMI_COUPLING_CONSTANT", v);
00878     Py_INCREF(v);
00879
00880     v = PyFloat_FromDouble(FINE_STRUCTURE_CONSTANT);
00881     PyDict_SetItemString(d, "FINE_STRUCTURE_CONSTANT", v);
00882     Py_INCREF(v);
00883     v = PyFloat_FromDouble(U_FINE_STRUCTURE_CONSTANT);
00884     PyDict_SetItemString(d, "U_FINE_STRUCTURE_CONSTANT", v);
00885     Py_INCREF(v);
00886
00887     v = PyFloat_FromDouble(FIRST_RADIATION_CONSTANT);
00888     PyDict_SetItemString(d, "FIRST_RADIATION_CONSTANT", v);
00889     Py_INCREF(v);
00890     v = PyFloat_FromDouble(U_FIRST_RADIATION_CONSTANT);
00891     PyDict_SetItemString(d, "U_FIRST_RADIATION_CONSTANT", v);
00892     Py_INCREF(v);
00893
00894     v = PyFloat_FromDouble(FIRST_RADIATION_CONSTANT_FOR_SPECTRAL_RADIANCE);
00895     PyDict_SetItemString(d, "FIRST_RADIATION_CONSTANT_FOR_SPECTRAL_RADIANCE", v);
00896     Py_INCREF(v);
00897     v = PyFloat_FromDouble(U_FIRST_RADIATION_CONSTANT_FOR_SPECTRAL_RADIANCE);
00898     PyDict_SetItemString(d, "U_FIRST_RADIATION_CONSTANT_FOR_SPECTRAL_RADIANCE", v);
00899     Py_INCREF(v);
00900
00901     v = PyFloat_FromDouble(HARTREE_ATOMIC_MASS_UNIT_RELATIONSHIP);
00902     PyDict_SetItemString(d, "HARTREE_ATOMIC_MASS_UNIT_RELATIONSHIP", v);
00903     Py_INCREF(v);
00904     v = PyFloat_FromDouble(U_HARTREE_ATOMIC_MASS_UNIT_RELATIONSHIP);
00905     PyDict_SetItemString(d, "U_HARTREE_ATOMIC_MASS_UNIT_RELATIONSHIP", v);
00906     Py_INCREF(v);
00907
00908     v = PyFloat_FromDouble(HARTREE_ELECTRON_VOLT_RELATIONSHIP);
00909     PyDict_SetItemString(d, "HARTREE_ELECTRON_VOLT_RELATIONSHIP", v);
00910     Py_INCREF(v);
00911     v = PyFloat_FromDouble(U_HARTREE_ELECTRON_VOLT_RELATIONSHIP);
00912     PyDict_SetItemString(d, "U_HARTREE_ELECTRON_VOLT_RELATIONSHIP", v);
00913     Py_INCREF(v);
00914
00915     v = PyFloat_FromDouble(HARTREE_ENERGY);
00916     PyDict_SetItemString(d, "HARTREE_ENERGY", v);
00917     Py_INCREF(v);
00918     v = PyFloat_FromDouble(U_HARTREE_ENERGY);
00919     PyDict_SetItemString(d, "U_HARTREE_ENERGY", v);
00920     Py_INCREF(v);
00921
00922     v = PyFloat_FromDouble(HARTREE_ENERGY_IN_EV);
00923     PyDict_SetItemString(d, "HARTREE_ENERGY_IN_EV", v);
00924     Py_INCREF(v);
00925     v = PyFloat_FromDouble(U_HARTREE_ENERGY_IN_EV);
00926     PyDict_SetItemString(d, "U_HARTREE_ENERGY_IN_EV", v);
00927     Py_INCREF(v);
00928
00929     v = PyFloat_FromDouble(HARTREE_HERTZ_RELATIONSHIP);
00930     PyDict_SetItemString(d, "HARTREE_HERTZ_RELATIONSHIP", v);
00931     Py_INCREF(v);
00932     v = PyFloat_FromDouble(U_HARTREE_HERTZ_RELATIONSHIP);
00933     PyDict_SetItemString(d, "U_HARTREE_HERTZ_RELATIONSHIP", v);
00934     Py_INCREF(v);
00935
00936     v = PyFloat_FromDouble(HARTREE_INVERSE_METER_RELATIONSHIP);
00937     PyDict_SetItemString(d, "HARTREE_INVERSE_METER_RELATIONSHIP", v);
00938     Py_INCREF(v);
00939     v = PyFloat_FromDouble(U_HARTREE_INVERSE_METER_RELATIONSHIP);
00940     PyDict_SetItemString(d, "U_HARTREE_INVERSE_METER_RELATIONSHIP", v);
00941     Py_INCREF(v);
00942
00943     v = PyFloat_FromDouble(HARTREE_JOULE_RELATIONSHIP);
00944     PyDict_SetItemString(d, "HARTREE_JOULE_RELATIONSHIP", v);
00945     Py_INCREF(v);
00946     v = PyFloat_FromDouble(U_HARTREE_JOULE_RELATIONSHIP);
00947     PyDict_SetItemString(d, "U_HARTREE_JOULE_RELATIONSHIP", v);
00948     Py_INCREF(v);
00949
00950     v = PyFloat_FromDouble(HARTREE_KELVIN_RELATIONSHIP);
00951     PyDict_SetItemString(d, "HARTREE_KELVIN_RELATIONSHIP", v);
00952     Py_INCREF(v);
```

```
00953     v = PyFloat_FromDouble(U_HARTREE_KELVIN_RELATIONSHIP);
00954     PyDict_SetItemString(d, "U_HARTREE_KELVIN_RELATIONSHIP", v);
00955     Py_INCREF(v);
00956
00957     v = PyFloat_FromDouble(HARTREE_KILOGRAM_RELATIONSHIP);
00958     PyDict_SetItemString(d, "HARTREE_KILOGRAM_RELATIONSHIP", v);
00959     Py_INCREF(v);
00960     v = PyFloat_FromDouble(U_HARTREE_KILOGRAM_RELATIONSHIP);
00961     PyDict_SetItemString(d, "U_HARTREE_KILOGRAM_RELATIONSHIP", v);
00962     Py_INCREF(v);
00963
00964     v = PyFloat_FromDouble(HELION_ELECTRON_MASS_RATIO);
00965     PyDict_SetItemString(d, "HELION_ELECTRON_MASS_RATIO", v);
00966     Py_INCREF(v);
00967     v = PyFloat_FromDouble(U_HELION_ELECTRON_MASS_RATIO);
00968     PyDict_SetItemString(d, "U_HELION_ELECTRON_MASS_RATIO", v);
00969     Py_INCREF(v);
00970
00971     v = PyFloat_FromDouble(HELION_G_FACTOR);
00972     PyDict_SetItemString(d, "HELION_G_FACTOR", v);
00973     Py_INCREF(v);
00974     v = PyFloat_FromDouble(U_HELION_G_FACTOR);
00975     PyDict_SetItemString(d, "U_HELION_G_FACTOR", v);
00976     Py_INCREF(v);
00977
00978     v = PyFloat_FromDouble(HELION_MAG__MOM);
00979     PyDict_SetItemString(d, "HELION_MAG__MOM", v);
00980     Py_INCREF(v);
00981     v = PyFloat_FromDouble(U_HELION_MAG__MOM);
00982     PyDict_SetItemString(d, "U_HELION_MAG__MOM", v);
00983     Py_INCREF(v);
00984
00985     v = PyFloat_FromDouble(HELION_MAG__MOM__TO_BOHR_MAGNETON_RATIO);
00986     PyDict_SetItemString(d, "HELION_MAG__MOM__TO_BOHR_MAGNETON_RATIO", v);
00987     Py_INCREF(v);
00988     v = PyFloat_FromDouble(U_HELION_MAG__MOM__TO_BOHR_MAGNETON_RATIO);
00989     PyDict_SetItemString(d, "U_HELION_MAG__MOM__TO_BOHR_MAGNETON_RATIO", v);
00990     Py_INCREF(v);
00991
00992     v = PyFloat_FromDouble(HELION_MAG__MOM__TO_NUCLEAR_MAGNETON_RATIO);
00993     PyDict_SetItemString(d, "HELION_MAG__MOM__TO_NUCLEAR_MAGNETON_RATIO", v);
00994     Py_INCREF(v);
00995     v = PyFloat_FromDouble(U_HELION_MAG__MOM__TO_NUCLEAR_MAGNETON_RATIO);
00996     PyDict_SetItemString(d, "U_HELION_MAG__MOM__TO_NUCLEAR_MAGNETON_RATIO", v);
00997     Py_INCREF(v);
00998
00999     v = PyFloat_FromDouble(HELION_MASS);
01000     PyDict_SetItemString(d, "HELION_MASS", v);
01001     Py_INCREF(v);
01002     v = PyFloat_FromDouble(U_HELION_MASS);
01003     PyDict_SetItemString(d, "U_HELION_MASS", v);
01004     Py_INCREF(v);
01005
01006     v = PyFloat_FromDouble(HELION_MASS_ENERGY_EQUIVALENT);
01007     PyDict_SetItemString(d, "HELION_MASS_ENERGY_EQUIVALENT", v);
01008     Py_INCREF(v);
01009     v = PyFloat_FromDouble(U_HELION_MASS_ENERGY_EQUIVALENT);
01010     PyDict_SetItemString(d, "U_HELION_MASS_ENERGY_EQUIVALENT", v);
01011     Py_INCREF(v);
01012
01013     v = PyFloat_FromDouble(HELION_MASS_ENERGY_EQUIVALENT_IN_MEV);
01014     PyDict_SetItemString(d, "HELION_MASS_ENERGY_EQUIVALENT_IN_MEV", v);
01015     Py_INCREF(v);
01016     v = PyFloat_FromDouble(U_HELION_MASS_ENERGY_EQUIVALENT_IN_MEV);
01017     PyDict_SetItemString(d, "U_HELION_MASS_ENERGY_EQUIVALENT_IN_MEV", v);
01018     Py_INCREF(v);
01019
01020     v = PyFloat_FromDouble(HELION_MASS_IN_U);
01021     PyDict_SetItemString(d, "HELION_MASS_IN_U", v);
01022     Py_INCREF(v);
01023     v = PyFloat_FromDouble(U_HELION_MASS_IN_U);
01024     PyDict_SetItemString(d, "U_HELION_MASS_IN_U", v);
01025     Py_INCREF(v);
01026
01027     v = PyFloat_FromDouble(HELION_MOLAR_MASS);
01028     PyDict_SetItemString(d, "HELION_MOLAR_MASS", v);
01029     Py_INCREF(v);
01030     v = PyFloat_FromDouble(U_HELION_MOLAR_MASS);
01031     PyDict_SetItemString(d, "U_HELION_MOLAR_MASS", v);
01032     Py_INCREF(v);
01033
01034     v = PyFloat_FromDouble(HELION_PROTON_MASS_RATIO);
01035     PyDict_SetItemString(d, "HELION_PROTON_MASS_RATIO", v);
01036     Py_INCREF(v);
01037     v = PyFloat_FromDouble(U_HELION_PROTON_MASS_RATIO);
01038     PyDict_SetItemString(d, "U_HELION_PROTON_MASS_RATIO", v);
01039     Py_INCREF(v);
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01040
01041     v = PyFloat_FromDouble(HELION_RELATIVE_ATOMIC_MASS);
01042     PyDict_SetItemString(d, "HELION_RELATIVE_ATOMIC_MASS", v);
01043     Py_INCREF(v);
01044     v = PyFloat_FromDouble(U_HELION_RELATIVE_ATOMIC_MASS);
01045     PyDict_SetItemString(d, "U_HELION_RELATIVE_ATOMIC_MASS", v);
01046     Py_INCREF(v);
01047
01048     v = PyFloat_FromDouble(HELION_SHIELDING_SHIFT);
01049     PyDict_SetItemString(d, "HELION_SHIELDING_SHIFT", v);
01050     Py_INCREF(v);
01051     v = PyFloat_FromDouble(U_HELION_SHIELDING_SHIFT);
01052     PyDict_SetItemString(d, "U_HELION_SHIELDING_SHIFT", v);
01053     Py_INCREF(v);
01054
01055     v = PyFloat_FromDouble(HERTZ_ATOMIC_MASS_UNIT_RELATIONSHIP);
01056     PyDict_SetItemString(d, "HERTZ_ATOMIC_MASS_UNIT_RELATIONSHIP", v);
01057     Py_INCREF(v);
01058     v = PyFloat_FromDouble(U_HERTZ_ATOMIC_MASS_UNIT_RELATIONSHIP);
01059     PyDict_SetItemString(d, "U_HERTZ_ATOMIC_MASS_UNIT_RELATIONSHIP", v);
01060     Py_INCREF(v);
01061
01062     v = PyFloat_FromDouble(HERTZ_ELECTRON_VOLT_RELATIONSHIP);
01063     PyDict_SetItemString(d, "HERTZ_ELECTRON_VOLT_RELATIONSHIP", v);
01064     Py_INCREF(v);
01065     v = PyFloat_FromDouble(U_HERTZ_ELECTRON_VOLT_RELATIONSHIP);
01066     PyDict_SetItemString(d, "U_HERTZ_ELECTRON_VOLT_RELATIONSHIP", v);
01067     Py_INCREF(v);
01068
01069     v = PyFloat_FromDouble(HERTZ_HARTREE_RELATIONSHIP);
01070     PyDict_SetItemString(d, "HERTZ_HARTREE_RELATIONSHIP", v);
01071     Py_INCREF(v);
01072     v = PyFloat_FromDouble(U_HERTZ_HARTREE_RELATIONSHIP);
01073     PyDict_SetItemString(d, "U_HERTZ_HARTREE_RELATIONSHIP", v);
01074     Py_INCREF(v);
01075
01076     v = PyFloat_FromDouble(HERTZ_INVERSE_METER_RELATIONSHIP);
01077     PyDict_SetItemString(d, "HERTZ_INVERSE_METER_RELATIONSHIP", v);
01078     Py_INCREF(v);
01079     v = PyFloat_FromDouble(U_HERTZ_INVERSE_METER_RELATIONSHIP);
01080     PyDict_SetItemString(d, "U_HERTZ_INVERSE_METER_RELATIONSHIP", v);
01081     Py_INCREF(v);
01082
01083     v = PyFloat_FromDouble(HERTZ_JOULE_RELATIONSHIP);
01084     PyDict_SetItemString(d, "HERTZ_JOULE_RELATIONSHIP", v);
01085     Py_INCREF(v);
01086     v = PyFloat_FromDouble(U_HERTZ_JOULE_RELATIONSHIP);
01087     PyDict_SetItemString(d, "U_HERTZ_JOULE_RELATIONSHIP", v);
01088     Py_INCREF(v);
01089
01090     v = PyFloat_FromDouble(HERTZ_KELVIN_RELATIONSHIP);
01091     PyDict_SetItemString(d, "HERTZ_KELVIN_RELATIONSHIP", v);
01092     Py_INCREF(v);
01093     v = PyFloat_FromDouble(U_HERTZ_KELVIN_RELATIONSHIP);
01094     PyDict_SetItemString(d, "U_HERTZ_KELVIN_RELATIONSHIP", v);
01095     Py_INCREF(v);
01096
01097     v = PyFloat_FromDouble(HERTZ_KILOGRAM_RELATIONSHIP);
01098     PyDict_SetItemString(d, "HERTZ_KILOGRAM_RELATIONSHIP", v);
01099     Py_INCREF(v);
01100     v = PyFloat_FromDouble(U_HERTZ_KILOGRAM_RELATIONSHIP);
01101     PyDict_SetItemString(d, "U_HERTZ_KILOGRAM_RELATIONSHIP", v);
01102     Py_INCREF(v);
01103
01104     v = PyFloat_FromDouble(HYPERFINE_TRANSITION_FREQUENCY_OF_CS_133);
01105     PyDict_SetItemString(d, "HYPERFINE_TRANSITION_FREQUENCY_OF_CS_133", v);
01106     Py_INCREF(v);
01107     v = PyFloat_FromDouble(U_HYPERFINE_TRANSITION_FREQUENCY_OF_CS_133);
01108     PyDict_SetItemString(d, "U_HYPERFINE_TRANSITION_FREQUENCY_OF_CS_133", v);
01109     Py_INCREF(v);
01110
01111     v = PyFloat_FromDouble(INVERSE_FINE_STRUCTURE_CONSTANT);
01112     PyDict_SetItemString(d, "INVERSE_FINE_STRUCTURE_CONSTANT", v);
01113     Py_INCREF(v);
01114     v = PyFloat_FromDouble(U_INVERSE_FINE_STRUCTURE_CONSTANT);
01115     PyDict_SetItemString(d, "U_INVERSE_FINE_STRUCTURE_CONSTANT", v);
01116     Py_INCREF(v);
01117
01118     v = PyFloat_FromDouble(INVERSE_METER_ATOMIC_MASS_UNIT_RELATIONSHIP);
01119     PyDict_SetItemString(d, "INVERSE_METER_ATOMIC_MASS_UNIT_RELATIONSHIP", v);
01120     Py_INCREF(v);
01121     v = PyFloat_FromDouble(U_INVERSE_METER_ATOMIC_MASS_UNIT_RELATIONSHIP);
01122     PyDict_SetItemString(d, "U_INVERSE_METER_ATOMIC_MASS_UNIT_RELATIONSHIP", v);
01123     Py_INCREF(v);
01124
01125     v = PyFloat_FromDouble(INVERSE_METER_ELECTRON_VOLT_RELATIONSHIP);
01126     PyDict_SetItemString(d, "INVERSE_METER_ELECTRON_VOLT_RELATIONSHIP", v);

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01127     Py_INCREF(v);
01128     v = PyFloat_FromDouble(U_INVERSE_METER_ELECTRON_VOLT_RELATIONSHIP);
01129     PyDict_SetItemString(d, "U_INVERSE_METER_ELECTRON_VOLT_RELATIONSHIP", v);
01130     Py_INCREF(v);
01131
01132     v = PyFloat_FromDouble(INVERSE_METER_HARTREE_RELATIONSHIP);
01133     PyDict_SetItemString(d, "INVERSE_METER_HARTREE_RELATIONSHIP", v);
01134     Py_INCREF(v);
01135     v = PyFloat_FromDouble(U_INVERSE_METER_HARTREE_RELATIONSHIP);
01136     PyDict_SetItemString(d, "U_INVERSE_METER_HARTREE_RELATIONSHIP", v);
01137     Py_INCREF(v);
01138
01139     v = PyFloat_FromDouble(INVERSE_METER_HERTZ_RELATIONSHIP);
01140     PyDict_SetItemString(d, "INVERSE_METER_HERTZ_RELATIONSHIP", v);
01141     Py_INCREF(v);
01142     v = PyFloat_FromDouble(U_INVERSE_METER_HERTZ_RELATIONSHIP);
01143     PyDict_SetItemString(d, "U_INVERSE_METER_HERTZ_RELATIONSHIP", v);
01144     Py_INCREF(v);
01145
01146     v = PyFloat_FromDouble(INVERSE_METER_JOULE_RELATIONSHIP);
01147     PyDict_SetItemString(d, "INVERSE_METER_JOULE_RELATIONSHIP", v);
01148     Py_INCREF(v);
01149     v = PyFloat_FromDouble(U_INVERSE_METER_JOULE_RELATIONSHIP);
01150     PyDict_SetItemString(d, "U_INVERSE_METER_JOULE_RELATIONSHIP", v);
01151     Py_INCREF(v);
01152
01153     v = PyFloat_FromDouble(INVERSE_METER_KELVIN_RELATIONSHIP);
01154     PyDict_SetItemString(d, "INVERSE_METER_KELVIN_RELATIONSHIP", v);
01155     Py_INCREF(v);
01156     v = PyFloat_FromDouble(U_INVERSE_METER_KELVIN_RELATIONSHIP);
01157     PyDict_SetItemString(d, "U_INVERSE_METER_KELVIN_RELATIONSHIP", v);
01158     Py_INCREF(v);
01159
01160     v = PyFloat_FromDouble(INVERSE_METER_KILOGRAM_RELATIONSHIP);
01161     PyDict_SetItemString(d, "INVERSE_METER_KILOGRAM_RELATIONSHIP", v);
01162     Py_INCREF(v);
01163     v = PyFloat_FromDouble(U_INVERSE_METER_KILOGRAM_RELATIONSHIP);
01164     PyDict_SetItemString(d, "U_INVERSE_METER_KILOGRAM_RELATIONSHIP", v);
01165     Py_INCREF(v);
01166
01167     v = PyFloat_FromDouble(INVERSE_OF_CONDUCTANCE_QUANTUM);
01168     PyDict_SetItemString(d, "INVERSE_OF_CONDUCTANCE_QUANTUM", v);
01169     Py_INCREF(v);
01170     v = PyFloat_FromDouble(U_INVERSE_OF_CONDUCTANCE_QUANTUM);
01171     PyDict_SetItemString(d, "U_INVERSE_OF_CONDUCTANCE_QUANTUM", v);
01172     Py_INCREF(v);
01173
01174     v = PyFloat_FromDouble(JOSEPHSON_CONSTANT);
01175     PyDict_SetItemString(d, "JOSEPHSON_CONSTANT", v);
01176     Py_INCREF(v);
01177     v = PyFloat_FromDouble(U_JOSEPHSON_CONSTANT);
01178     PyDict_SetItemString(d, "U_JOSEPHSON_CONSTANT", v);
01179     Py_INCREF(v);
01180
01181     v = PyFloat_FromDouble(JOULE_ATOMIC_MASS_UNIT_RELATIONSHIP);
01182     PyDict_SetItemString(d, "JOULE_ATOMIC_MASS_UNIT_RELATIONSHIP", v);
01183     Py_INCREF(v);
01184     v = PyFloat_FromDouble(U_JOULE_ATOMIC_MASS_UNIT_RELATIONSHIP);
01185     PyDict_SetItemString(d, "U_JOULE_ATOMIC_MASS_UNIT_RELATIONSHIP", v);
01186     Py_INCREF(v);
01187
01188     v = PyFloat_FromDouble(JOULE_ELECTRON_VOLT_RELATIONSHIP);
01189     PyDict_SetItemString(d, "JOULE_ELECTRON_VOLT_RELATIONSHIP", v);
01190     Py_INCREF(v);
01191     v = PyFloat_FromDouble(U_JOULE_ELECTRON_VOLT_RELATIONSHIP);
01192     PyDict_SetItemString(d, "U_JOULE_ELECTRON_VOLT_RELATIONSHIP", v);
01193     Py_INCREF(v);
01194
01195     v = PyFloat_FromDouble(JOULE_HARTREE_RELATIONSHIP);
01196     PyDict_SetItemString(d, "JOULE_HARTREE_RELATIONSHIP", v);
01197     Py_INCREF(v);
01198     v = PyFloat_FromDouble(U_JOULE_HARTREE_RELATIONSHIP);
01199     PyDict_SetItemString(d, "U_JOULE_HARTREE_RELATIONSHIP", v);
01200     Py_INCREF(v);
01201
01202     v = PyFloat_FromDouble(JOULE_HERTZ_RELATIONSHIP);
01203     PyDict_SetItemString(d, "JOULE_HERTZ_RELATIONSHIP", v);
01204     Py_INCREF(v);
01205     v = PyFloat_FromDouble(U_JOULE_HERTZ_RELATIONSHIP);
01206     PyDict_SetItemString(d, "U_JOULE_HERTZ_RELATIONSHIP", v);
01207     Py_INCREF(v);
01208
01209     v = PyFloat_FromDouble(JOULE_INVERSE_METER_RELATIONSHIP);
01210     PyDict_SetItemString(d, "JOULE_INVERSE_METER_RELATIONSHIP", v);
01211     Py_INCREF(v);
01212     v = PyFloat_FromDouble(U_JOULE_INVERSE_METER_RELATIONSHIP);
01213     PyDict_SetItemString(d, "U_JOULE_INVERSE_METER_RELATIONSHIP", v);

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01214     Py_INCREF(v);
01215
01216     v = PyFloat_FromDouble(JOULE_KELVIN_RELATIONSHIP);
01217     PyDict_SetItemString(d, "JOULE_KELVIN_RELATIONSHIP", v);
01218     Py_INCREF(v);
01219     v = PyFloat_FromDouble(U_JOULE_KELVIN_RELATIONSHIP);
01220     PyDict_SetItemString(d, "U_JOULE_KELVIN_RELATIONSHIP", v);
01221     Py_INCREF(v);
01222
01223     v = PyFloat_FromDouble(JOULE_KILOGRAM_RELATIONSHIP);
01224     PyDict_SetItemString(d, "JOULE_KILOGRAM_RELATIONSHIP", v);
01225     Py_INCREF(v);
01226     v = PyFloat_FromDouble(U_JOULE_KILOGRAM_RELATIONSHIP);
01227     PyDict_SetItemString(d, "U_JOULE_KILOGRAM_RELATIONSHIP", v);
01228     Py_INCREF(v);
01229
01230     v = PyFloat_FromDouble(KELVIN_ATOMIC_MASS_UNIT_RELATIONSHIP);
01231     PyDict_SetItemString(d, "KELVIN_ATOMIC_MASS_UNIT_RELATIONSHIP", v);
01232     Py_INCREF(v);
01233     v = PyFloat_FromDouble(U_KELVIN_ATOMIC_MASS_UNIT_RELATIONSHIP);
01234     PyDict_SetItemString(d, "U_KELVIN_ATOMIC_MASS_UNIT_RELATIONSHIP", v);
01235     Py_INCREF(v);
01236
01237     v = PyFloat_FromDouble(KELVIN_ELECTRON_VOLT_RELATIONSHIP);
01238     PyDict_SetItemString(d, "KELVIN_ELECTRON_VOLT_RELATIONSHIP", v);
01239     Py_INCREF(v);
01240     v = PyFloat_FromDouble(U_KELVIN_ELECTRON_VOLT_RELATIONSHIP);
01241     PyDict_SetItemString(d, "U_KELVIN_ELECTRON_VOLT_RELATIONSHIP", v);
01242     Py_INCREF(v);
01243
01244     v = PyFloat_FromDouble(KELVIN_HARTREE_RELATIONSHIP);
01245     PyDict_SetItemString(d, "KELVIN_HARTREE_RELATIONSHIP", v);
01246     Py_INCREF(v);
01247     v = PyFloat_FromDouble(U_KELVIN_HARTREE_RELATIONSHIP);
01248     PyDict_SetItemString(d, "U_KELVIN_HARTREE_RELATIONSHIP", v);
01249     Py_INCREF(v);
01250
01251     v = PyFloat_FromDouble(KELVIN_HERTZ_RELATIONSHIP);
01252     PyDict_SetItemString(d, "KELVIN_HERTZ_RELATIONSHIP", v);
01253     Py_INCREF(v);
01254     v = PyFloat_FromDouble(U_KELVIN_HERTZ_RELATIONSHIP);
01255     PyDict_SetItemString(d, "U_KELVIN_HERTZ_RELATIONSHIP", v);
01256     Py_INCREF(v);
01257
01258     v = PyFloat_FromDouble(KELVIN_INVERSE_METER_RELATIONSHIP);
01259     PyDict_SetItemString(d, "KELVIN_INVERSE_METER_RELATIONSHIP", v);
01260     Py_INCREF(v);
01261     v = PyFloat_FromDouble(U_KELVIN_INVERSE_METER_RELATIONSHIP);
01262     PyDict_SetItemString(d, "U_KELVIN_INVERSE_METER_RELATIONSHIP", v);
01263     Py_INCREF(v);
01264
01265     v = PyFloat_FromDouble(KELVIN_JOULE_RELATIONSHIP);
01266     PyDict_SetItemString(d, "KELVIN_JOULE_RELATIONSHIP", v);
01267     Py_INCREF(v);
01268     v = PyFloat_FromDouble(U_KELVIN_JOULE_RELATIONSHIP);
01269     PyDict_SetItemString(d, "U_KELVIN_JOULE_RELATIONSHIP", v);
01270     Py_INCREF(v);
01271
01272     v = PyFloat_FromDouble(KELVIN_KILOGRAM_RELATIONSHIP);
01273     PyDict_SetItemString(d, "KELVIN_KILOGRAM_RELATIONSHIP", v);
01274     Py_INCREF(v);
01275     v = PyFloat_FromDouble(U_KELVIN_KILOGRAM_RELATIONSHIP);
01276     PyDict_SetItemString(d, "U_KELVIN_KILOGRAM_RELATIONSHIP", v);
01277     Py_INCREF(v);
01278
01279     v = PyFloat_FromDouble(KILOGRAM_ATOMIC_MASS_UNIT_RELATIONSHIP);
01280     PyDict_SetItemString(d, "KILOGRAM_ATOMIC_MASS_UNIT_RELATIONSHIP", v);
01281     Py_INCREF(v);
01282     v = PyFloat_FromDouble(U_KILOGRAM_ATOMIC_MASS_UNIT_RELATIONSHIP);
01283     PyDict_SetItemString(d, "U_KILOGRAM_ATOMIC_MASS_UNIT_RELATIONSHIP", v);
01284     Py_INCREF(v);
01285
01286     v = PyFloat_FromDouble(KILOGRAM_ELECTRON_VOLT_RELATIONSHIP);
01287     PyDict_SetItemString(d, "KILOGRAM_ELECTRON_VOLT_RELATIONSHIP", v);
01288     Py_INCREF(v);
01289     v = PyFloat_FromDouble(U_KILOGRAM_ELECTRON_VOLT_RELATIONSHIP);
01290     PyDict_SetItemString(d, "U_KILOGRAM_ELECTRON_VOLT_RELATIONSHIP", v);
01291     Py_INCREF(v);
01292
01293     v = PyFloat_FromDouble(KILOGRAM_HARTREE_RELATIONSHIP);
01294     PyDict_SetItemString(d, "KILOGRAM_HARTREE_RELATIONSHIP", v);
01295     Py_INCREF(v);
01296     v = PyFloat_FromDouble(U_KILOGRAM_HARTREE_RELATIONSHIP);
01297     PyDict_SetItemString(d, "U_KILOGRAM_HARTREE_RELATIONSHIP", v);
01298     Py_INCREF(v);
01299
01300     v = PyFloat_FromDouble(KILOGRAM_HERTZ_RELATIONSHIP);

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01301     PyDict_SetItemString(d, "KILOGRAM_HERTZ_RELATIONSHIP", v);
01302     Py_INCREF(v);
01303     v = PyFloat_FromDouble(U_KILOGRAM_HERTZ_RELATIONSHIP);
01304     PyDict_SetItemString(d, "U_KILOGRAM_HERTZ_RELATIONSHIP", v);
01305     Py_INCREF(v);
01306
01307     v = PyFloat_FromDouble(KILOGRAM_INVERSE_METER_RELATIONSHIP);
01308     PyDict_SetItemString(d, "KILOGRAM_INVERSE_METER_RELATIONSHIP", v);
01309     Py_INCREF(v);
01310     v = PyFloat_FromDouble(U_KILOGRAM_INVERSE_METER_RELATIONSHIP);
01311     PyDict_SetItemString(d, "U_KILOGRAM_INVERSE_METER_RELATIONSHIP", v);
01312     Py_INCREF(v);
01313
01314     v = PyFloat_FromDouble(KILOGRAM_JOULE_RELATIONSHIP);
01315     PyDict_SetItemString(d, "KILOGRAM_JOULE_RELATIONSHIP", v);
01316     Py_INCREF(v);
01317     v = PyFloat_FromDouble(U_KILOGRAM_JOULE_RELATIONSHIP);
01318     PyDict_SetItemString(d, "U_KILOGRAM_JOULE_RELATIONSHIP", v);
01319     Py_INCREF(v);
01320
01321     v = PyFloat_FromDouble(KILOGRAM_KELVIN_RELATIONSHIP);
01322     PyDict_SetItemString(d, "KILOGRAM_KELVIN_RELATIONSHIP", v);
01323     Py_INCREF(v);
01324     v = PyFloat_FromDouble(U_KILOGRAM_KELVIN_RELATIONSHIP);
01325     PyDict_SetItemString(d, "U_KILOGRAM_KELVIN_RELATIONSHIP", v);
01326     Py_INCREF(v);
01327
01328     v = PyFloat_FromDouble(LATTICE_PARAMETER_OF_SILICON);
01329     PyDict_SetItemString(d, "LATTICE_PARAMETER_OF_SILICON", v);
01330     Py_INCREF(v);
01331     v = PyFloat_FromDouble(U_LATTICE_PARAMETER_OF_SILICON);
01332     PyDict_SetItemString(d, "U_LATTICE_PARAMETER_OF_SILICON", v);
01333     Py_INCREF(v);
01334
01335     v = PyFloat_FromDouble(LATTICE_SPACING_OF_IDEAL_SI_220);
01336     PyDict_SetItemString(d, "LATTICE_SPACING_OF_IDEAL_SI_220", v);
01337     Py_INCREF(v);
01338     v = PyFloat_FromDouble(U_LATTICE_SPACING_OF_IDEAL_SI_220);
01339     PyDict_SetItemString(d, "U_LATTICE_SPACING_OF_IDEAL_SI_220", v);
01340     Py_INCREF(v);
01341
01342     v = PyFloat_FromDouble(LOSCHMIDT_CONSTANT_273_15_K_100_KPA);
01343     PyDict_SetItemString(d, "LOSCHMIDT_CONSTANT_273_15_K_100_KPA", v);
01344     Py_INCREF(v);
01345     v = PyFloat_FromDouble(U_LOSCHMIDT_CONSTANT_273_15_K_100_KPA);
01346     PyDict_SetItemString(d, "U_LOSCHMIDT_CONSTANT_273_15_K_100_KPA", v);
01347     Py_INCREF(v);
01348
01349     v = PyFloat_FromDouble(LOSCHMIDT_CONSTANT_273_15_K_101_325_KPA);
01350     PyDict_SetItemString(d, "LOSCHMIDT_CONSTANT_273_15_K_101_325_KPA", v);
01351     Py_INCREF(v);
01352     v = PyFloat_FromDouble(U_LOSCHMIDT_CONSTANT_273_15_K_101_325_KPA);
01353     PyDict_SetItemString(d, "U_LOSCHMIDT_CONSTANT_273_15_K_101_325_KPA", v);
01354     Py_INCREF(v);
01355
01356     v = PyFloat_FromDouble(LUMINOUS EFFICACY);
01357     PyDict_SetItemString(d, "LUMINOUS EFFICACY", v);
01358     Py_INCREF(v);
01359     v = PyFloat_FromDouble(U_LUMINOUS EFFICACY);
01360     PyDict_SetItemString(d, "U_LUMINOUS EFFICACY", v);
01361     Py_INCREF(v);
01362
01363     v = PyFloat_FromDouble(MAG_FLUX_QUANTUM);
01364     PyDict_SetItemString(d, "MAG_FLUX_QUANTUM", v);
01365     Py_INCREF(v);
01366     v = PyFloat_FromDouble(U_MAG_FLUX_QUANTUM);
01367     PyDict_SetItemString(d, "U_MAG_FLUX_QUANTUM", v);
01368     Py_INCREF(v);
01369
01370     v = PyFloat_FromDouble(MOLAR_GAS_CONSTANT);
01371     PyDict_SetItemString(d, "MOLAR_GAS_CONSTANT", v);
01372     Py_INCREF(v);
01373     v = PyFloat_FromDouble(U_MOLAR_GAS_CONSTANT);
01374     PyDict_SetItemString(d, "U_MOLAR_GAS_CONSTANT", v);
01375     Py_INCREF(v);
01376
01377     v = PyFloat_FromDouble(MOLAR_MASS_CONSTANT);
01378     PyDict_SetItemString(d, "MOLAR_MASS_CONSTANT", v);
01379     Py_INCREF(v);
01380     v = PyFloat_FromDouble(U_MOLAR_MASS_CONSTANT);
01381     PyDict_SetItemString(d, "U_MOLAR_MASS_CONSTANT", v);
01382     Py_INCREF(v);
01383
01384     v = PyFloat_FromDouble(MOLAR_MASS_OF_CARBON_12);
01385     PyDict_SetItemString(d, "MOLAR_MASS_OF_CARBON_12", v);
01386     Py_INCREF(v);
01387     v = PyFloat_FromDouble(U_MOLAR_MASS_OF_CARBON_12);

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01388     PyDict_SetItemString(d, "U_MOLAR_MASS_OF_CARBON_12", v);
01389     Py_INCREF(v);
01390
01391     v = PyFloat_FromDouble(MOLAR_PLANCK_CONSTANT);
01392     PyDict_SetItemString(d, "MOLAR_PLANCK_CONSTANT", v);
01393     Py_INCREF(v);
01394     v = PyFloat_FromDouble(U_MOLAR_PLANCK_CONSTANT);
01395     PyDict_SetItemString(d, "U_MOLAR_PLANCK_CONSTANT", v);
01396     Py_INCREF(v);
01397
01398     v = PyFloat_FromDouble(MOLAR_VOLUME_OF IDEAL_GAS_273_15_K_100_KPA);
01399     PyDict_SetItemString(d, "MOLAR_VOLUME_OF IDEAL_GAS_273_15_K_100_KPA", v);
01400     Py_INCREF(v);
01401     v = PyFloat_FromDouble(U_MOLAR_VOLUME_OF IDEAL_GAS_273_15_K_100_KPA);
01402     PyDict_SetItemString(d, "U_MOLAR_VOLUME_OF IDEAL_GAS_273_15_K_100_KPA", v);
01403     Py_INCREF(v);
01404
01405     v = PyFloat_FromDouble(MOLAR_VOLUME_OF IDEAL_GAS_273_15_K_101_325_KPA);
01406     PyDict_SetItemString(d, "MOLAR_VOLUME_OF IDEAL_GAS_273_15_K_101_325_KPA", v);
01407     Py_INCREF(v);
01408     v = PyFloat_FromDouble(U_MOLAR_VOLUME_OF IDEAL_GAS_273_15_K_101_325_KPA);
01409     PyDict_SetItemString(d, "U_MOLAR_VOLUME_OF IDEAL_GAS_273_15_K_101_325_KPA", v);
01410     Py_INCREF(v);
01411
01412     v = PyFloat_FromDouble(MOLAR_VOLUME_OF SILICON);
01413     PyDict_SetItemString(d, "MOLAR_VOLUME_OF SILICON", v);
01414     Py_INCREF(v);
01415     v = PyFloat_FromDouble(U_MOLAR_VOLUME_OF SILICON);
01416     PyDict_SetItemString(d, "U_MOLAR_VOLUME_OF SILICON", v);
01417     Py_INCREF(v);
01418
01419     v = PyFloat_FromDouble(MOLYBDENUM_X_UNIT);
01420     PyDict_SetItemString(d, "MOLYBDENUM_X_UNIT", v);
01421     Py_INCREF(v);
01422     v = PyFloat_FromDouble(U_MOLYBDENUM_X_UNIT);
01423     PyDict_SetItemString(d, "U_MOLYBDENUM_X_UNIT", v);
01424     Py_INCREF(v);
01425
01426     v = PyFloat_FromDouble(MUON_COMPTON_WAVELENGTH);
01427     PyDict_SetItemString(d, "MUON_COMPTON_WAVELENGTH", v);
01428     Py_INCREF(v);
01429     v = PyFloat_FromDouble(U_MUON_COMPTON_WAVELENGTH);
01430     PyDict_SetItemString(d, "U_MUON_COMPTON_WAVELENGTH", v);
01431     Py_INCREF(v);
01432
01433     v = PyFloat_FromDouble(MUON_ELECTRON_MASS_RATIO);
01434     PyDict_SetItemString(d, "MUON_ELECTRON_MASS_RATIO", v);
01435     Py_INCREF(v);
01436     v = PyFloat_FromDouble(U_MUON_ELECTRON_MASS_RATIO);
01437     PyDict_SetItemString(d, "U_MUON_ELECTRON_MASS_RATIO", v);
01438     Py_INCREF(v);
01439
01440     v = PyFloat_FromDouble(MUON_G_FACTOR);
01441     PyDict_SetItemString(d, "MUON_G_FACTOR", v);
01442     Py_INCREF(v);
01443     v = PyFloat_FromDouble(U_MUON_G_FACTOR);
01444     PyDict_SetItemString(d, "U_MUON_G_FACTOR", v);
01445     Py_INCREF(v);
01446
01447     v = PyFloat_FromDouble(MUON_MAG_MOM);
01448     PyDict_SetItemString(d, "MUON_MAG_MOM", v);
01449     Py_INCREF(v);
01450     v = PyFloat_FromDouble(U_MUON_MAG_MOM);
01451     PyDict_SetItemString(d, "U_MUON_MAG_MOM", v);
01452     Py_INCREF(v);
01453
01454     v = PyFloat_FromDouble(MUON_MAG_MOM_ANOMALY);
01455     PyDict_SetItemString(d, "MUON_MAG_MOM_ANOMALY", v);
01456     Py_INCREF(v);
01457     v = PyFloat_FromDouble(U_MUON_MAG_MOM_ANOMALY);
01458     PyDict_SetItemString(d, "U_MUON_MAG_MOM_ANOMALY", v);
01459     Py_INCREF(v);
01460
01461     v = PyFloat_FromDouble(MUON_MAG_MOM_TO_BOHR_MAGNETON_RATIO);
01462     PyDict_SetItemString(d, "MUON_MAG_MOM_TO_BOHR_MAGNETON_RATIO", v);
01463     Py_INCREF(v);
01464     v = PyFloat_FromDouble(U_MUON_MAG_MOM_TO_BOHR_MAGNETON_RATIO);
01465     PyDict_SetItemString(d, "U_MUON_MAG_MOM_TO_BOHR_MAGNETON_RATIO", v);
01466     Py_INCREF(v);
01467
01468     v = PyFloat_FromDouble(MUON_MAG_MOM_TO_NUCLEAR_MAGNETON_RATIO);
01469     PyDict_SetItemString(d, "MUON_MAG_MOM_TO_NUCLEAR_MAGNETON_RATIO", v);
01470     Py_INCREF(v);
01471     v = PyFloat_FromDouble(U_MUON_MAG_MOM_TO_NUCLEAR_MAGNETON_RATIO);
01472     PyDict_SetItemString(d, "U_MUON_MAG_MOM_TO_NUCLEAR_MAGNETON_RATIO", v);
01473     Py_INCREF(v);
01474
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01475     v = PyFloat_FromDouble(MUON_MASS);
01476     PyDict_SetItemString(d, "MUON_MASS", v);
01477     Py_INCREF(v);
01478     v = PyFloat_FromDouble(U_MUON_MASS);
01479     PyDict_SetItemString(d, "U_MUON_MASS", v);
01480     Py_INCREF(v);
01481
01482     v = PyFloat_FromDouble(MUON_MASS_ENERGY_EQUIVALENT);
01483     PyDict_SetItemString(d, "MUON_MASS_ENERGY_EQUIVALENT", v);
01484     Py_INCREF(v);
01485     v = PyFloat_FromDouble(U_MUON_MASS_ENERGY_EQUIVALENT);
01486     PyDict_SetItemString(d, "U_MUON_MASS_ENERGY_EQUIVALENT", v);
01487     Py_INCREF(v);
01488
01489     v = PyFloat_FromDouble(MUON_MASS_ENERGY_EQUIVALENT_IN_MEV);
01490     PyDict_SetItemString(d, "MUON_MASS_ENERGY_EQUIVALENT_IN_MEV", v);
01491     Py_INCREF(v);
01492     v = PyFloat_FromDouble(U_MUON_MASS_ENERGY_EQUIVALENT_IN_MEV);
01493     PyDict_SetItemString(d, "U_MUON_MASS_ENERGY_EQUIVALENT_IN_MEV", v);
01494     Py_INCREF(v);
01495
01496     v = PyFloat_FromDouble(MUON_MASS_IN_U);
01497     PyDict_SetItemString(d, "MUON_MASS_IN_U", v);
01498     Py_INCREF(v);
01499     v = PyFloat_FromDouble(U_MUON_MASS_IN_U);
01500     PyDict_SetItemString(d, "U_MUON_MASS_IN_U", v);
01501     Py_INCREF(v);
01502
01503     v = PyFloat_FromDouble(MUON_MOLAR_MASS);
01504     PyDict_SetItemString(d, "MUON_MOLAR_MASS", v);
01505     Py_INCREF(v);
01506     v = PyFloat_FromDouble(U_MUON_MOLAR_MASS);
01507     PyDict_SetItemString(d, "U_MUON_MOLAR_MASS", v);
01508     Py_INCREF(v);
01509
01510     v = PyFloat_FromDouble(MUON_NEUTRON_MASS_RATIO);
01511     PyDict_SetItemString(d, "MUON_NEUTRON_MASS_RATIO", v);
01512     Py_INCREF(v);
01513     v = PyFloat_FromDouble(U_MUON_NEUTRON_MASS_RATIO);
01514     PyDict_SetItemString(d, "U_MUON_NEUTRON_MASS_RATIO", v);
01515     Py_INCREF(v);
01516
01517     v = PyFloat_FromDouble(MUON_PROTON_MAG_MOM_RATIO);
01518     PyDict_SetItemString(d, "MUON_PROTON_MAG_MOM_RATIO", v);
01519     Py_INCREF(v);
01520     v = PyFloat_FromDouble(U_MUON_PROTON_MAG_MOM_RATIO);
01521     PyDict_SetItemString(d, "U_MUON_PROTON_MAG_MOM_RATIO", v);
01522     Py_INCREF(v);
01523
01524     v = PyFloat_FromDouble(MUON_PROTON_MASS_RATIO);
01525     PyDict_SetItemString(d, "MUON_PROTON_MASS_RATIO", v);
01526     Py_INCREF(v);
01527     v = PyFloat_FromDouble(U_MUON_PROTON_MASS_RATIO);
01528     PyDict_SetItemString(d, "U_MUON_PROTON_MASS_RATIO", v);
01529     Py_INCREF(v);
01530
01531     v = PyFloat_FromDouble(MUON_TAU_MASS_RATIO);
01532     PyDict_SetItemString(d, "MUON_TAU_MASS_RATIO", v);
01533     Py_INCREF(v);
01534     v = PyFloat_FromDouble(U_MUON_TAU_MASS_RATIO);
01535     PyDict_SetItemString(d, "U_MUON_TAU_MASS_RATIO", v);
01536     Py_INCREF(v);
01537
01538     v = PyFloat_FromDouble(NATURAL_UNIT_OF_ACTION);
01539     PyDict_SetItemString(d, "NATURAL_UNIT_OF_ACTION", v);
01540     Py_INCREF(v);
01541     v = PyFloat_FromDouble(U_NATURAL_UNIT_OF_ACTION);
01542     PyDict_SetItemString(d, "U_NATURAL_UNIT_OF_ACTION", v);
01543     Py_INCREF(v);
01544
01545     v = PyFloat_FromDouble(NATURAL_UNIT_OF_ACTION_IN_EV_S);
01546     PyDict_SetItemString(d, "NATURAL_UNIT_OF_ACTION_IN_EV_S", v);
01547     Py_INCREF(v);
01548     v = PyFloat_FromDouble(U_NATURAL_UNIT_OF_ACTION_IN_EV_S);
01549     PyDict_SetItemString(d, "U_NATURAL_UNIT_OF_ACTION_IN_EV_S", v);
01550     Py_INCREF(v);
01551
01552     v = PyFloat_FromDouble(NATURAL_UNIT_OF_ENERGY);
01553     PyDict_SetItemString(d, "NATURAL_UNIT_OF_ENERGY", v);
01554     Py_INCREF(v);
01555     v = PyFloat_FromDouble(U_NATURAL_UNIT_OF_ENERGY);
01556     PyDict_SetItemString(d, "U_NATURAL_UNIT_OF_ENERGY", v);
01557     Py_INCREF(v);
01558
01559     v = PyFloat_FromDouble(NATURAL_UNIT_OF_ENERGY_IN_MEV);
01560     PyDict_SetItemString(d, "NATURAL_UNIT_OF_ENERGY_IN_MEV", v);
01561     Py_INCREF(v);
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01562     v = PyFloat_FromDouble(U_NATURAL_UNIT_OF_ENERGY_IN_MEV);
01563     PyDict_SetItemString(d, "U_NATURAL_UNIT_OF_ENERGY_IN_MEV", v);
01564     Py_INCREF(v);
01565
01566     v = PyFloat_FromDouble(NATURAL_UNIT_OF_LENGTH);
01567     PyDict_SetItemString(d, "NATURAL_UNIT_OF_LENGTH", v);
01568     Py_INCREF(v);
01569     v = PyFloat_FromDouble(U_NATURAL_UNIT_OF_LENGTH);
01570     PyDict_SetItemString(d, "U_NATURAL_UNIT_OF_LENGTH", v);
01571     Py_INCREF(v);
01572
01573     v = PyFloat_FromDouble(NATURAL_UNIT_OF_MASS);
01574     PyDict_SetItemString(d, "NATURAL_UNIT_OF_MASS", v);
01575     Py_INCREF(v);
01576     v = PyFloat_FromDouble(U_NATURAL_UNIT_OF_MASS);
01577     PyDict_SetItemString(d, "U_NATURAL_UNIT_OF_MASS", v);
01578     Py_INCREF(v);
01579
01580     v = PyFloat_FromDouble(NATURAL_UNIT_OF_MOMENTUM);
01581     PyDict_SetItemString(d, "NATURAL_UNIT_OF_MOMENTUM", v);
01582     Py_INCREF(v);
01583     v = PyFloat_FromDouble(U_NATURAL_UNIT_OF_MOMENTUM);
01584     PyDict_SetItemString(d, "U_NATURAL_UNIT_OF_MOMENTUM", v);
01585     Py_INCREF(v);
01586
01587     v = PyFloat_FromDouble(NATURAL_UNIT_OF_MOMENTUM_IN_MEV_C);
01588     PyDict_SetItemString(d, "NATURAL_UNIT_OF_MOMENTUM_IN_MEV_C", v);
01589     Py_INCREF(v);
01590     v = PyFloat_FromDouble(U_NATURAL_UNIT_OF_MOMENTUM_IN_MEV_C);
01591     PyDict_SetItemString(d, "U_NATURAL_UNIT_OF_MOMENTUM_IN_MEV_C", v);
01592     Py_INCREF(v);
01593
01594     v = PyFloat_FromDouble(NATURAL_UNIT_OF_TIME);
01595     PyDict_SetItemString(d, "NATURAL_UNIT_OF_TIME", v);
01596     Py_INCREF(v);
01597     v = PyFloat_FromDouble(U_NATURAL_UNIT_OF_TIME);
01598     PyDict_SetItemString(d, "U_NATURAL_UNIT_OF_TIME", v);
01599     Py_INCREF(v);
01600
01601     v = PyFloat_FromDouble(NATURAL_UNIT_OF_VELOCITY);
01602     PyDict_SetItemString(d, "NATURAL_UNIT_OF_VELOCITY", v);
01603     Py_INCREF(v);
01604     v = PyFloat_FromDouble(U_NATURAL_UNIT_OF_VELOCITY);
01605     PyDict_SetItemString(d, "U_NATURAL_UNIT_OF_VELOCITY", v);
01606     Py_INCREF(v);
01607
01608     v = PyFloat_FromDouble(NEUTRON_COMPTON_WAVELENGTH);
01609     PyDict_SetItemString(d, "NEUTRON_COMPTON_WAVELENGTH", v);
01610     Py_INCREF(v);
01611     v = PyFloat_FromDouble(U_NEUTRON_COMPTON_WAVELENGTH);
01612     PyDict_SetItemString(d, "U_NEUTRON_COMPTON_WAVELENGTH", v);
01613     Py_INCREF(v);
01614
01615     v = PyFloat_FromDouble(NEUTRON_ELECTRON_MAG_MOM_RATIO);
01616     PyDict_SetItemString(d, "NEUTRON_ELECTRON_MAG_MOM_RATIO", v);
01617     Py_INCREF(v);
01618     v = PyFloat_FromDouble(U_NEUTRON_ELECTRON_MAG_MOM_RATIO);
01619     PyDict_SetItemString(d, "U_NEUTRON_ELECTRON_MAG_MOM_RATIO", v);
01620     Py_INCREF(v);
01621
01622     v = PyFloat_FromDouble(NEUTRON_ELECTRON_MASS_RATIO);
01623     PyDict_SetItemString(d, "NEUTRON_ELECTRON_MASS_RATIO", v);
01624     Py_INCREF(v);
01625     v = PyFloat_FromDouble(U_NEUTRON_ELECTRON_MASS_RATIO);
01626     PyDict_SetItemString(d, "U_NEUTRON_ELECTRON_MASS_RATIO", v);
01627     Py_INCREF(v);
01628
01629     v = PyFloat_FromDouble(NEUTRON_G_FACTOR);
01630     PyDict_SetItemString(d, "NEUTRON_G_FACTOR", v);
01631     Py_INCREF(v);
01632     v = PyFloat_FromDouble(U_NEUTRON_G_FACTOR);
01633     PyDict_SetItemString(d, "U_NEUTRON_G_FACTOR", v);
01634     Py_INCREF(v);
01635
01636     v = PyFloat_FromDouble(NEUTRON_GYROMAG_RATIO);
01637     PyDict_SetItemString(d, "NEUTRON_GYROMAG_RATIO", v);
01638     Py_INCREF(v);
01639     v = PyFloat_FromDouble(U_NEUTRON_GYROMAG_RATIO);
01640     PyDict_SetItemString(d, "U_NEUTRON_GYROMAG_RATIO", v);
01641     Py_INCREF(v);
01642
01643     v = PyFloat_FromDouble(NEUTRON_GYROMAG_RATIO_IN_MHZ_T);
01644     PyDict_SetItemString(d, "NEUTRON_GYROMAG_RATIO_IN_MHZ_T", v);
01645     Py_INCREF(v);
01646     v = PyFloat_FromDouble(U_NEUTRON_GYROMAG_RATIO_IN_MHZ_T);
01647     PyDict_SetItemString(d, "U_NEUTRON_GYROMAG_RATIO_IN_MHZ_T", v);
01648     Py_INCREF(v);
```

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01649
01650     v = PyFloat_FromDouble(NEUTRON_MAG__MOM);
01651     PyDict_SetItemString(d, "NEUTRON_MAG__MOM", v);
01652     Py_INCREF(v);
01653     v = PyFloat_FromDouble(U_NEUTRON_MAG__MOM);
01654     PyDict_SetItemString(d, "U_NEUTRON_MAG__MOM", v);
01655     Py_INCREF(v);
01656
01657     v = PyFloat_FromDouble(NEUTRON_MAG__MOM__TO_BOHR_MAGNETON_RATIO);
01658     PyDict_SetItemString(d, "NEUTRON_MAG__MOM__TO_BOHR_MAGNETON_RATIO", v);
01659     Py_INCREF(v);
01660     v = PyFloat_FromDouble(U_NEUTRON_MAG__MOM__TO_BOHR_MAGNETON_RATIO);
01661     PyDict_SetItemString(d, "U_NEUTRON_MAG__MOM__TO_BOHR_MAGNETON_RATIO", v);
01662     Py_INCREF(v);
01663
01664     v = PyFloat_FromDouble(NEUTRON_MAG__MOM__TO_NUCLEAR_MAGNETON_RATIO);
01665     PyDict_SetItemString(d, "NEUTRON_MAG__MOM__TO_NUCLEAR_MAGNETON_RATIO", v);
01666     Py_INCREF(v);
01667     v = PyFloat_FromDouble(U_NEUTRON_MAG__MOM__TO_NUCLEAR_MAGNETON_RATIO);
01668     PyDict_SetItemString(d, "U_NEUTRON_MAG__MOM__TO_NUCLEAR_MAGNETON_RATIO", v);
01669     Py_INCREF(v);
01670
01671     v = PyFloat_FromDouble(NEUTRON_MASS);
01672     PyDict_SetItemString(d, "NEUTRON_MASS", v);
01673     Py_INCREF(v);
01674     v = PyFloat_FromDouble(U_NEUTRON_MASS);
01675     PyDict_SetItemString(d, "U_NEUTRON_MASS", v);
01676     Py_INCREF(v);
01677
01678     v = PyFloat_FromDouble(NEUTRON_MASS_ENERGY_EQUIVALENT);
01679     PyDict_SetItemString(d, "NEUTRON_MASS_ENERGY_EQUIVALENT", v);
01680     Py_INCREF(v);
01681     v = PyFloat_FromDouble(U_NEUTRON_MASS_ENERGY_EQUIVALENT);
01682     PyDict_SetItemString(d, "U_NEUTRON_MASS_ENERGY_EQUIVALENT", v);
01683     Py_INCREF(v);
01684
01685     v = PyFloat_FromDouble(NEUTRON_MASS_ENERGY_EQUIVALENT_IN_MEV);
01686     PyDict_SetItemString(d, "NEUTRON_MASS_ENERGY_EQUIVALENT_IN_MEV", v);
01687     Py_INCREF(v);
01688     v = PyFloat_FromDouble(U_NEUTRON_MASS_ENERGY_EQUIVALENT_IN_MEV);
01689     PyDict_SetItemString(d, "U_NEUTRON_MASS_ENERGY_EQUIVALENT_IN_MEV", v);
01690     Py_INCREF(v);
01691
01692     v = PyFloat_FromDouble(NEUTRON_MASS_IN_U);
01693     PyDict_SetItemString(d, "NEUTRON_MASS_IN_U", v);
01694     Py_INCREF(v);
01695     v = PyFloat_FromDouble(U_NEUTRON_MASS_IN_U);
01696     PyDict_SetItemString(d, "U_NEUTRON_MASS_IN_U", v);
01697     Py_INCREF(v);
01698
01699     v = PyFloat_FromDouble(NEUTRON_MOLAR_MASS);
01700     PyDict_SetItemString(d, "NEUTRON_MOLAR_MASS", v);
01701     Py_INCREF(v);
01702     v = PyFloat_FromDouble(U_NEUTRON_MOLAR_MASS);
01703     PyDict_SetItemString(d, "U_NEUTRON_MOLAR_MASS", v);
01704     Py_INCREF(v);
01705
01706     v = PyFloat_FromDouble(NEUTRON_MUON_MASS_RATIO);
01707     PyDict_SetItemString(d, "NEUTRON_MUON_MASS_RATIO", v);
01708     Py_INCREF(v);
01709     v = PyFloat_FromDouble(U_NEUTRON_MUON_MASS_RATIO);
01710     PyDict_SetItemString(d, "U_NEUTRON_MUON_MASS_RATIO", v);
01711     Py_INCREF(v);
01712
01713     v = PyFloat_FromDouble(NEUTRON_PROTON_MAG__MOM__RATIO);
01714     PyDict_SetItemString(d, "NEUTRON_PROTON_MAG__MOM__RATIO", v);
01715     Py_INCREF(v);
01716     v = PyFloat_FromDouble(U_NEUTRON_PROTON_MAG__MOM__RATIO);
01717     PyDict_SetItemString(d, "U_NEUTRON_PROTON_MAG__MOM__RATIO", v);
01718     Py_INCREF(v);
01719
01720     v = PyFloat_FromDouble(NEUTRON_PROTON_MASS_DIFFERENCE);
01721     PyDict_SetItemString(d, "NEUTRON_PROTON_MASS_DIFFERENCE", v);
01722     Py_INCREF(v);
01723     v = PyFloat_FromDouble(U_NEUTRON_PROTON_MASS_DIFFERENCE);
01724     PyDict_SetItemString(d, "U_NEUTRON_PROTON_MASS_DIFFERENCE", v);
01725     Py_INCREF(v);
01726
01727     v = PyFloat_FromDouble(NEUTRON_PROTON_MASS_DIFFERENCE_ENERGY_EQUIVALENT);
01728     PyDict_SetItemString(d, "NEUTRON_PROTON_MASS_DIFFERENCE_ENERGY_EQUIVALENT", v);
01729     Py_INCREF(v);
01730     v = PyFloat_FromDouble(U_NEUTRON_PROTON_MASS_DIFFERENCE_ENERGY_EQUIVALENT);
01731     PyDict_SetItemString(d, "U_NEUTRON_PROTON_MASS_DIFFERENCE_ENERGY_EQUIVALENT", v);
01732     Py_INCREF(v);
01733
01734     v = PyFloat_FromDouble(NEUTRON_PROTON_MASS_DIFFERENCE_ENERGY_EQUIVALENT_IN_MEV);
01735     PyDict_SetItemString(d, "NEUTRON_PROTON_MASS_DIFFERENCE_ENERGY_EQUIVALENT_IN_MEV", v);
```

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01736     Py_INCREF(v);
01737     v = PyFloat_FromDouble(U_NEUTRON_PROTON_MASS_DIFFERENCE_ENERGY_EQUIVALENT_IN_MEV);
01738     PyDict_SetItemString(d, "U_NEUTRON_PROTON_MASS_DIFFERENCE_ENERGY_EQUIVALENT_IN_MEV", v);
01739     Py_INCREF(v);
01740
01741     v = PyFloat_FromDouble(NEUTRON_PROTON_MASS_DIFFERENCE_IN_U);
01742     PyDict_SetItemString(d, "NEUTRON_PROTON_MASS_DIFFERENCE_IN_U", v);
01743     Py_INCREF(v);
01744     v = PyFloat_FromDouble(U_NEUTRON_PROTON_MASS_DIFFERENCE_IN_U);
01745     PyDict_SetItemString(d, "U_NEUTRON_PROTON_MASS_DIFFERENCE_IN_U", v);
01746     Py_INCREF(v);
01747
01748     v = PyFloat_FromDouble(NEUTRON_PROTON_MASS_RATIO);
01749     PyDict_SetItemString(d, "NEUTRON_PROTON_MASS_RATIO", v);
01750     Py_INCREF(v);
01751     v = PyFloat_FromDouble(U_NEUTRON_PROTON_MASS_RATIO);
01752     PyDict_SetItemString(d, "U_NEUTRON_PROTON_MASS_RATIO", v);
01753     Py_INCREF(v);
01754
01755     v = PyFloat_FromDouble(NEUTRON_RELATIVE_ATOMIC_MASS);
01756     PyDict_SetItemString(d, "NEUTRON_RELATIVE_ATOMIC_MASS", v);
01757     Py_INCREF(v);
01758     v = PyFloat_FromDouble(U_NEUTRON_RELATIVE_ATOMIC_MASS);
01759     PyDict_SetItemString(d, "U_NEUTRON_RELATIVE_ATOMIC_MASS", v);
01760     Py_INCREF(v);
01761
01762     v = PyFloat_FromDouble(NEUTRON_TAU_MASS_RATIO);
01763     PyDict_SetItemString(d, "NEUTRON_TAU_MASS_RATIO", v);
01764     Py_INCREF(v);
01765     v = PyFloat_FromDouble(U_NEUTRON_TAU_MASS_RATIO);
01766     PyDict_SetItemString(d, "U_NEUTRON_TAU_MASS_RATIO", v);
01767     Py_INCREF(v);
01768
01769     v = PyFloat_FromDouble(NEUTRON_TO_SHIELDED_PROTON_MAG_MOM_RATIO);
01770     PyDict_SetItemString(d, "NEUTRON_TO_SHIELDED_PROTON_MAG_MOM_RATIO", v);
01771     Py_INCREF(v);
01772     v = PyFloat_FromDouble(U_NEUTRON_TO_SHIELDED_PROTON_MAG_MOM_RATIO);
01773     PyDict_SetItemString(d, "U_NEUTRON_TO_SHIELDED_PROTON_MAG_MOM_RATIO", v);
01774     Py_INCREF(v);
01775
01776     v = PyFloat_FromDouble(NEWTONIAN_CONSTANT_OF_GRAVITATION);
01777     PyDict_SetItemString(d, "NEWTONIAN_CONSTANT_OF_GRAVITATION", v);
01778     Py_INCREF(v);
01779     v = PyFloat_FromDouble(U_NEWTONIAN_CONSTANT_OF_GRAVITATION);
01780     PyDict_SetItemString(d, "U_NEWTONIAN_CONSTANT_OF_GRAVITATION", v);
01781     Py_INCREF(v);
01782
01783     v = PyFloat_FromDouble(NEWTONIAN_CONSTANT_OF_GRAVITATION_OVER_H_BAR_C);
01784     PyDict_SetItemString(d, "NEWTONIAN_CONSTANT_OF_GRAVITATION_OVER_H_BAR_C", v);
01785     Py_INCREF(v);
01786     v = PyFloat_FromDouble(U_NEWTONIAN_CONSTANT_OF_GRAVITATION_OVER_H_BAR_C);
01787     PyDict_SetItemString(d, "U_NEWTONIAN_CONSTANT_OF_GRAVITATION_OVER_H_BAR_C", v);
01788     Py_INCREF(v);
01789
01790     v = PyFloat_FromDouble(NUCLEAR_MAGNETON);
01791     PyDict_SetItemString(d, "NUCLEAR_MAGNETON", v);
01792     Py_INCREF(v);
01793     v = PyFloat_FromDouble(U_NUCLEAR_MAGNETON);
01794     PyDict_SetItemString(d, "U_NUCLEAR_MAGNETON", v);
01795     Py_INCREF(v);
01796
01797     v = PyFloat_FromDouble(NUCLEAR_MAGNETON_IN_EV_T);
01798     PyDict_SetItemString(d, "NUCLEAR_MAGNETON_IN_EV_T", v);
01799     Py_INCREF(v);
01800     v = PyFloat_FromDouble(U_NUCLEAR_MAGNETON_IN_EV_T);
01801     PyDict_SetItemString(d, "U_NUCLEAR_MAGNETON_IN_EV_T", v);
01802     Py_INCREF(v);
01803
01804     v = PyFloat_FromDouble(NUCLEAR_MAGNETON_IN_INVERSE_METER_PER_TESLA);
01805     PyDict_SetItemString(d, "NUCLEAR_MAGNETON_IN_INVERSE_METER_PER_TESLA", v);
01806     Py_INCREF(v);
01807     v = PyFloat_FromDouble(U_NUCLEAR_MAGNETON_IN_INVERSE_METER_PER_TESLA);
01808     PyDict_SetItemString(d, "U_NUCLEAR_MAGNETON_IN_INVERSE_METER_PER_TESLA", v);
01809     Py_INCREF(v);
01810
01811     v = PyFloat_FromDouble(NUCLEAR_MAGNETON_IN_K_T);
01812     PyDict_SetItemString(d, "NUCLEAR_MAGNETON_IN_K_T", v);
01813     Py_INCREF(v);
01814     v = PyFloat_FromDouble(U_NUCLEAR_MAGNETON_IN_K_T);
01815     PyDict_SetItemString(d, "U_NUCLEAR_MAGNETON_IN_K_T", v);
01816     Py_INCREF(v);
01817
01818     v = PyFloat_FromDouble(NUCLEAR_MAGNETON_IN_MHZ_T);
01819     PyDict_SetItemString(d, "NUCLEAR_MAGNETON_IN_MHZ_T", v);
01820     Py_INCREF(v);
01821     v = PyFloat_FromDouble(U_NUCLEAR_MAGNETON_IN_MHZ_T);
01822     PyDict_SetItemString(d, "U_NUCLEAR_MAGNETON_IN_MHZ_T", v);
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01823     Py_INCREF(v);
01824
01825     v = PyFloat_FromDouble(PLANCK_CONSTANT);
01826     PyDict_SetItemString(d, "PLANCK_CONSTANT", v);
01827     Py_INCREF(v);
01828     v = PyFloat_FromDouble(U_PLANCK_CONSTANT);
01829     PyDict_SetItemString(d, "U_PLANCK_CONSTANT", v);
01830     Py_INCREF(v);
01831
01832     v = PyFloat_FromDouble(PLANCK_CONSTANT_IN_EV_HZ);
01833     PyDict_SetItemString(d, "PLANCK_CONSTANT_IN_EV_HZ", v);
01834     Py_INCREF(v);
01835     v = PyFloat_FromDouble(U_PLANCK_CONSTANT_IN_EV_HZ);
01836     PyDict_SetItemString(d, "U_PLANCK_CONSTANT_IN_EV_HZ", v);
01837     Py_INCREF(v);
01838
01839     v = PyFloat_FromDouble(PLANCK_LENGTH);
01840     PyDict_SetItemString(d, "PLANCK_LENGTH", v);
01841     Py_INCREF(v);
01842     v = PyFloat_FromDouble(U_PLANCK_LENGTH);
01843     PyDict_SetItemString(d, "U_PLANCK_LENGTH", v);
01844     Py_INCREF(v);
01845
01846     v = PyFloat_FromDouble(PLANCK_MASS);
01847     PyDict_SetItemString(d, "PLANCK_MASS", v);
01848     Py_INCREF(v);
01849     v = PyFloat_FromDouble(U_PLANCK_MASS);
01850     PyDict_SetItemString(d, "U_PLANCK_MASS", v);
01851     Py_INCREF(v);
01852
01853     v = PyFloat_FromDouble(PLANCK_MASS_ENERGY_EQUIVALENT_IN_GEV);
01854     PyDict_SetItemString(d, "PLANCK_MASS_ENERGY_EQUIVALENT_IN_GEV", v);
01855     Py_INCREF(v);
01856     v = PyFloat_FromDouble(U_PLANCK_MASS_ENERGY_EQUIVALENT_IN_GEV);
01857     PyDict_SetItemString(d, "U_PLANCK_MASS_ENERGY_EQUIVALENT_IN_GEV", v);
01858     Py_INCREF(v);
01859
01860     v = PyFloat_FromDouble(PLANCK_TEMPERATURE);
01861     PyDict_SetItemString(d, "PLANCK_TEMPERATURE", v);
01862     Py_INCREF(v);
01863     v = PyFloat_FromDouble(U_PLANCK_TEMPERATURE);
01864     PyDict_SetItemString(d, "U_PLANCK_TEMPERATURE", v);
01865     Py_INCREF(v);
01866
01867     v = PyFloat_FromDouble(PLANCK_TIME);
01868     PyDict_SetItemString(d, "PLANCK_TIME", v);
01869     Py_INCREF(v);
01870     v = PyFloat_FromDouble(U_PLANCK_TIME);
01871     PyDict_SetItemString(d, "U_PLANCK_TIME", v);
01872     Py_INCREF(v);
01873
01874     v = PyFloat_FromDouble(PROTON_CHARGE_TO_MASS_QUOTIENT);
01875     PyDict_SetItemString(d, "PROTON_CHARGE_TO_MASS_QUOTIENT", v);
01876     Py_INCREF(v);
01877     v = PyFloat_FromDouble(U_PROTON_CHARGE_TO_MASS_QUOTIENT);
01878     PyDict_SetItemString(d, "U_PROTON_CHARGE_TO_MASS_QUOTIENT", v);
01879     Py_INCREF(v);
01880
01881     v = PyFloat_FromDouble(PROTON_COMPTON_WAVELENGTH);
01882     PyDict_SetItemString(d, "PROTON_COMPTON_WAVELENGTH", v);
01883     Py_INCREF(v);
01884     v = PyFloat_FromDouble(U_PROTON_COMPTON_WAVELENGTH);
01885     PyDict_SetItemString(d, "U_PROTON_COMPTON_WAVELENGTH", v);
01886     Py_INCREF(v);
01887
01888     v = PyFloat_FromDouble(PROTON_ELECTRON_MASS_RATIO);
01889     PyDict_SetItemString(d, "PROTON_ELECTRON_MASS_RATIO", v);
01890     Py_INCREF(v);
01891     v = PyFloat_FromDouble(U_PROTON_ELECTRON_MASS_RATIO);
01892     PyDict_SetItemString(d, "U_PROTON_ELECTRON_MASS_RATIO", v);
01893     Py_INCREF(v);
01894
01895     v = PyFloat_FromDouble(PROTON_G_FACTOR);
01896     PyDict_SetItemString(d, "PROTON_G_FACTOR", v);
01897     Py_INCREF(v);
01898     v = PyFloat_FromDouble(U_PROTON_G_FACTOR);
01899     PyDict_SetItemString(d, "U_PROTON_G_FACTOR", v);
01900     Py_INCREF(v);
01901
01902     v = PyFloat_FromDouble(PROTON_GYROMAG_RATIO);
01903     PyDict_SetItemString(d, "PROTON_GYROMAG_RATIO", v);
01904     Py_INCREF(v);
01905     v = PyFloat_FromDouble(U_PROTON_GYROMAG_RATIO);
01906     PyDict_SetItemString(d, "U_PROTON_GYROMAG_RATIO", v);
01907     Py_INCREF(v);
01908
01909     v = PyFloat_FromDouble(PROTON_GYROMAG_RATIO_IN_MHZ_T);

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01910 PyDict_SetItemString(d, "PROTON_GYROMAG__RATIO_IN_MHZ_T", v);
01911 Py_INCREF(v);
01912 v = PyFloat_FromDouble(U_PROTON_GYROMAG__RATIO_IN_MHZ_T);
01913 PyDict_SetItemString(d, "U_PROTON_GYROMAG__RATIO_IN_MHZ_T", v);
01914 Py_INCREF(v);
01915
01916 v = PyFloat_FromDouble(PROTON_MAG__MOM);
01917 PyDict_SetItemString(d, "PROTON_MAG__MOM", v);
01918 Py_INCREF(v);
01919 v = PyFloat_FromDouble(U_PROTON_MAG__MOM);
01920 PyDict_SetItemString(d, "U_PROTON_MAG__MOM", v);
01921 Py_INCREF(v);
01922
01923 v = PyFloat_FromDouble(PROTON_MAG__MOM__TO_BOHR_MAGNETON_RATIO);
01924 PyDict_SetItemString(d, "PROTON_MAG__MOM__TO_BOHR_MAGNETON_RATIO", v);
01925 Py_INCREF(v);
01926 v = PyFloat_FromDouble(U_PROTON_MAG__MOM__TO_BOHR_MAGNETON_RATIO);
01927 PyDict_SetItemString(d, "U_PROTON_MAG__MOM__TO_BOHR_MAGNETON_RATIO", v);
01928 Py_INCREF(v);
01929
01930 v = PyFloat_FromDouble(PROTON_MAG__MOM__TO_NUCLEAR_MAGNETON_RATIO);
01931 PyDict_SetItemString(d, "PROTON_MAG__MOM__TO_NUCLEAR_MAGNETON_RATIO", v);
01932 Py_INCREF(v);
01933 v = PyFloat_FromDouble(U_PROTON_MAG__MOM__TO_NUCLEAR_MAGNETON_RATIO);
01934 PyDict_SetItemString(d, "U_PROTON_MAG__MOM__TO_NUCLEAR_MAGNETON_RATIO", v);
01935 Py_INCREF(v);
01936
01937 v = PyFloat_FromDouble(PROTON_MAG__SHIELDING_CORRECTION);
01938 PyDict_SetItemString(d, "PROTON_MAG__SHIELDING_CORRECTION", v);
01939 Py_INCREF(v);
01940 v = PyFloat_FromDouble(U_PROTON_MAG__SHIELDING_CORRECTION);
01941 PyDict_SetItemString(d, "U_PROTON_MAG__SHIELDING_CORRECTION", v);
01942 Py_INCREF(v);
01943
01944 v = PyFloat_FromDouble(PROTON_MASS);
01945 PyDict_SetItemString(d, "PROTON_MASS", v);
01946 Py_INCREF(v);
01947 v = PyFloat_FromDouble(U_PROTON_MASS);
01948 PyDict_SetItemString(d, "U_PROTON_MASS", v);
01949 Py_INCREF(v);
01950
01951 v = PyFloat_FromDouble(PROTON_MASS_ENERGY_EQUIVALENT);
01952 PyDict_SetItemString(d, "PROTON_MASS_ENERGY_EQUIVALENT", v);
01953 Py_INCREF(v);
01954 v = PyFloat_FromDouble(U_PROTON_MASS_ENERGY_EQUIVALENT);
01955 PyDict_SetItemString(d, "U_PROTON_MASS_ENERGY_EQUIVALENT", v);
01956 Py_INCREF(v);
01957
01958 v = PyFloat_FromDouble(PROTON_MASS_ENERGY_EQUIVALENT_IN_MEV);
01959 PyDict_SetItemString(d, "PROTON_MASS_ENERGY_EQUIVALENT_IN_MEV", v);
01960 Py_INCREF(v);
01961 v = PyFloat_FromDouble(U_PROTON_MASS_ENERGY_EQUIVALENT_IN_MEV);
01962 PyDict_SetItemString(d, "U_PROTON_MASS_ENERGY_EQUIVALENT_IN_MEV", v);
01963 Py_INCREF(v);
01964
01965 v = PyFloat_FromDouble(PROTON_MASS_IN_U);
01966 PyDict_SetItemString(d, "PROTON_MASS_IN_U", v);
01967 Py_INCREF(v);
01968 v = PyFloat_FromDouble(U_PROTON_MASS_IN_U);
01969 PyDict_SetItemString(d, "U_PROTON_MASS_IN_U", v);
01970 Py_INCREF(v);
01971
01972 v = PyFloat_FromDouble(PROTON_MOLAR_MASS);
01973 PyDict_SetItemString(d, "PROTON_MOLAR_MASS", v);
01974 Py_INCREF(v);
01975 v = PyFloat_FromDouble(U_PROTON_MOLAR_MASS);
01976 PyDict_SetItemString(d, "U_PROTON_MOLAR_MASS", v);
01977 Py_INCREF(v);
01978
01979 v = PyFloat_FromDouble(PROTON_MUON_MASS_RATIO);
01980 PyDict_SetItemString(d, "PROTON_MUON_MASS_RATIO", v);
01981 Py_INCREF(v);
01982 v = PyFloat_FromDouble(U_PROTON_MUON_MASS_RATIO);
01983 PyDict_SetItemString(d, "U_PROTON_MUON_MASS_RATIO", v);
01984 Py_INCREF(v);
01985
01986 v = PyFloat_FromDouble(PROTON_NEUTRON_MAG__MOM__RATIO);
01987 PyDict_SetItemString(d, "PROTON_NEUTRON_MAG__MOM__RATIO", v);
01988 Py_INCREF(v);
01989 v = PyFloat_FromDouble(U_PROTON_NEUTRON_MAG__MOM__RATIO);
01990 PyDict_SetItemString(d, "U_PROTON_NEUTRON_MAG__MOM__RATIO", v);
01991 Py_INCREF(v);
01992
01993 v = PyFloat_FromDouble(PROTON_NEUTRON_MASS_RATIO);
01994 PyDict_SetItemString(d, "PROTON_NEUTRON_MASS_RATIO", v);
01995 Py_INCREF(v);
01996 v = PyFloat_FromDouble(U_PROTON_NEUTRON_MASS_RATIO);
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01997     PyDict_SetItemString(d, "U_PROTON_NEUTRON_MASS_RATIO", v);
01998     Py_INCREF(v);
01999
02000     v = PyFloat_FromDouble(PROTON_RELATIVE_ATOMIC_MASS);
02001     PyDict_SetItemString(d, "PROTON_RELATIVE_ATOMIC_MASS", v);
02002     Py_INCREF(v);
02003     v = PyFloat_FromDouble(U_PROTON_RELATIVE_ATOMIC_MASS);
02004     PyDict_SetItemString(d, "U_PROTON_RELATIVE_ATOMIC_MASS", v);
02005     Py_INCREF(v);
02006
02007     v = PyFloat_FromDouble(PROTON_RMS_CHARGE_RADIUS);
02008     PyDict_SetItemString(d, "PROTON_RMS_CHARGE_RADIUS", v);
02009     Py_INCREF(v);
02010     v = PyFloat_FromDouble(U_PROTON_RMS_CHARGE_RADIUS);
02011     PyDict_SetItemString(d, "U_PROTON_RMS_CHARGE_RADIUS", v);
02012     Py_INCREF(v);
02013
02014     v = PyFloat_FromDouble(PROTON_TAU_MASS_RATIO);
02015     PyDict_SetItemString(d, "PROTON_TAU_MASS_RATIO", v);
02016     Py_INCREF(v);
02017     v = PyFloat_FromDouble(U_PROTON_TAU_MASS_RATIO);
02018     PyDict_SetItemString(d, "U_PROTON_TAU_MASS_RATIO", v);
02019     Py_INCREF(v);
02020
02021     v = PyFloat_FromDouble(QUANTUM_OF_CIRCULATION);
02022     PyDict_SetItemString(d, "QUANTUM_OF_CIRCULATION", v);
02023     Py_INCREF(v);
02024     v = PyFloat_FromDouble(U_QUANTUM_OF_CIRCULATION);
02025     PyDict_SetItemString(d, "U_QUANTUM_OF_CIRCULATION", v);
02026     Py_INCREF(v);
02027
02028     v = PyFloat_FromDouble(QUANTUM_OF_CIRCULATION_TIMES_2);
02029     PyDict_SetItemString(d, "QUANTUM_OF_CIRCULATION_TIMES_2", v);
02030     Py_INCREF(v);
02031     v = PyFloat_FromDouble(U_QUANTUM_OF_CIRCULATION_TIMES_2);
02032     PyDict_SetItemString(d, "U_QUANTUM_OF_CIRCULATION_TIMES_2", v);
02033     Py_INCREF(v);
02034
02035     v = PyFloat_FromDouble(REduced_COMPTON_WAVELENGTH);
02036     PyDict_SetItemString(d, "REDUCED_COMPTON_WAVELENGTH", v);
02037     Py_INCREF(v);
02038     v = PyFloat_FromDouble(U_REduced_COMPTON_WAVELENGTH);
02039     PyDict_SetItemString(d, "U_REduced_COMPTON_WAVELENGTH", v);
02040     Py_INCREF(v);
02041
02042     v = PyFloat_FromDouble(REduced_MUON_COMPTON_WAVELENGTH);
02043     PyDict_SetItemString(d, "REDUCED_MUON_COMPTON_WAVELENGTH", v);
02044     Py_INCREF(v);
02045     v = PyFloat_FromDouble(U_REduced_MUON_COMPTON_WAVELENGTH);
02046     PyDict_SetItemString(d, "U_REduced_MUON_COMPTON_WAVELENGTH", v);
02047     Py_INCREF(v);
02048
02049     v = PyFloat_FromDouble(REduced_NEUTRON_COMPTON_WAVELENGTH);
02050     PyDict_SetItemString(d, "REDUCED_NEUTRON_COMPTON_WAVELENGTH", v);
02051     Py_INCREF(v);
02052     v = PyFloat_FromDouble(U_REduced_NEUTRON_COMPTON_WAVELENGTH);
02053     PyDict_SetItemString(d, "U_REduced_NEUTRON_COMPTON_WAVELENGTH", v);
02054     Py_INCREF(v);
02055
02056     v = PyFloat_FromDouble(REduced_PLANCK_CONSTANT);
02057     PyDict_SetItemString(d, "REDUCED_PLANCK_CONSTANT", v);
02058     Py_INCREF(v);
02059     v = PyFloat_FromDouble(U_REduced_PLANCK_CONSTANT);
02060     PyDict_SetItemString(d, "U_REduced_PLANCK_CONSTANT", v);
02061     Py_INCREF(v);
02062
02063     v = PyFloat_FromDouble(REduced_PLANCK_CONSTANT_IN_EV_S);
02064     PyDict_SetItemString(d, "REDUCED_PLANCK_CONSTANT_IN_EV_S", v);
02065     Py_INCREF(v);
02066     v = PyFloat_FromDouble(U_REduced_PLANCK_CONSTANT_IN_EV_S);
02067     PyDict_SetItemString(d, "U_REduced_PLANCK_CONSTANT_IN_EV_S", v);
02068     Py_INCREF(v);
02069
02070     v = PyFloat_FromDouble(REduced_PLANCK_CONSTANT_TIMES_C_IN_MEV_FM);
02071     PyDict_SetItemString(d, "REDUCED_PLANCK_CONSTANT_TIMES_C_IN_MEV_FM", v);
02072     Py_INCREF(v);
02073     v = PyFloat_FromDouble(U_REduced_PLANCK_CONSTANT_TIMES_C_IN_MEV_FM);
02074     PyDict_SetItemString(d, "U_REduced_PLANCK_CONSTANT_TIMES_C_IN_MEV_FM", v);
02075     Py_INCREF(v);
02076
02077     v = PyFloat_FromDouble(REduced_PROTON_COMPTON_WAVELENGTH);
02078     PyDict_SetItemString(d, "REDUCED_PROTON_COMPTON_WAVELENGTH", v);
02079     Py_INCREF(v);
02080     v = PyFloat_FromDouble(U_REduced_PROTON_COMPTON_WAVELENGTH);
02081     PyDict_SetItemString(d, "U_REduced_PROTON_COMPTON_WAVELENGTH", v);
02082     Py_INCREF(v);
02083

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02084     v = PyFloat_FromDouble(REDUCED_TAU_COMPTON_WAVELENGTH);
02085     PyDict_SetItemString(d, "REDUCED_TAU_COMPTON_WAVELENGTH", v);
02086     Py_INCREF(v);
02087     v = PyFloat_FromDouble(U_REDUCED_TAU_COMPTON_WAVELENGTH);
02088     PyDict_SetItemString(d, "U_REDUCED_TAU_COMPTON_WAVELENGTH", v);
02089     Py_INCREF(v);
02090
02091     v = PyFloat_FromDouble(RYDBERG_CONSTANT);
02092     PyDict_SetItemString(d, "RYDBERG_CONSTANT", v);
02093     Py_INCREF(v);
02094     v = PyFloat_FromDouble(U_RYDBERG_CONSTANT);
02095     PyDict_SetItemString(d, "U_RYDBERG_CONSTANT", v);
02096     Py_INCREF(v);
02097
02098     v = PyFloat_FromDouble(RYDBERG_CONSTANT_TIMES_C_IN_HZ);
02099     PyDict_SetItemString(d, "RYDBERG_CONSTANT_TIMES_C_IN_HZ", v);
02100     Py_INCREF(v);
02101     v = PyFloat_FromDouble(U_RYDBERG_CONSTANT_TIMES_C_IN_HZ);
02102     PyDict_SetItemString(d, "U_RYDBERG_CONSTANT_TIMES_C_IN_HZ", v);
02103     Py_INCREF(v);
02104
02105     v = PyFloat_FromDouble(RYDBERG_CONSTANT_TIMES_HC_IN_EV);
02106     PyDict_SetItemString(d, "RYDBERG_CONSTANT_TIMES_HC_IN_EV", v);
02107     Py_INCREF(v);
02108     v = PyFloat_FromDouble(U_RYDBERG_CONSTANT_TIMES_HC_IN_EV);
02109     PyDict_SetItemString(d, "U_RYDBERG_CONSTANT_TIMES_HC_IN_EV", v);
02110     Py_INCREF(v);
02111
02112     v = PyFloat_FromDouble(RYDBERG_CONSTANT_TIMES_HC_IN_J);
02113     PyDict_SetItemString(d, "RYDBERG_CONSTANT_TIMES_HC_IN_J", v);
02114     Py_INCREF(v);
02115     v = PyFloat_FromDouble(U_RYDBERG_CONSTANT_TIMES_HC_IN_J);
02116     PyDict_SetItemString(d, "U_RYDBERG_CONSTANT_TIMES_HC_IN_J", v);
02117     Py_INCREF(v);
02118
02119     v = PyFloat_FromDouble(SACKUR_TETRODE_CONSTANT__1_K__100_KPA);
02120     PyDict_SetItemString(d, "SACKUR_TETRODE_CONSTANT__1_K__100_KPA", v);
02121     Py_INCREF(v);
02122     v = PyFloat_FromDouble(U_SACKUR_TETRODE_CONSTANT__1_K__100_KPA);
02123     PyDict_SetItemString(d, "U_SACKUR_TETRODE_CONSTANT__1_K__100_KPA", v);
02124     Py_INCREF(v);
02125
02126     v = PyFloat_FromDouble(SACKUR_TETRODE_CONSTANT__1_K__101_325_KPA);
02127     PyDict_SetItemString(d, "SACKUR_TETRODE_CONSTANT__1_K__101_325_KPA", v);
02128     Py_INCREF(v);
02129     v = PyFloat_FromDouble(U_SACKUR_TETRODE_CONSTANT__1_K__101_325_KPA);
02130     PyDict_SetItemString(d, "U_SACKUR_TETRODE_CONSTANT__1_K__101_325_KPA", v);
02131     Py_INCREF(v);
02132
02133     v = PyFloat_FromDouble(SECOND_RADIATION_CONSTANT);
02134     PyDict_SetItemString(d, "SECOND_RADIATION_CONSTANT", v);
02135     Py_INCREF(v);
02136     v = PyFloat_FromDouble(U_SECOND_RADIATION_CONSTANT);
02137     PyDict_SetItemString(d, "U_SECOND_RADIATION_CONSTANT", v);
02138     Py_INCREF(v);
02139
02140     v = PyFloat_FromDouble(SHIELDED_HELION_GYROMAG_RATIO);
02141     PyDict_SetItemString(d, "SHIELDED_HELION_GYROMAG_RATIO", v);
02142     Py_INCREF(v);
02143     v = PyFloat_FromDouble(U_SHIELDED_HELION_GYROMAG_RATIO);
02144     PyDict_SetItemString(d, "U_SHIELDED_HELION_GYROMAG_RATIO", v);
02145     Py_INCREF(v);
02146
02147     v = PyFloat_FromDouble(SHIELDED_HELION_GYROMAG_RATIO_IN_MHZ_T);
02148     PyDict_SetItemString(d, "SHIELDED_HELION_GYROMAG_RATIO_IN_MHZ_T", v);
02149     Py_INCREF(v);
02150     v = PyFloat_FromDouble(U_SHIELDED_HELION_GYROMAG_RATIO_IN_MHZ_T);
02151     PyDict_SetItemString(d, "U_SHIELDED_HELION_GYROMAG_RATIO_IN_MHZ_T", v);
02152     Py_INCREF(v);
02153
02154     v = PyFloat_FromDouble(SHIELDED_HELION_MAG_MOM);
02155     PyDict_SetItemString(d, "SHIELDED_HELION_MAG_MOM", v);
02156     Py_INCREF(v);
02157     v = PyFloat_FromDouble(U_SHIELDED_HELION_MAG_MOM);
02158     PyDict_SetItemString(d, "U_SHIELDED_HELION_MAG_MOM", v);
02159     Py_INCREF(v);
02160
02161     v = PyFloat_FromDouble(SHIELDED_HELION_MAG_MOM_TO_BOHR_MAGNETON_RATIO);
02162     PyDict_SetItemString(d, "SHIELDED_HELION_MAG_MOM_TO_BOHR_MAGNETON_RATIO", v);
02163     Py_INCREF(v);
02164     v = PyFloat_FromDouble(U_SHIELDED_HELION_MAG_MOM_TO_BOHR_MAGNETON_RATIO);
02165     PyDict_SetItemString(d, "U_SHIELDED_HELION_MAG_MOM_TO_BOHR_MAGNETON_RATIO", v);
02166     Py_INCREF(v);
02167
02168     v = PyFloat_FromDouble(SHIELDED_HELION_MAG_MOM_TO_NUCLEAR_MAGNETON_RATIO);
02169     PyDict_SetItemString(d, "SHIELDED_HELION_MAG_MOM_TO_NUCLEAR_MAGNETON_RATIO", v);
02170     Py_INCREF(v);

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02171     v = PyFloat_FromDouble(U_SHIELDED_HELION_MAG__MOM__TO_NUCLEAR_MAGNETON_RATIO);
02172     PyDict_SetItemString(d, "U_SHIELDED_HELION_MAG__MOM__TO_NUCLEAR_MAGNETON_RATIO", v);
02173     Py_INCREF(v);
02174
02175     v = PyFloat_FromDouble(SHIELDED_HELION_TO_PROTON_MAG__MOM__RATIO);
02176     PyDict_SetItemString(d, "SHIELDED_HELION_TO_PROTON_MAG__MOM__RATIO", v);
02177     Py_INCREF(v);
02178     v = PyFloat_FromDouble(U_SHIELDED_HELION_TO_PROTON_MAG__MOM__RATIO);
02179     PyDict_SetItemString(d, "U_SHIELDED_HELION_TO_PROTON_MAG__MOM__RATIO", v);
02180     Py_INCREF(v);
02181
02182     v = PyFloat_FromDouble(SHIELDED_HELION_TO_SHIELDED_PROTON_MAG__MOM__RATIO);
02183     PyDict_SetItemString(d, "SHIELDED_HELION_TO_SHIELDED_PROTON_MAG__MOM__RATIO", v);
02184     Py_INCREF(v);
02185     v = PyFloat_FromDouble(U_SHIELDED_HELION_TO_SHIELDED_PROTON_MAG__MOM__RATIO);
02186     PyDict_SetItemString(d, "U_SHIELDED_HELION_TO_SHIELDED_PROTON_MAG__MOM__RATIO", v);
02187     Py_INCREF(v);
02188
02189     v = PyFloat_FromDouble(SHIELDED_PROTON_GYROMAG__RATIO);
02190     PyDict_SetItemString(d, "SHIELDED_PROTON_GYROMAG__RATIO", v);
02191     Py_INCREF(v);
02192     v = PyFloat_FromDouble(U_SHIELDED_PROTON_GYROMAG__RATIO);
02193     PyDict_SetItemString(d, "U_SHIELDED_PROTON_GYROMAG__RATIO", v);
02194     Py_INCREF(v);
02195
02196     v = PyFloat_FromDouble(SHIELDED_PROTON_GYROMAG__RATIO_IN_MHZ_T);
02197     PyDict_SetItemString(d, "SHIELDED_PROTON_GYROMAG__RATIO_IN_MHZ_T", v);
02198     Py_INCREF(v);
02199     v = PyFloat_FromDouble(U_SHIELDED_PROTON_GYROMAG__RATIO_IN_MHZ_T);
02200     PyDict_SetItemString(d, "U_SHIELDED_PROTON_GYROMAG__RATIO_IN_MHZ_T", v);
02201     Py_INCREF(v);
02202
02203     v = PyFloat_FromDouble(SHIELDED_PROTON_MAG__MOM);
02204     PyDict_SetItemString(d, "SHIELDED_PROTON_MAG__MOM", v);
02205     Py_INCREF(v);
02206     v = PyFloat_FromDouble(U_SHIELDED_PROTON_MAG__MOM);
02207     PyDict_SetItemString(d, "U_SHIELDED_PROTON_MAG__MOM", v);
02208     Py_INCREF(v);
02209
02210     v = PyFloat_FromDouble(SHIELDED_PROTON_MAG__MOM__TO_BOHR_MAGNETON_RATIO);
02211     PyDict_SetItemString(d, "SHIELDED_PROTON_MAG__MOM__TO_BOHR_MAGNETON_RATIO", v);
02212     Py_INCREF(v);
02213     v = PyFloat_FromDouble(U_SHIELDED_PROTON_MAG__MOM__TO_BOHR_MAGNETON_RATIO);
02214     PyDict_SetItemString(d, "U_SHIELDED_PROTON_MAG__MOM__TO_BOHR_MAGNETON_RATIO", v);
02215     Py_INCREF(v);
02216
02217     v = PyFloat_FromDouble(SHIELDED_PROTON_MAG__MOM__TO_NUCLEAR_MAGNETON_RATIO);
02218     PyDict_SetItemString(d, "SHIELDED_PROTON_MAG__MOM__TO_NUCLEAR_MAGNETON_RATIO", v);
02219     Py_INCREF(v);
02220     v = PyFloat_FromDouble(U_SHIELDED_PROTON_MAG__MOM__TO_NUCLEAR_MAGNETON_RATIO);
02221     PyDict_SetItemString(d, "U_SHIELDED_PROTON_MAG__MOM__TO_NUCLEAR_MAGNETON_RATIO", v);
02222     Py_INCREF(v);
02223
02224     v = PyFloat_FromDouble(SHIELDING_DIFFERENCE_OF_D_AND_P_IN_HD);
02225     PyDict_SetItemString(d, "SHIELDING_DIFFERENCE_OF_D_AND_P_IN_HD", v);
02226     Py_INCREF(v);
02227     v = PyFloat_FromDouble(U_SHIELDING_DIFFERENCE_OF_D_AND_P_IN_HD);
02228     PyDict_SetItemString(d, "U_SHIELDING_DIFFERENCE_OF_D_AND_P_IN_HD", v);
02229     Py_INCREF(v);
02230
02231     v = PyFloat_FromDouble(SHIELDING_DIFFERENCE_OF_T_AND_P_IN_HT);
02232     PyDict_SetItemString(d, "SHIELDING_DIFFERENCE_OF_T_AND_P_IN_HT", v);
02233     Py_INCREF(v);
02234     v = PyFloat_FromDouble(U_SHIELDING_DIFFERENCE_OF_T_AND_P_IN_HT);
02235     PyDict_SetItemString(d, "U_SHIELDING_DIFFERENCE_OF_T_AND_P_IN_HT", v);
02236     Py_INCREF(v);
02237
02238     v = PyFloat_FromDouble(SPEED_OF_LIGHT_IN_VACUUM);
02239     PyDict_SetItemString(d, "SPEED_OF_LIGHT_IN_VACUUM", v);
02240     Py_INCREF(v);
02241     v = PyFloat_FromDouble(U_SPEED_OF_LIGHT_IN_VACUUM);
02242     PyDict_SetItemString(d, "U_SPEED_OF_LIGHT_IN_VACUUM", v);
02243     Py_INCREF(v);
02244
02245     v = PyFloat_FromDouble(STANDARD_ACCELERATION_OF_GRAVITY);
02246     PyDict_SetItemString(d, "STANDARD_ACCELERATION_OF_GRAVITY", v);
02247     Py_INCREF(v);
02248     v = PyFloat_FromDouble(U_STANDARD_ACCELERATION_OF_GRAVITY);
02249     PyDict_SetItemString(d, "U_STANDARD_ACCELERATION_OF_GRAVITY", v);
02250     Py_INCREF(v);
02251
02252     v = PyFloat_FromDouble(STANDARD_ATMOSPHERE);
02253     PyDict_SetItemString(d, "STANDARD_ATMOSPHERE", v);
02254     Py_INCREF(v);
02255     v = PyFloat_FromDouble(U_STANDARD_ATMOSPHERE);
02256     PyDict_SetItemString(d, "U_STANDARD_ATMOSPHERE", v);
02257     Py_INCREF(v);

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02258
02259     v = PyFloat_FromDouble(STANDARD_STATE_PRESSURE);
02260     PyDict_SetItemString(d, "STANDARD_STATE_PRESSURE", v);
02261     Py_INCREF(v);
02262     v = PyFloat_FromDouble(U_STANDARD_STATE_PRESSURE);
02263     PyDict_SetItemString(d, "U_STANDARD_STATE_PRESSURE", v);
02264     Py_INCREF(v);
02265
02266     v = PyFloat_FromDouble(STEFAN_BOLTZMANN_CONSTANT);
02267     PyDict_SetItemString(d, "STEFAN_BOLTZMANN_CONSTANT", v);
02268     Py_INCREF(v);
02269     v = PyFloat_FromDouble(U_STEFAN_BOLTZMANN_CONSTANT);
02270     PyDict_SetItemString(d, "U_STEFAN_BOLTZMANN_CONSTANT", v);
02271     Py_INCREF(v);
02272
02273     v = PyFloat_FromDouble(TAU_COMPTON_WAVELENGTH);
02274     PyDict_SetItemString(d, "TAU_COMPTON_WAVELENGTH", v);
02275     Py_INCREF(v);
02276     v = PyFloat_FromDouble(U_TAU_COMPTON_WAVELENGTH);
02277     PyDict_SetItemString(d, "U_TAU_COMPTON_WAVELENGTH", v);
02278     Py_INCREF(v);
02279
02280     v = PyFloat_FromDouble(TAU_ELECTRON_MASS_RATIO);
02281     PyDict_SetItemString(d, "TAU_ELECTRON_MASS_RATIO", v);
02282     Py_INCREF(v);
02283     v = PyFloat_FromDouble(U_TAU_ELECTRON_MASS_RATIO);
02284     PyDict_SetItemString(d, "U_TAU_ELECTRON_MASS_RATIO", v);
02285     Py_INCREF(v);
02286
02287     v = PyFloat_FromDouble(TAU_ENERGY_EQUIVALENT);
02288     PyDict_SetItemString(d, "TAU_ENERGY_EQUIVALENT", v);
02289     Py_INCREF(v);
02290     v = PyFloat_FromDouble(U_TAU_ENERGY_EQUIVALENT);
02291     PyDict_SetItemString(d, "U_TAU_ENERGY_EQUIVALENT", v);
02292     Py_INCREF(v);
02293
02294     v = PyFloat_FromDouble(TAU_MASS);
02295     PyDict_SetItemString(d, "TAU_MASS", v);
02296     Py_INCREF(v);
02297     v = PyFloat_FromDouble(U_TAU_MASS);
02298     PyDict_SetItemString(d, "U_TAU_MASS", v);
02299     Py_INCREF(v);
02300
02301     v = PyFloat_FromDouble(TAU_MASS_ENERGY_EQUIVALENT);
02302     PyDict_SetItemString(d, "TAU_MASS_ENERGY_EQUIVALENT", v);
02303     Py_INCREF(v);
02304     v = PyFloat_FromDouble(U_TAU_MASS_ENERGY_EQUIVALENT);
02305     PyDict_SetItemString(d, "U_TAU_MASS_ENERGY_EQUIVALENT", v);
02306     Py_INCREF(v);
02307
02308     v = PyFloat_FromDouble(TAU_MASS_IN_U);
02309     PyDict_SetItemString(d, "TAU_MASS_IN_U", v);
02310     Py_INCREF(v);
02311     v = PyFloat_FromDouble(U_TAU_MASS_IN_U);
02312     PyDict_SetItemString(d, "U_TAU_MASS_IN_U", v);
02313     Py_INCREF(v);
02314
02315     v = PyFloat_FromDouble(TAU_MOLAR_MASS);
02316     PyDict_SetItemString(d, "TAU_MOLAR_MASS", v);
02317     Py_INCREF(v);
02318     v = PyFloat_FromDouble(U_TAU_MOLAR_MASS);
02319     PyDict_SetItemString(d, "U_TAU_MOLAR_MASS", v);
02320     Py_INCREF(v);
02321
02322     v = PyFloat_FromDouble(TAU_MUON_MASS_RATIO);
02323     PyDict_SetItemString(d, "TAU_MUON_MASS_RATIO", v);
02324     Py_INCREF(v);
02325     v = PyFloat_FromDouble(U_TAU_MUON_MASS_RATIO);
02326     PyDict_SetItemString(d, "U_TAU_MUON_MASS_RATIO", v);
02327     Py_INCREF(v);
02328
02329     v = PyFloat_FromDouble(TAU_NEUTRON_MASS_RATIO);
02330     PyDict_SetItemString(d, "TAU_NEUTRON_MASS_RATIO", v);
02331     Py_INCREF(v);
02332     v = PyFloat_FromDouble(U_TAU_NEUTRON_MASS_RATIO);
02333     PyDict_SetItemString(d, "U_TAU_NEUTRON_MASS_RATIO", v);
02334     Py_INCREF(v);
02335
02336     v = PyFloat_FromDouble(TAU_PROTON_MASS_RATIO);
02337     PyDict_SetItemString(d, "TAU_PROTON_MASS_RATIO", v);
02338     Py_INCREF(v);
02339     v = PyFloat_FromDouble(U_TAU_PROTON_MASS_RATIO);
02340     PyDict_SetItemString(d, "U_TAU_PROTON_MASS_RATIO", v);
02341     Py_INCREF(v);
02342
02343     v = PyFloat_FromDouble(THOMSON_CROSS_SECTION);
02344     PyDict_SetItemString(d, "THOMSON_CROSS_SECTION", v);
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02345     Py_INCREF(v);
02346     v = PyFloat_FromDouble(U_THOMSON_CROSS_SECTION);
02347     PyDict_SetItemString(d, "U_THOMSON_CROSS_SECTION", v);
02348     Py_INCREF(v);
02349
02350     v = PyFloat_FromDouble(TRITON_ELECTRON_MASS_RATIO);
02351     PyDict_SetItemString(d, "TRITON_ELECTRON_MASS_RATIO", v);
02352     Py_INCREF(v);
02353     v = PyFloat_FromDouble(U_TRITON_ELECTRON_MASS_RATIO);
02354     PyDict_SetItemString(d, "U_TRITON_ELECTRON_MASS_RATIO", v);
02355     Py_INCREF(v);
02356
02357     v = PyFloat_FromDouble(TRITON_G_FACTOR);
02358     PyDict_SetItemString(d, "TRITON_G_FACTOR", v);
02359     Py_INCREF(v);
02360     v = PyFloat_FromDouble(U_TRITON_G_FACTOR);
02361     PyDict_SetItemString(d, "U_TRITON_G_FACTOR", v);
02362     Py_INCREF(v);
02363
02364     v = PyFloat_FromDouble(TRITON_MAG__MOM);
02365     PyDict_SetItemString(d, "TRITON_MAG__MOM", v);
02366     Py_INCREF(v);
02367     v = PyFloat_FromDouble(U_TRITON_MAG__MOM);
02368     PyDict_SetItemString(d, "U_TRITON_MAG__MOM", v);
02369     Py_INCREF(v);
02370
02371     v = PyFloat_FromDouble(TRITON_MAG__MOM__TO_BOHR_MAGNETON_RATIO);
02372     PyDict_SetItemString(d, "TRITON_MAG__MOM__TO_BOHR_MAGNETON_RATIO", v);
02373     Py_INCREF(v);
02374     v = PyFloat_FromDouble(U_TRITON_MAG__MOM__TO_BOHR_MAGNETON_RATIO);
02375     PyDict_SetItemString(d, "U_TRITON_MAG__MOM__TO_BOHR_MAGNETON_RATIO", v);
02376     Py_INCREF(v);
02377
02378     v = PyFloat_FromDouble(TRITON_MAG__MOM__TO_NUCLEAR_MAGNETON_RATIO);
02379     PyDict_SetItemString(d, "TRITON_MAG__MOM__TO_NUCLEAR_MAGNETON_RATIO", v);
02380     Py_INCREF(v);
02381     v = PyFloat_FromDouble(U_TRITON_MAG__MOM__TO_NUCLEAR_MAGNETON_RATIO);
02382     PyDict_SetItemString(d, "U_TRITON_MAG__MOM__TO_NUCLEAR_MAGNETON_RATIO", v);
02383     Py_INCREF(v);
02384
02385     v = PyFloat_FromDouble(TRITON_MASS);
02386     PyDict_SetItemString(d, "TRITON_MASS", v);
02387     Py_INCREF(v);
02388     v = PyFloat_FromDouble(U_TRITON_MASS);
02389     PyDict_SetItemString(d, "U_TRITON_MASS", v);
02390     Py_INCREF(v);
02391
02392     v = PyFloat_FromDouble(TRITON_MASS_ENERGY_EQUIVALENT);
02393     PyDict_SetItemString(d, "TRITON_MASS_ENERGY_EQUIVALENT", v);
02394     Py_INCREF(v);
02395     v = PyFloat_FromDouble(U_TRITON_MASS_ENERGY_EQUIVALENT);
02396     PyDict_SetItemString(d, "U_TRITON_MASS_ENERGY_EQUIVALENT", v);
02397     Py_INCREF(v);
02398
02399     v = PyFloat_FromDouble(TRITON_MASS_ENERGY_EQUIVALENT_IN_MEV);
02400     PyDict_SetItemString(d, "TRITON_MASS_ENERGY_EQUIVALENT_IN_MEV", v);
02401     Py_INCREF(v);
02402     v = PyFloat_FromDouble(U_TRITON_MASS_ENERGY_EQUIVALENT_IN_MEV);
02403     PyDict_SetItemString(d, "U_TRITON_MASS_ENERGY_EQUIVALENT_IN_MEV", v);
02404     Py_INCREF(v);
02405
02406     v = PyFloat_FromDouble(TRITON_MASS_IN_U);
02407     PyDict_SetItemString(d, "TRITON_MASS_IN_U", v);
02408     Py_INCREF(v);
02409     v = PyFloat_FromDouble(U_TRITON_MASS_IN_U);
02410     PyDict_SetItemString(d, "U_TRITON_MASS_IN_U", v);
02411     Py_INCREF(v);
02412
02413     v = PyFloat_FromDouble(TRITON_MOLAR_MASS);
02414     PyDict_SetItemString(d, "TRITON_MOLAR_MASS", v);
02415     Py_INCREF(v);
02416     v = PyFloat_FromDouble(U_TRITON_MOLAR_MASS);
02417     PyDict_SetItemString(d, "U_TRITON_MOLAR_MASS", v);
02418     Py_INCREF(v);
02419
02420     v = PyFloat_FromDouble(TRITON_PROTON_MASS_RATIO);
02421     PyDict_SetItemString(d, "TRITON_PROTON_MASS_RATIO", v);
02422     Py_INCREF(v);
02423     v = PyFloat_FromDouble(U_TRITON_PROTON_MASS_RATIO);
02424     PyDict_SetItemString(d, "U_TRITON_PROTON_MASS_RATIO", v);
02425     Py_INCREF(v);
02426
02427     v = PyFloat_FromDouble(TRITON_RELATIVE_ATOMIC_MASS);
02428     PyDict_SetItemString(d, "TRITON_RELATIVE_ATOMIC_MASS", v);
02429     Py_INCREF(v);
02430     v = PyFloat_FromDouble(U_TRITON_RELATIVE_ATOMIC_MASS);
02431     PyDict_SetItemString(d, "U_TRITON_RELATIVE_ATOMIC_MASS", v);

```

```

02432     Py_INCREF(v);
02433
02434     v = PyFloat_FromDouble(TRITON_TO_PROTON_MAG_MOM_RATIO);
02435     PyDict_SetItemString(d, "TRITON_TO_PROTON_MAG_MOM_RATIO", v);
02436     Py_INCREF(v);
02437     v = PyFloat_FromDouble(U_TRITON_TO_PROTON_MAG_MOM_RATIO);
02438     PyDict_SetItemString(d, "U_TRITON_TO_PROTON_MAG_MOM_RATIO", v);
02439     Py_INCREF(v);
02440
02441     v = PyFloat_FromDouble(UNIFIED_ATOMIC_MASS_UNIT);
02442     PyDict_SetItemString(d, "UNIFIED_ATOMIC_MASS_UNIT", v);
02443     Py_INCREF(v);
02444     v = PyFloat_FromDouble(U_UNIFIED_ATOMIC_MASS_UNIT);
02445     PyDict_SetItemString(d, "U_UNIFIED_ATOMIC_MASS_UNIT", v);
02446     Py_INCREF(v);
02447
02448     v = PyFloat_FromDouble(VACUUM_ELECTRIC_PERMITTIVITY);
02449     PyDict_SetItemString(d, "VACUUM_ELECTRIC_PERMITTIVITY", v);
02450     Py_INCREF(v);
02451     v = PyFloat_FromDouble(U_VACUUM_ELECTRIC_PERMITTIVITY);
02452     PyDict_SetItemString(d, "U_VACUUM_ELECTRIC_PERMITTIVITY", v);
02453     Py_INCREF(v);
02454
02455     v = PyFloat_FromDouble(VACUUM_MAG_PERMEABILITY);
02456     PyDict_SetItemString(d, "VACUUM_MAG_PERMEABILITY", v);
02457     Py_INCREF(v);
02458     v = PyFloat_FromDouble(U_VACUUM_MAG_PERMEABILITY);
02459     PyDict_SetItemString(d, "U_VACUUM_MAG_PERMEABILITY", v);
02460     Py_INCREF(v);
02461
02462     v = PyFloat_FromDouble(VON_KLITZING_CONSTANT);
02463     PyDict_SetItemString(d, "VON_KLITZING_CONSTANT", v);
02464     Py_INCREF(v);
02465     v = PyFloat_FromDouble(U_VON_KLITZING_CONSTANT);
02466     PyDict_SetItemString(d, "U_VON_KLITZING_CONSTANT", v);
02467     Py_INCREF(v);
02468
02469     v = PyFloat_FromDouble(WEAK_MIXING_ANGLE);
02470     PyDict_SetItemString(d, "WEAK_MIXING_ANGLE", v);
02471     Py_INCREF(v);
02472     v = PyFloat_FromDouble(U_WEAK_MIXING_ANGLE);
02473     PyDict_SetItemString(d, "U_WEAK_MIXING_ANGLE", v);
02474     Py_INCREF(v);
02475
02476     v = PyFloat_FromDouble(WIEN_FREQUENCY_DISPLACEMENT_LAW_CONSTANT);
02477     PyDict_SetItemString(d, "WIEN_FREQUENCY_DISPLACEMENT_LAW_CONSTANT", v);
02478     Py_INCREF(v);
02479     v = PyFloat_FromDouble(U_WIEN_FREQUENCY_DISPLACEMENT_LAW_CONSTANT);
02480     PyDict_SetItemString(d, "U_WIEN_FREQUENCY_DISPLACEMENT_LAW_CONSTANT", v);
02481     Py_INCREF(v);
02482
02483     v = PyFloat_FromDouble(WIEN_WAVELENGTH_DISPLACEMENT_LAW_CONSTANT);
02484     PyDict_SetItemString(d, "WIEN_WAVELENGTH_DISPLACEMENT_LAW_CONSTANT", v);
02485     Py_INCREF(v);
02486     v = PyFloat_FromDouble(U_WIEN_WAVELENGTH_DISPLACEMENT_LAW_CONSTANT);
02487     PyDict_SetItemString(d, "U_WIEN_WAVELENGTH_DISPLACEMENT_LAW_CONSTANT", v);
02488     Py_INCREF(v);
02489
02490     v = PyFloat_FromDouble(W_TO_Z_MASS_RATIO);
02491     PyDict_SetItemString(d, "W_TO_Z_MASS_RATIO", v);
02492     Py_INCREF(v);
02493     v = PyFloat_FromDouble(U_W_TO_Z_MASS_RATIO);
02494     PyDict_SetItemString(d, "U_W_TO_Z_MASS_RATIO", v);
02495     Py_INCREF(v);
02496
02497     return m;
02498 }

```

## 17.16 /Users/milan/programs/codata/src/fcodata.f90 File Reference

Codata module - autogenerated.

### Modules

- module `codata`

*Codata constants - autogenerated.*

## Variables

- real(real64), parameter `codata::alpha_particle_electron_mass_ratio` =7294.29954142d0
- real(real64), parameter `codata::u_alpha_particle_electron_mass_ratio` =0.00000024d0
- real(real64), parameter `codata::alpha_particle_mass` =6.6446573357d-27  
*kg*
- real(real64), parameter `codata::u_alpha_particle_mass` =0.000000020d-27  
*kg*
- real(real64), parameter `codata::alpha_particle_mass_energy_equivalent` =5.9719201914d-10  
*J.*
- real(real64), parameter `codata::u_alpha_particle_mass_energy_equivalent` =0.000000018d-10  
*J.*
- real(real64), parameter `codata::alpha_particle_mass_energy_equivalent_in_mev` =3727.3794066d0  
*MeV.*
- real(real64), parameter `codata::u_alpha_particle_mass_energy_equivalent_in_mev` =0.0000011d0  
*MeV.*
- real(real64), parameter `codata::alpha_particle_mass_in_u` =4.001506179127d0  
*u*
- real(real64), parameter `codata::u_alpha_particle_mass_in_u` =0.00000000063d0  
*u*
- real(real64), parameter `codata::alpha_particle_molar_mass` =4.0015061777d-3  
*kg mol<sup>-1</sup>*
- real(real64), parameter `codata::u_alpha_particle_molar_mass` =0.0000000012d-3  
*kg mol<sup>-1</sup>*
- real(real64), parameter `codata::alpha_particle_proton_mass_ratio` =3.97259969009d0
- real(real64), parameter `codata::u_alpha_particle_proton_mass_ratio` =0.0000000022d0
- real(real64), parameter `codata::alpha_particle_relative_atomic_mass` =4.001506179127d0
- real(real64), parameter `codata::u_alpha_particle_relative_atomic_mass` =0.00000000063d0
- real(real64), parameter `codata::angstrom_star` =1.00001495d-10  
*m*
- real(real64), parameter `codata::u_angstrom_star` =0.00000090d-10  
*m*
- real(real64), parameter `codata::atomic_mass_constant` =1.66053906660d-27  
*kg*
- real(real64), parameter `codata::u_atomic_mass_constant` =0.00000000050d-27  
*kg*
- real(real64), parameter `codata::atomic_mass_constant_energy_equivalent` =1.49241808560d-10  
*J.*
- real(real64), parameter `codata::u_atomic_mass_constant_energy_equivalent` =0.0000000045d-10  
*J.*
- real(real64), parameter `codata::atomic_mass_constant_energy_equivalent_in_mev` =931.49410242d0  
*MeV.*
- real(real64), parameter `codata::u_atomic_mass_constant_energy_equivalent_in_mev` =0.00000028d0  
*MeV.*
- real(real64), parameter `codata::atomic_mass_unit_electron_volt_relationship` =9.3149410242d8  
*eV*
- real(real64), parameter `codata::u_atomic_mass_unit_electron_volt_relationship` =0.0000000028d8  
*eV*
- real(real64), parameter `codata::atomic_mass_unit_hartree_relationship` =3.4231776874d7  
*E<sub>h</sub>.*
- real(real64), parameter `codata::u_atomic_mass_unit_hartree_relationship` =0.0000000010d7



- $E_h$ .
- `real(real64)`, parameter `codata::atomic_mass_unit_hertz_relationship` =2.25234271871d23  
 $\text{Hz}$ .
- `real(real64)`, parameter `codata::u_atomic_mass_unit_hertz_relationship` =0.00000000068d23  
 $\text{Hz}$ .
- `real(real64)`, parameter `codata::atomic_mass_unit_inverse_meter_relationship` =7.5130066104d14  
 $\text{m}^{-1}$ .
- `real(real64)`, parameter `codata::u_atomic_mass_unit_inverse_meter_relationship` =0.0000000023d14  
 $\text{m}^{-1}$ .
- `real(real64)`, parameter `codata::atomic_mass_unit_joule_relationship` =1.49241808560d-10  
 $\text{J}$ .
- `real(real64)`, parameter `codata::u_atomic_mass_unit_joule_relationship` =0.0000000045d-10  
 $\text{J}$ .
- `real(real64)`, parameter `codata::atomic_mass_unit_kelvin_relationship` =1.08095401916d13  
 $\text{K}$ .
- `real(real64)`, parameter `codata::u_atomic_mass_unit_kelvin_relationship` =0.0000000033d13  
 $\text{K}$ .
- `real(real64)`, parameter `codata::atomic_mass_unit_kilogram_relationship` =1.66053906660d-27  
 $\text{kg}$ .
- `real(real64)`, parameter `codata::u_atomic_mass_unit_kilogram_relationship` =0.0000000050d-27  
 $\text{kg}$ .
- `real(real64)`, parameter `codata::atomic_unit_of_1st_hyperpolarizability` =3.2063613061d-53  
 $\text{C}^3 \text{m}^3 \text{J}^{-2}$ .
- `real(real64)`, parameter `codata::u_atomic_unit_of_1st_hyperpolarizability` =0.000000015d-53  
 $\text{C}^3 \text{m}^3 \text{J}^{-2}$ .
- `real(real64)`, parameter `codata::atomic_unit_of_2nd_hyperpolarizability` =6.2353799905d-65  
 $\text{C}^4 \text{m}^4 \text{J}^{-3}$ .
- `real(real64)`, parameter `codata::u_atomic_unit_of_2nd_hyperpolarizability` =0.000000038d-65  
 $\text{C}^4 \text{m}^4 \text{J}^{-3}$ .
- `real(real64)`, parameter `codata::atomic_unit_of_action` =1.054571817d-34  
 $\text{J s}$ .
- `real(real64)`, parameter `codata::u_atomic_unit_of_action` =0.0d0  
 $\text{J s}$ .
- `real(real64)`, parameter `codata::atomic_unit_of_charge` =1.602176634d-19  
 $\text{C}$ .
- `real(real64)`, parameter `codata::u_atomic_unit_of_charge` =0.0d0  
 $\text{C}$ .
- `real(real64)`, parameter `codata::atomic_unit_of_charge_density` =1.08120238457d12  
 $\text{C m}^{-3}$ .
- `real(real64)`, parameter `codata::u_atomic_unit_of_charge_density` =0.0000000049d12  
 $\text{C m}^{-3}$ .
- `real(real64)`, parameter `codata::atomic_unit_of_current` =6.623618237510d-3  
 $\text{A}$ .
- `real(real64)`, parameter `codata::u_atomic_unit_of_current` =0.00000000013d-3  
 $\text{A}$ .
- `real(real64)`, parameter `codata::atomic_unit_of_electric_dipole_mom` =8.4783536255d-30  
 $\text{C m}$ .
- `real(real64)`, parameter `codata::u_atomic_unit_of_electric_dipole_mom` =0.000000013d-30  
 $\text{C m}$ .
- `real(real64)`, parameter `codata::atomic_unit_of_electric_field` =5.14220674763d11  
 $\text{V m}^{-1}$ .



- real(real64), parameter [codata::u\\_atomic\\_unit\\_of\\_electric\\_field](#) =0.0000000078d11  
 $V\ m^{-1}$ .
- real(real64), parameter [codata::atomic\\_unit\\_of\\_electric\\_field\\_gradient](#) =9.7173624292d21  
 $V\ m^{-2}$ .
- real(real64), parameter [codata::u\\_atomic\\_unit\\_of\\_electric\\_field\\_gradient](#) =0.0000000029d21  
 $V\ m^{-2}$ .
- real(real64), parameter [codata::atomic\\_unit\\_of\\_electric\\_polarizability](#) =1.64877727436d-41  
 $C^2\ m^2\ J^{-1}$ .
- real(real64), parameter [codata::u\\_atomic\\_unit\\_of\\_electric\\_polarizability](#) =0.00000000050d-41  
 $C^2\ m^2\ J^{-1}$ .
- real(real64), parameter [codata::atomic\\_unit\\_of\\_electric\\_potential](#) =27.211386245988d0  
 $V$ .
- real(real64), parameter [codata::u\\_atomic\\_unit\\_of\\_electric\\_potential](#) =0.000000000053d0  
 $V$ .
- real(real64), parameter [codata::atomic\\_unit\\_of\\_electric\\_quadrupole\\_mom](#) =4.4865515246d-40  
 $C\ m^2$ .
- real(real64), parameter [codata::u\\_atomic\\_unit\\_of\\_electric\\_quadrupole\\_mom](#) =0.0000000014d-40  
 $C\ m^2$ .
- real(real64), parameter [codata::atomic\\_unit\\_of\\_energy](#) =4.3597447222071d-18  
 $J$ .
- real(real64), parameter [codata::u\\_atomic\\_unit\\_of\\_energy](#) =0.0000000000085d-18  
 $J$ .
- real(real64), parameter [codata::atomic\\_unit\\_of\\_force](#) =8.2387234983d-8  
 $N$ .
- real(real64), parameter [codata::u\\_atomic\\_unit\\_of\\_force](#) =0.0000000012d-8  
 $N$ .
- real(real64), parameter [codata::atomic\\_unit\\_of\\_length](#) =5.29177210903d-11  
 $m$ .
- real(real64), parameter [codata::u\\_atomic\\_unit\\_of\\_length](#) =0.00000000080d-11  
 $m$ .
- real(real64), parameter [codata::atomic\\_unit\\_of\\_mag\\_dipole\\_mom](#) =1.85480201566d-23  
 $J\ T^{-1}$ .
- real(real64), parameter [codata::u\\_atomic\\_unit\\_of\\_mag\\_dipole\\_mom](#) =0.00000000056d-23  
 $J\ T^{-1}$ .
- real(real64), parameter [codata::atomic\\_unit\\_of\\_mag\\_flux\\_density](#) =2.35051756758d5  
 $T$ .
- real(real64), parameter [codata::u\\_atomic\\_unit\\_of\\_mag\\_flux\\_density](#) =0.00000000071d5  
 $T$ .
- real(real64), parameter [codata::atomic\\_unit\\_of\\_magnetizability](#) =7.8910366008d-29  
 $J\ T^{-2}$ .
- real(real64), parameter [codata::u\\_atomic\\_unit\\_of\\_magnetizability](#) =0.0000000048d-29  
 $J\ T^{-2}$ .
- real(real64), parameter [codata::atomic\\_unit\\_of\\_mass](#) =9.1093837015d-31  
 $kg$ .
- real(real64), parameter [codata::u\\_atomic\\_unit\\_of\\_mass](#) =0.0000000028d-31  
 $kg$ .
- real(real64), parameter [codata::atomic\\_unit\\_of\\_momentum](#) =1.99285191410d-24  
 $kg\ m\ s^{-1}$ .
- real(real64), parameter [codata::u\\_atomic\\_unit\\_of\\_momentum](#) =0.00000000030d-24  
 $kg\ m\ s^{-1}$ .
- real(real64), parameter [codata::atomic\\_unit\\_of\\_permittivity](#) =1.11265005545d-10

- $F m^{-1}$ .
- real(real64), parameter `codata::u_atomic_unit_of_permittivity` =0.00000000017d-10
- $F m^{-1}$ .
- real(real64), parameter `codata::atomic_unit_of_time` =2.4188843265857d-17
- s
- real(real64), parameter `codata::u_atomic_unit_of_time` =0.0000000000047d-17
- s
- real(real64), parameter `codata::atomic_unit_of_velocity` =2.18769126364d6
- $m s^{-1}$
- real(real64), parameter `codata::u_atomic_unit_of_velocity` =0.00000000033d6
- $m s^{-1}$
- real(real64), parameter `codata::avogadro_constant` =6.02214076d23
- $mol^{-1}$
- real(real64), parameter `codata::u_avogadro_constant` =0.0d0
- $mol^{-1}$
- real(real64), parameter `codata::bohr_magneton` =9.2740100783d-24
- $J T^{-1}$ .
- real(real64), parameter `codata::u_bohr_magneton` =0.0000000028d-24
- $J T^{-1}$ .
- real(real64), parameter `codata::bohr_magneton_in_ev_t` =5.7883818060d-5
- $eV T^{-1}$
- real(real64), parameter `codata::u_bohr_magneton_in_ev_t` =0.0000000017d-5
- $eV T^{-1}$
- real(real64), parameter `codata::bohr_magneton_in_hz_t` =1.39962449361d10
- $Hz T^{-1}$ .
- real(real64), parameter `codata::u_bohr_magneton_in_hz_t` =0.00000000042d10
- $Hz T^{-1}$ .
- real(real64), parameter `codata::bohr_magneton_in_inverse_meter_per_tesla` =46.686447783d0
- $m^{-1} T^{-1}$
- real(real64), parameter `codata::u_bohr_magneton_in_inverse_meter_per_tesla` =0.000000014d0
- $m^{-1} T^{-1}$
- real(real64), parameter `codata::bohr_magneton_in_k_t` =0.67171381563d0
- $K T^{-1}$ .
- real(real64), parameter `codata::u_bohr_magneton_in_k_t` =0.00000000020d0
- $K T^{-1}$ .
- real(real64), parameter `codata::bohr_radius` =5.29177210903d-11
- m
- real(real64), parameter `codata::u_bohr_radius` =0.00000000080d-11
- m
- real(real64), parameter `codata::boltzmann_constant` =1.380649d-23
- $J K^{-1}$ .
- real(real64), parameter `codata::u_boltzmann_constant` =0.0d0
- $J K^{-1}$ .
- real(real64), parameter `codata::boltzmann_constant_in_ev_k` =8.617333262d-5
- $eV K^{-1}$
- real(real64), parameter `codata::u_boltzmann_constant_in_ev_k` =0.0d0
- $eV K^{-1}$
- real(real64), parameter `codata::boltzmann_constant_in_hz_k` =2.083661912d10
- $Hz K^{-1}$ .
- real(real64), parameter `codata::u_boltzmann_constant_in_hz_k` =0.0d0
- $Hz K^{-1}$ .

- real(real64), parameter `codata::boltzmann_constant_in_inverse_meter_per_kelvin` =69.50348004d0  
 $m^{-1} K^{-1}$
- real(real64), parameter `codata::u_boltzmann_constant_in_inverse_meter_per_kelvin` =0.0d0  
 $m^{-1} K^{-1}$
- real(real64), parameter `codata::characteristic_impedance_of_vacuum` =376.730313668d0  
*ohm*
- real(real64), parameter `codata::u_characteristic_impedance_of_vacuum` =0.000000057d0  
*ohm*
- real(real64), parameter `codata::classical_electron_radius` =2.8179403262d-15  
*m*
- real(real64), parameter `codata::u_classical_electron_radius` =0.0000000013d-15  
*m*
- real(real64), parameter `codata::compton_wavelength` =2.42631023867d-12  
*m*
- real(real64), parameter `codata::u_compton_wavelength` =0.00000000073d-12  
*m*
- real(real64), parameter `codata::conductance_quantum` =7.748091729d-5  
*S.*
- real(real64), parameter `codata::u_conductance_quantum` =0.0d0  
*S.*
- real(real64), parameter `codata::conventional_value_of_ampere_90` =1.00000008887d0  
*A.*
- real(real64), parameter `codata::u_conventional_value_of_ampere_90` =0.0d0  
*A.*
- real(real64), parameter `codata::conventional_value_of_coulomb_90` =1.00000008887d0  
*C.*
- real(real64), parameter `codata::u_conventional_value_of_coulomb_90` =0.0d0  
*C.*
- real(real64), parameter `codata::conventional_value_of_farad_90` =0.99999998220d0  
*F.*
- real(real64), parameter `codata::u_conventional_value_of_farad_90` =0.0d0  
*F.*
- real(real64), parameter `codata::conventional_value_of_henry_90` =1.00000001779d0  
*H.*
- real(real64), parameter `codata::u_conventional_value_of_henry_90` =0.0d0  
*H.*
- real(real64), parameter `codata::conventional_value_of_josephson_constant` =483597.9d9  
 $Hz V^{-1}$ .
- real(real64), parameter `codata::u_conventional_value_of_josephson_constant` =0.0d0  
 $Hz V^{-1}$ .
- real(real64), parameter `codata::conventional_value_of_ohm_90` =1.00000001779d0  
*ohm*
- real(real64), parameter `codata::u_conventional_value_of_ohm_90` =0.0d0  
*ohm*
- real(real64), parameter `codata::conventional_value_of_volt_90` =1.00000010666d0  
*V.*
- real(real64), parameter `codata::u_conventional_value_of_volt_90` =0.0d0  
*V.*
- real(real64), parameter `codata::conventional_value_of_von_klitzing_constant` =25812.807d0  
*ohm*
- real(real64), parameter `codata::u_conventional_value_of_von_klitzing_constant` =0.0d0

- ohm*
- real(real64), parameter `codata::conventional_value_of_watt_90` =1.00000019553d0
- W.*
- real(real64), parameter `codata::u_conventional_value_of_watt_90` =0.0d0
- W.*
- real(real64), parameter `codata::copper_x_unit` =1.00207697d-13
- m*
- real(real64), parameter `codata::u_copper_x_unit` =0.00000028d-13
- m*
- real(real64), parameter `codata::deuteron_electron_mag__mom__ratio` =-4.664345551d-4
- real(real64), parameter `codata::u_deuteron_electron_mag__mom__ratio` =0.000000012d-4
- real(real64), parameter `codata::deuteron_electron_mass_ratio` =3670.48296788d0
- real(real64), parameter `codata::u_deuteron_electron_mass_ratio` =0.00000013d0
- real(real64), parameter `codata::deuteron_g_factor` =0.8574382338d0
- real(real64), parameter `codata::u_deuteron_g_factor` =0.0000000022d0
- real(real64), parameter `codata::deuteron_mag__mom` =4.330735094d-27
- J T<sup>-1</sup>.*
- real(real64), parameter `codata::u_deuteron_mag__mom` =0.000000011d-27
- J T<sup>-1</sup>.*
- real(real64), parameter `codata::deuteron_mag__mom__to_bohr_magneton_ratio` =4.669754570d-4
- real(real64), parameter `codata::u_deuteron_mag__mom__to_bohr_magneton_ratio` =0.000000012d-4
- real(real64), parameter `codata::deuteron_mag__mom__to_nuclear_magneton_ratio` =0.8574382338d0
- real(real64), parameter `codata::u_deuteron_mag__mom__to_nuclear_magneton_ratio` =0.0000000022d0
- real(real64), parameter `codata::deuteron_mass` =3.3435837724d-27
- kg*
- real(real64), parameter `codata::u_deuteron_mass` =0.0000000010d-27
- kg*
- real(real64), parameter `codata::deuteron_mass_energy_equivalent` =3.00506323102d-10
- J.*
- real(real64), parameter `codata::u_deuteron_mass_energy_equivalent` =0.00000000091d-10
- J.*
- real(real64), parameter `codata::deuteron_mass_energy_equivalent_in_mev` =1875.61294257d0
- MeV.*
- real(real64), parameter `codata::u_deuteron_mass_energy_equivalent_in_mev` =0.000000057d0
- MeV.*
- real(real64), parameter `codata::deuteron_mass_in_u` =2.013553212745d0
- u*
- real(real64), parameter `codata::u_deuteron_mass_in_u` =0.00000000040d0
- u*
- real(real64), parameter `codata::deuteron_molar_mass` =2.01355321205d-3
- kg mol<sup>-1</sup>.*
- real(real64), parameter `codata::u_deuteron_molar_mass` =0.00000000061d-3
- kg mol<sup>-1</sup>.*
- real(real64), parameter `codata::deuteron_neutron_mag__mom__ratio` =-0.44820653d0
- real(real64), parameter `codata::u_deuteron_neutron_mag__mom__ratio` =0.00000011d0
- real(real64), parameter `codata::deuteron_proton_mag__mom__ratio` =0.30701220939d0
- real(real64), parameter `codata::u_deuteron_proton_mag__mom__ratio` =0.00000000079d0
- real(real64), parameter `codata::deuteron_proton_mass_ratio` =1.99900750139d0
- real(real64), parameter `codata::u_deuteron_proton_mass_ratio` =0.00000000011d0
- real(real64), parameter `codata::deuteron_relative_atomic_mass` =2.013553212745d0
- real(real64), parameter `codata::u_deuteron_relative_atomic_mass` =0.00000000040d0
- real(real64), parameter `codata::deuteron_rms_charge_radius` =2.12799d-15

- $m$
- real(real64), parameter `codata::u_deuteron_rms_charge_radius` =0.00074d-15
- $m$
- real(real64), parameter `codata::electron_charge_to_mass_quotient` =-1.75882001076d11
- $C\ kg^{-1}$ .
- real(real64), parameter `codata::u_electron_charge_to_mass_quotient` =0.00000000053d11
- $C\ kg^{-1}$ .
- real(real64), parameter `codata::electron_deuteron_mag__mom__ratio` =-2143.9234915d0
- real(real64), parameter `codata::u_electron_deuteron_mag__mom__ratio` =0.0000056d0
- real(real64), parameter `codata::electron_deuteron_mass_ratio` =2.724437107462d-4
- real(real64), parameter `codata::u_electron_deuteron_mass_ratio` =0.000000000096d-4
- real(real64), parameter `codata::electron_g_factor` =-2.00231930436256d0
- real(real64), parameter `codata::u_electron_g_factor` =0.00000000000035d0
- real(real64), parameter `codata::electron_gyromag__ratio` =1.76085963023d11
- $s^{-1}\ T^{-1}$
- real(real64), parameter `codata::u_electron_gyromag__ratio` =0.00000000053d11
- $s^{-1}\ T^{-1}$
- real(real64), parameter `codata::electron_gyromag__ratio_in_mhz_t` =28024.9514242d0
- $MHz\ T^{-1}$ .
- real(real64), parameter `codata::u_electron_gyromag__ratio_in_mhz_t` =0.0000085d0
- $MHz\ T^{-1}$ .
- real(real64), parameter `codata::electron_helion_mass_ratio` =1.819543074573d-4
- real(real64), parameter `codata::u_electron_helion_mass_ratio` =0.000000000079d-4
- real(real64), parameter `codata::electron_mag__mom` =-9.2847647043d-24
- $J\ T^{-1}$ .
- real(real64), parameter `codata::u_electron_mag__mom` =0.0000000028d-24
- $J\ T^{-1}$ .
- real(real64), parameter `codata::electron_mag__mom__anomaly` =1.15965218128d-3
- real(real64), parameter `codata::u_electron_mag__mom__anomaly` =0.00000000018d-3
- real(real64), parameter `codata::electron_mag__mom__to_bohr_magneton_ratio` =-1.00115965218128d0
- real(real64), parameter `codata::u_electron_mag__mom__to_bohr_magneton_ratio` =0.0000000000018d0
- real(real64), parameter `codata::electron_mag__mom__to_nuclear_magneton_ratio` =-1838.28197188d0
- real(real64), parameter `codata::u_electron_mag__mom__to_nuclear_magneton_ratio` =0.00000011d0
- real(real64), parameter `codata::electron_mass` =9.1093837015d-31
- $kg$
- real(real64), parameter `codata::u_electron_mass` =0.0000000028d-31
- $kg$
- real(real64), parameter `codata::electron_mass_energy_equivalent` =8.1871057769d-14
- $J$ .
- real(real64), parameter `codata::u_electron_mass_energy_equivalent` =0.0000000025d-14
- $J$ .
- real(real64), parameter `codata::electron_mass_energy_equivalent_in_mev` =0.51099895000d0
- $MeV$ .
- real(real64), parameter `codata::u_electron_mass_energy_equivalent_in_mev` =0.00000000015d0
- $MeV$ .
- real(real64), parameter `codata::electron_mass_in_u` =5.48579909065d-4
- $u$
- real(real64), parameter `codata::u_electron_mass_in_u` =0.00000000016d-4
- $u$
- real(real64), parameter `codata::electron_molar_mass` =5.4857990888d-7
- $kg\ mol^{-1}$
- real(real64), parameter `codata::u_electron_molar_mass` =0.0000000017d-7

- $\text{kg mol}^{-1}$
- `real(real64), parameter codata::electron_muon_mag_mom_ratio =206.7669883d0`
- `real(real64), parameter codata::u_electron_muon_mag_mom_ratio =0.0000046d0`
- `real(real64), parameter codata::electron_muon_mass_ratio =4.83633169d-3`
- `real(real64), parameter codata::u_electron_muon_mass_ratio =0.00000011d-3`
- `real(real64), parameter codata::electron_neutron_mag_mom_ratio =960.92050d0`
- `real(real64), parameter codata::u_electron_neutron_mag_mom_ratio =0.00023d0`
- `real(real64), parameter codata::electron_neutron_mass_ratio =5.4386734424d-4`
- `real(real64), parameter codata::u_electron_neutron_mass_ratio =0.0000000026d-4`
- `real(real64), parameter codata::electron_proton_mag_mom_ratio =-658.21068789d0`
- `real(real64), parameter codata::u_electron_proton_mag_mom_ratio =0.00000020d0`
- `real(real64), parameter codata::electron_proton_mass_ratio =5.44617021487d-4`
- `real(real64), parameter codata::u_electron_proton_mass_ratio =0.00000000033d-4`
- `real(real64), parameter codata::electron_relative_atomic_mass =5.48579909065d-4`
- `real(real64), parameter codata::u_electron_relative_atomic_mass =0.00000000016d-4`
- `real(real64), parameter codata::electron_tau_mass_ratio =2.87585d-4`
- `real(real64), parameter codata::u_electron_tau_mass_ratio =0.00019d-4`
- `real(real64), parameter codata::electron_to_alpha_particle_mass_ratio =1.370933554787d-4`
- `real(real64), parameter codata::u_electron_to_alpha_particle_mass_ratio =0.00000000045d-4`
- `real(real64), parameter codata::electron_to_shielded_helion_mag_mom_ratio =864.058257d0`
- `real(real64), parameter codata::u_electron_to_shielded_helion_mag_mom_ratio =0.000010d0`
- `real(real64), parameter codata::electron_to_shielded_proton_mag_mom_ratio =-658.2275971d0`
- `real(real64), parameter codata::u_electron_to_shielded_proton_mag_mom_ratio =0.0000072d0`
- `real(real64), parameter codata::electron_triton_mass_ratio =1.819200062251d-4`
- `real(real64), parameter codata::u_electron_triton_mass_ratio =0.00000000090d-4`
- `real(real64), parameter codata::electron_volt =1.602176634d-19`
- $J.$
- `real(real64), parameter codata::u_electron_volt =0.0d0`
- $J.$
- `real(real64), parameter codata::electron_volt_atomic_mass_unit_relationship =1.07354410233d-9`
- $u$
- `real(real64), parameter codata::u_electron_volt_atomic_mass_unit_relationship =0.00000000032d-9`
- $u$
- `real(real64), parameter codata::electron_volt_hartree_relationship =3.6749322175655d-2`
- $E_h.$
- `real(real64), parameter codata::u_electron_volt_hartree_relationship =0.000000000071d-2`
- $E_h.$
- `real(real64), parameter codata::electron_volt_hertz_relationship =2.417989242d14`
- $Hz.$
- `real(real64), parameter codata::u_electron_volt_hertz_relationship =0.0d0`
- $Hz.$
- `real(real64), parameter codata::electron_volt_inverse_meter_relationship =8.065543937d5`
- $m^{-1}$
- `real(real64), parameter codata::u_electron_volt_inverse_meter_relationship =0.0d0`
- $m^{-1}$
- `real(real64), parameter codata::electron_volt_joule_relationship =1.602176634d-19`
- $J.$
- `real(real64), parameter codata::u_electron_volt_joule_relationship =0.0d0`
- $J.$
- `real(real64), parameter codata::electron_volt_kelvin_relationship =1.160451812d4`
- $K.$
- `real(real64), parameter codata::u_electron_volt_kelvin_relationship =0.0d0`

- $K$ .
- `real(real64)`, parameter `codata::electron_volt_kilogram_relationship` = 1.782661921d-36
- $kg$
- `real(real64)`, parameter `codata::u_electron_volt_kilogram_relationship` = 0.0d0
- $kg$
- `real(real64)`, parameter `codata::elementary_charge` = 1.602176634d-19
- $C$ .
- `real(real64)`, parameter `codata::u_elementary_charge` = 0.0d0
- $C$ .
- `real(real64)`, parameter `codata::elementary_charge_over_h_bar` = 1.519267447d15
- $A J^{-1}$ .
- `real(real64)`, parameter `codata::u_elementary_charge_over_h_bar` = 0.0d0
- $A J^{-1}$ .
- `real(real64)`, parameter `codata::faraday_constant` = 96485.33212d0
- $C mol^{-1}$ .
- `real(real64)`, parameter `codata::u_faraday_constant` = 0.0d0
- $C mol^{-1}$ .
- `real(real64)`, parameter `codata::fermi_coupling_constant` = 1.1663787d-5
- $GeV^{-2}$ .
- `real(real64)`, parameter `codata::u_fermi_coupling_constant` = 0.0000006d-5
- $GeV^{-2}$ .
- `real(real64)`, parameter `codata::fine_structure_constant` = 7.2973525693d-3
- `real(real64)`, parameter `codata::u_fine_structure_constant` = 0.000000011d-3
- `real(real64)`, parameter `codata::first_radiation_constant` = 3.741771852d-16
- $W m^2$ .
- `real(real64)`, parameter `codata::u_first_radiation_constant` = 0.0d0
- $W m^2$ .
- `real(real64)`, parameter `codata::first_radiation_constant_for_spectral_radiance` = 1.191042972d-16
- $W m^2 sr^{-1}$ .
- `real(real64)`, parameter `codata::u_first_radiation_constant_for_spectral_radiance` = 0.0d0
- $W m^2 sr^{-1}$ .
- `real(real64)`, parameter `codata::hartree_atomic_mass_unit_relationship` = 2.92126232205d-8
- $u$
- `real(real64)`, parameter `codata::u_hartree_atomic_mass_unit_relationship` = 0.00000000088d-8
- $u$
- `real(real64)`, parameter `codata::hartree_electron_volt_relationship` = 27.211386245988d0
- $eV$
- `real(real64)`, parameter `codata::u_hartree_electron_volt_relationship` = 0.00000000053d0
- $eV$
- `real(real64)`, parameter `codata::hartree_energy` = 4.3597447222071d-18
- $J$ .
- `real(real64)`, parameter `codata::u_hartree_energy` = 0.000000000085d-18
- $J$ .
- `real(real64)`, parameter `codata::hartree_energy_in_ev` = 27.211386245988d0
- $eV$
- `real(real64)`, parameter `codata::u_hartree_energy_in_ev` = 0.00000000053d0
- $eV$
- `real(real64)`, parameter `codata::hartree_hertz_relationship` = 6.579683920502d15
- $Hz$ .
- `real(real64)`, parameter `codata::u_hartree_hertz_relationship` = 0.00000000013d15
- $Hz$ .

- `real(real64)`, parameter `codata::hartree_inverse_meter_relationship` =2.1947463136320d7  
 $m^{-1}$
- `real(real64)`, parameter `codata::u_hartree_inverse_meter_relationship` =0.0000000000043d7  
 $m^{-1}$
- `real(real64)`, parameter `codata::hartree_joule_relationship` =4.3597447222071d-18  
 $J$ .
- `real(real64)`, parameter `codata::u_hartree_joule_relationship` =0.0000000000085d-18  
 $J$ .
- `real(real64)`, parameter `codata::hartree_kelvin_relationship` =3.1577502480407d5  
 $K$ .
- `real(real64)`, parameter `codata::u_hartree_kelvin_relationship` =0.0000000000061d5  
 $K$ .
- `real(real64)`, parameter `codata::hartree_kilogram_relationship` =4.8508702095432d-35  
 $kg$
- `real(real64)`, parameter `codata::u_hartree_kilogram_relationship` =0.0000000000094d-35  
 $kg$
- `real(real64)`, parameter `codata::helion_electron_mass_ratio` =5495.88528007d0
- `real(real64)`, parameter `codata::u_helion_electron_mass_ratio` =0.00000024d0
- `real(real64)`, parameter `codata::helion_g_factor` =-4.255250615d0
- `real(real64)`, parameter `codata::u_helion_g_factor` =0.000000050d0
- `real(real64)`, parameter `codata::helion_mag__mom` =-1.074617532d-26  
 $J\ T^{-1}$ .
- `real(real64)`, parameter `codata::u_helion_mag__mom` =0.000000013d-26  
 $J\ T^{-1}$ .
- `real(real64)`, parameter `codata::helion_mag__mom__to_bohr_magneton_ratio` =-1.158740958d-3
- `real(real64)`, parameter `codata::u_helion_mag__mom__to_bohr_magneton_ratio` =0.000000014d-3
- `real(real64)`, parameter `codata::helion_mag__mom__to_nuclear_magneton_ratio` =-2.127625307d0
- `real(real64)`, parameter `codata::u_helion_mag__mom__to_nuclear_magneton_ratio` =0.000000025d0
- `real(real64)`, parameter `codata::helion_mass` =5.0064127796d-27  
 $kg$
- `real(real64)`, parameter `codata::u_helion_mass` =0.0000000015d-27  
 $kg$
- `real(real64)`, parameter `codata::helion_mass_energy_equivalent` =4.4995394125d-10  
 $J$ .
- `real(real64)`, parameter `codata::u_helion_mass_energy_equivalent` =0.0000000014d-10  
 $J$ .
- `real(real64)`, parameter `codata::helion_mass_energy_equivalent_in_mev` =2808.39160743d0  
 $MeV$ .
- `real(real64)`, parameter `codata::u_helion_mass_energy_equivalent_in_mev` =0.00000085d0  
 $MeV$ .
- `real(real64)`, parameter `codata::helion_mass_in_u` =3.014932247175d0  
 $u$
- `real(real64)`, parameter `codata::u_helion_mass_in_u` =0.00000000097d0  
 $u$
- `real(real64)`, parameter `codata::helion_molar_mass` =3.01493224613d-3  
 $kg\ mol^{-1}$
- `real(real64)`, parameter `codata::u_helion_molar_mass` =0.00000000091d-3  
 $kg\ mol^{-1}$
- `real(real64)`, parameter `codata::helion_proton_mass_ratio` =2.99315267167d0
- `real(real64)`, parameter `codata::u_helion_proton_mass_ratio` =0.00000000013d0
- `real(real64)`, parameter `codata::helion_relative_atomic_mass` =3.014932247175d0



- real(real64), parameter `codata::u_helion_relative_atomic_mass` =0.000000000097d0
- real(real64), parameter `codata::helion_shielding_shift` =5.996743d-5
- real(real64), parameter `codata::u_helion_shielding_shift` =0.000010d-5
- real(real64), parameter `codata::hertz_atomic_mass_unit_relationship` =4.4398216652d-24  
*u*
- real(real64), parameter `codata::u_hertz_atomic_mass_unit_relationship` =0.0000000013d-24  
*u*
- real(real64), parameter `codata::hertz_electron_volt_relationship` =4.135667696d-15  
*eV*
- real(real64), parameter `codata::u_hertz_electron_volt_relationship` =0.0d0  
*eV*
- real(real64), parameter `codata::hertz_hartree_relationship` =1.5198298460570d-16  
*E\_h.*
- real(real64), parameter `codata::u_hertz_hartree_relationship` =0.0000000000029d-16  
*E\_h.*
- real(real64), parameter `codata::hertz_inverse_meter_relationship` =3.335640951d-9  
*m^-1*
- real(real64), parameter `codata::u_hertz_inverse_meter_relationship` =0.0d0  
*m^-1*
- real(real64), parameter `codata::hertz_joule_relationship` =6.62607015d-34  
*J.*
- real(real64), parameter `codata::u_hertz_joule_relationship` =0.0d0  
*J.*
- real(real64), parameter `codata::hertz_kelvin_relationship` =4.799243073d-11  
*K.*
- real(real64), parameter `codata::u_hertz_kelvin_relationship` =0.0d0  
*K.*
- real(real64), parameter `codata::hertz_kilogram_relationship` =7.372497323d-51  
*kg*
- real(real64), parameter `codata::u_hertz_kilogram_relationship` =0.0d0  
*kg*
- real(real64), parameter `codata::hyperfine_transition_frequency_of_cs_133` =9192631770.0d0  
*Hz.*
- real(real64), parameter `codata::u_hyperfine_transition_frequency_of_cs_133` =0.0d0  
*Hz.*
- real(real64), parameter `codata::inverse_fine_structure_constant` =137.035999084d0
- real(real64), parameter `codata::u_inverse_fine_structure_constant` =0.000000021d0
- real(real64), parameter `codata::inverse_meter_atomic_mass_unit_relationship` =1.33102505010d-15  
*u*
- real(real64), parameter `codata::u_inverse_meter_atomic_mass_unit_relationship` =0.00000000040d-15  
*u*
- real(real64), parameter `codata::inverse_meter_electron_volt_relationship` =1.239841984d-6  
*eV*
- real(real64), parameter `codata::u_inverse_meter_electron_volt_relationship` =0.0d0  
*eV*
- real(real64), parameter `codata::inverse_meter_hartree_relationship` =4.5563352529120d-8  
*E\_h.*
- real(real64), parameter `codata::u_inverse_meter_hartree_relationship` =0.0000000000088d-8  
*E\_h.*
- real(real64), parameter `codata::inverse_meter_hertz_relationship` =299792458.0d0  
*Hz.*

- `real(real64)`, parameter `codata::u_inverse_meter_hertz_relationship` =0.0d0  
*Hz.*
- `real(real64)`, parameter `codata::inverse_meter_joule_relationship` =1.986445857d-25  
*J.*
- `real(real64)`, parameter `codata::u_inverse_meter_joule_relationship` =0.0d0  
*J.*
- `real(real64)`, parameter `codata::inverse_meter_kelvin_relationship` =1.438776877d-2  
*K.*
- `real(real64)`, parameter `codata::u_inverse_meter_kelvin_relationship` =0.0d0  
*K.*
- `real(real64)`, parameter `codata::inverse_meter_kilogram_relationship` =2.210219094d-42  
*kg*
- `real(real64)`, parameter `codata::u_inverse_meter_kilogram_relationship` =0.0d0  
*kg*
- `real(real64)`, parameter `codata::inverse_of_conductance_quantum` =12906.40372d0  
*ohm*
- `real(real64)`, parameter `codata::u_inverse_of_conductance_quantum` =0.0d0  
*ohm*
- `real(real64)`, parameter `codata::josephson_constant` =483597.8484d9  
*Hz V<sup>-1</sup>.*
- `real(real64)`, parameter `codata::u_josephson_constant` =0.0d0  
*Hz V<sup>-1</sup>.*
- `real(real64)`, parameter `codata::joule_atomic_mass_unit_relationship` =6.7005352565d9  
*u*
- `real(real64)`, parameter `codata::u_joule_atomic_mass_unit_relationship` =0.0000000020d9  
*u*
- `real(real64)`, parameter `codata::joule_electron_volt_relationship` =6.241509074d18  
*eV*
- `real(real64)`, parameter `codata::u_joule_electron_volt_relationship` =0.0d0  
*eV*
- `real(real64)`, parameter `codata::joule_hartree_relationship` =2.2937122783963d17  
*E<sub>h</sub>.*
- `real(real64)`, parameter `codata::u_joule_hartree_relationship` =0.000000000045d17  
*E<sub>h</sub>.*
- `real(real64)`, parameter `codata::joule_hertz_relationship` =1.509190179d33  
*Hz.*
- `real(real64)`, parameter `codata::u_joule_hertz_relationship` =0.0d0  
*Hz.*
- `real(real64)`, parameter `codata::joule_inverse_meter_relationship` =5.034116567d24  
*m<sup>-1</sup>*
- `real(real64)`, parameter `codata::u_joule_inverse_meter_relationship` =0.0d0  
*m<sup>-1</sup>*
- `real(real64)`, parameter `codata::joule_kelvin_relationship` =7.242970516d22  
*K.*
- `real(real64)`, parameter `codata::u_joule_kelvin_relationship` =0.0d0  
*K.*
- `real(real64)`, parameter `codata::joule_kilogram_relationship` =1.112650056d-17  
*kg*
- `real(real64)`, parameter `codata::u_joule_kilogram_relationship` =0.0d0  
*kg*
- `real(real64)`, parameter `codata::kelvin_atomic_mass_unit_relationship` =9.2510873014d-14

- $u$
- real(real64), parameter `codata::u_kelvin_atomic_mass_unit_relationship` =0.0000000028d-14
- $u$
- real(real64), parameter `codata::kelvin_electron_volt_relationship` =8.617333262d-5
- $eV$
- real(real64), parameter `codata::u_kelvin_electron_volt_relationship` =0.0d0
- $eV$
- real(real64), parameter `codata::kelvin_hartree_relationship` =3.1668115634556d-6
- $E_h$
- real(real64), parameter `codata::u_kelvin_hartree_relationship` =0.0000000000061d-6
- $E_h$
- real(real64), parameter `codata::kelvin_hertz_relationship` =2.083661912d10
- $Hz$
- real(real64), parameter `codata::u_kelvin_hertz_relationship` =0.0d0
- $Hz$
- real(real64), parameter `codata::kelvin_inverse_meter_relationship` =69.50348004d0
- $m^{-1}$
- real(real64), parameter `codata::u_kelvin_inverse_meter_relationship` =0.0d0
- $m^{-1}$
- real(real64), parameter `codata::kelvin_joule_relationship` =1.380649d-23
- $J$
- real(real64), parameter `codata::u_kelvin_joule_relationship` =0.0d0
- $J$
- real(real64), parameter `codata::kelvin_kilogram_relationship` =1.536179187d-40
- $kg$
- real(real64), parameter `codata::u_kelvin_kilogram_relationship` =0.0d0
- $kg$
- real(real64), parameter `codata::kilogram_atomic_mass_unit_relationship` =6.0221407621d26
- $u$
- real(real64), parameter `codata::u_kilogram_atomic_mass_unit_relationship` =0.0000000018d26
- $u$
- real(real64), parameter `codata::kilogram_electron_volt_relationship` =5.609588603d35
- $eV$
- real(real64), parameter `codata::u_kilogram_electron_volt_relationship` =0.0d0
- $eV$
- real(real64), parameter `codata::kilogram_hartree_relationship` =2.0614857887409d34
- $E_h$
- real(real64), parameter `codata::u_kilogram_hartree_relationship` =0.000000000040d34
- $E_h$
- real(real64), parameter `codata::kilogram_hertz_relationship` =1.356392489d50
- $Hz$
- real(real64), parameter `codata::u_kilogram_hertz_relationship` =0.0d0
- $Hz$
- real(real64), parameter `codata::kilogram_inverse_meter_relationship` =4.524438335d41
- $m^{-1}$
- real(real64), parameter `codata::u_kilogram_inverse_meter_relationship` =0.0d0
- $m^{-1}$
- real(real64), parameter `codata::kilogram_joule_relationship` =8.987551787d16
- $J$
- real(real64), parameter `codata::u_kilogram_joule_relationship` =0.0d0
- $J$

- `real(real64)`, parameter `codata::kilogram_kelvin_relationship` =6.509657260d39  
*K.*
- `real(real64)`, parameter `codata::u_kilogram_kelvin_relationship` =0.0d0  
*K.*
- `real(real64)`, parameter `codata::lattice_parameter_of_silicon` =5.431020511d-10  
*m*
- `real(real64)`, parameter `codata::u_lattice_parameter_of_silicon` =0.000000089d-10  
*m*
- `real(real64)`, parameter `codata::lattice_spacing_of_ideal_si__220` =1.920155716d-10  
*m*
- `real(real64)`, parameter `codata::u_lattice_spacing_of_ideal_si__220` =0.000000032d-10  
*m*
- `real(real64)`, parameter `codata::loschmidt_constant__273_15_k__100_kpa` =2.651645804d25  
*m<sup>-3</sup>*
- `real(real64)`, parameter `codata::u_loschmidt_constant__273_15_k__100_kpa` =0.0d0  
*m<sup>-3</sup>*
- `real(real64)`, parameter `codata::loschmidt_constant__273_15_k__101_325_kpa` =2.686780111d25  
*m<sup>-3</sup>*
- `real(real64)`, parameter `codata::u_loschmidt_constant__273_15_k__101_325_kpa` =0.0d0  
*m<sup>-3</sup>*
- `real(real64)`, parameter `codata::luminous_efficacy` =683.0d0  
*lm W<sup>-1</sup>*
- `real(real64)`, parameter `codata::u_luminous_efficacy` =0.0d0  
*lm W<sup>-1</sup>*
- `real(real64)`, parameter `codata::mag_flux_quantum` =2.067833848d-15  
*Wb.*
- `real(real64)`, parameter `codata::u_mag_flux_quantum` =0.0d0  
*Wb.*
- `real(real64)`, parameter `codata::molar_gas_constant` =8.314462618d0  
*J mol<sup>-1</sup> K<sup>-1</sup>.*
- `real(real64)`, parameter `codata::u_molar_gas_constant` =0.0d0  
*J mol<sup>-1</sup> K<sup>-1</sup>.*
- `real(real64)`, parameter `codata::molar_mass_constant` =0.99999999965d-3  
*kg mol<sup>-1</sup>*
- `real(real64)`, parameter `codata::u_molar_mass_constant` =0.00000000030d-3  
*kg mol<sup>-1</sup>*
- `real(real64)`, parameter `codata::molar_mass_of_carbon_12` =11.9999999958d-3  
*kg mol<sup>-1</sup>*
- `real(real64)`, parameter `codata::u_molar_mass_of_carbon_12` =0.0000000036d-3  
*kg mol<sup>-1</sup>*
- `real(real64)`, parameter `codata::molar_planck_constant` =3.990312712d-10  
*J Hz<sup>-1</sup> mol<sup>-1</sup>.*
- `real(real64)`, parameter `codata::u_molar_planck_constant` =0.0d0  
*J Hz<sup>-1</sup> mol<sup>-1</sup>.*
- `real(real64)`, parameter `codata::molar_volume_of_ideal_gas__273_15_k__100_kpa` =22.71095464d-3  
*m<sup>3</sup> mol<sup>-1</sup>*
- `real(real64)`, parameter `codata::u_molar_volume_of_ideal_gas__273_15_k__100_kpa` =0.0d0  
*m<sup>3</sup> mol<sup>-1</sup>*
- `real(real64)`, parameter `codata::molar_volume_of_ideal_gas__273_15_k__101_325_kpa` =22.41396954d-3  
*m<sup>3</sup> mol<sup>-1</sup>*
- `real(real64)`, parameter `codata::u_molar_volume_of_ideal_gas__273_15_k__101_325_kpa` =0.0d0

- $m^3 \text{ mol}^{-1}$
- real(real64), parameter `codata::molar_volume_of_silicon` =1.205883199d-5
- $m^3 \text{ mol}^{-1}$
- real(real64), parameter `codata::u_molar_volume_of_silicon` =0.000000060d-5
- $m^3 \text{ mol}^{-1}$
- real(real64), parameter `codata::molybdenum_x_unit` =1.00209952d-13
- $m$
- real(real64), parameter `codata::u_molybdenum_x_unit` =0.00000053d-13
- $m$
- real(real64), parameter `codata::muon_compton_wavelength` =1.173444110d-14
- $m$
- real(real64), parameter `codata::u_muon_compton_wavelength` =0.00000026d-14
- $m$
- real(real64), parameter `codata::muon_electron_mass_ratio` =206.7682830d0
- real(real64), parameter `codata::u_muon_electron_mass_ratio` =0.0000046d0
- real(real64), parameter `codata::muon_g_factor` =-2.0023318418d0
- real(real64), parameter `codata::u_muon_g_factor` =0.000000013d0
- real(real64), parameter `codata::muon_mag_mom` =-4.49044830d-26
- $J T^{-1}$ .
- real(real64), parameter `codata::u_muon_mag_mom` =0.00000010d-26
- $J T^{-1}$ .
- real(real64), parameter `codata::muon_mag_mom_anomaly` =1.16592089d-3
- real(real64), parameter `codata::u_muon_mag_mom_anomaly` =0.00000063d-3
- real(real64), parameter `codata::muon_mag_mom_to_bohr_magneton_ratio` =-4.84197047d-3
- real(real64), parameter `codata::u_muon_mag_mom_to_bohr_magneton_ratio` =0.00000011d-3
- real(real64), parameter `codata::muon_mag_mom_to_nuclear_magneton_ratio` =-8.89059703d0
- real(real64), parameter `codata::u_muon_mag_mom_to_nuclear_magneton_ratio` =0.00000020d0
- real(real64), parameter `codata::muon_mass` =1.883531627d-28
- $kg$
- real(real64), parameter `codata::u_muon_mass` =0.000000042d-28
- $kg$
- real(real64), parameter `codata::muon_mass_energy_equivalent` =1.692833804d-11
- $J$ .
- real(real64), parameter `codata::u_muon_mass_energy_equivalent` =0.000000038d-11
- $J$ .
- real(real64), parameter `codata::muon_mass_energy_equivalent_in_mev` =105.6583755d0
- $MeV$ .
- real(real64), parameter `codata::u_muon_mass_energy_equivalent_in_mev` =0.0000023d0
- $MeV$ .
- real(real64), parameter `codata::muon_mass_in_u` =0.1134289259d0
- $u$
- real(real64), parameter `codata::u_muon_mass_in_u` =0.0000000025d0
- $u$
- real(real64), parameter `codata::muon_molar_mass` =1.134289259d-4
- $kg \text{ mol}^{-1}$
- real(real64), parameter `codata::u_muon_molar_mass` =0.000000025d-4
- $kg \text{ mol}^{-1}$
- real(real64), parameter `codata::muon_neutron_mass_ratio` =0.1124545170d0
- real(real64), parameter `codata::u_muon_neutron_mass_ratio` =0.0000000025d0
- real(real64), parameter `codata::muon_proton_mag_mom_ratio` =-3.183345142d0
- real(real64), parameter `codata::u_muon_proton_mag_mom_ratio` =0.000000071d0
- real(real64), parameter `codata::muon_proton_mass_ratio` =0.1126095264d0

- `real(real64)`, parameter `codata::u_muon_proton_mass_ratio` =0.0000000025d0
- `real(real64)`, parameter `codata::muon_tau_mass_ratio` =5.94635d-2
- `real(real64)`, parameter `codata::u_muon_tau_mass_ratio` =0.00040d-2
- `real(real64)`, parameter `codata::natural_unit_of_action` =1.054571817d-34  
 $J\ s$ .
- `real(real64)`, parameter `codata::u_natural_unit_of_action` =0.0d0  
 $J\ s$ .
- `real(real64)`, parameter `codata::natural_unit_of_action_in_ev_s` =6.582119569d-16  
 $eV\ s$
- `real(real64)`, parameter `codata::u_natural_unit_of_action_in_ev_s` =0.0d0  
 $eV\ s$
- `real(real64)`, parameter `codata::natural_unit_of_energy` =8.1871057769d-14  
 $J$ .
- `real(real64)`, parameter `codata::u_natural_unit_of_energy` =0.0000000025d-14  
 $J$ .
- `real(real64)`, parameter `codata::natural_unit_of_energy_in_mev` =0.51099895000d0  
 $MeV$ .
- `real(real64)`, parameter `codata::u_natural_unit_of_energy_in_mev` =0.00000000015d0  
 $MeV$ .
- `real(real64)`, parameter `codata::natural_unit_of_length` =3.8615926796d-13  
 $m$
- `real(real64)`, parameter `codata::u_natural_unit_of_length` =0.0000000012d-13  
 $m$
- `real(real64)`, parameter `codata::natural_unit_of_mass` =9.1093837015d-31  
 $kg$
- `real(real64)`, parameter `codata::u_natural_unit_of_mass` =0.00000000028d-31  
 $kg$
- `real(real64)`, parameter `codata::natural_unit_of_momentum` =2.73092453075d-22  
 $kg\ m\ s^{-1}$
- `real(real64)`, parameter `codata::u_natural_unit_of_momentum` =0.00000000082d-22  
 $kg\ m\ s^{-1}$
- `real(real64)`, parameter `codata::natural_unit_of_momentum_in_mev_c` =0.51099895000d0  
 $MeV/c$ .
- `real(real64)`, parameter `codata::u_natural_unit_of_momentum_in_mev_c` =0.00000000015d0  
 $MeV/c$ .
- `real(real64)`, parameter `codata::natural_unit_of_time` =1.28808866819d-21  
 $s$
- `real(real64)`, parameter `codata::u_natural_unit_of_time` =0.00000000039d-21  
 $s$
- `real(real64)`, parameter `codata::natural_unit_of_velocity` =299792458.0d0  
 $m\ s^{-1}$
- `real(real64)`, parameter `codata::u_natural_unit_of_velocity` =0.0d0  
 $m\ s^{-1}$
- `real(real64)`, parameter `codata::neutron_compton_wavelength` =1.31959090581d-15  
 $m$
- `real(real64)`, parameter `codata::u_neutron_compton_wavelength` =0.00000000075d-15  
 $m$
- `real(real64)`, parameter `codata::neutron_electron_mag_mom_ratio` =1.04066882d-3
- `real(real64)`, parameter `codata::u_neutron_electron_mag_mom_ratio` =0.00000025d-3
- `real(real64)`, parameter `codata::neutron_electron_mass_ratio` =1838.68366173d0
- `real(real64)`, parameter `codata::u_neutron_electron_mass_ratio` =0.00000089d0

- `real(real64), parameter codata::neutron_g_factor = -3.82608545d0`
- `real(real64), parameter codata::u_neutron_g_factor = 0.00000090d0`
- `real(real64), parameter codata::neutron_gyromag_ratio = 1.83247171d8`  
 $s^{-1} T^{-1}$
- `real(real64), parameter codata::u_neutron_gyromag_ratio = 0.00000043d8`  
 $s^{-1} T^{-1}$
- `real(real64), parameter codata::neutron_gyromag_ratio_in_mhz_t = 29.1646931d0`  
 $MHz T^{-1}$ .
- `real(real64), parameter codata::u_neutron_gyromag_ratio_in_mhz_t = 0.0000069d0`  
 $MHz T^{-1}$ .
- `real(real64), parameter codata::neutron_mag_mom = -9.6623651d-27`  
 $J T^{-1}$ .
- `real(real64), parameter codata::u_neutron_mag_mom = 0.0000023d-27`  
 $J T^{-1}$ .
- `real(real64), parameter codata::neutron_mag_mom_to_bohr_magneton_ratio = -1.04187563d-3`
- `real(real64), parameter codata::u_neutron_mag_mom_to_bohr_magneton_ratio = 0.00000025d-3`
- `real(real64), parameter codata::neutron_mag_mom_to_nuclear_magneton_ratio = -1.91304273d0`
- `real(real64), parameter codata::u_neutron_mag_mom_to_nuclear_magneton_ratio = 0.00000045d0`
- `real(real64), parameter codata::neutron_mass = 1.67492749804d-27`  
 $kg$
- `real(real64), parameter codata::u_neutron_mass = 0.00000000095d-27`  
 $kg$
- `real(real64), parameter codata::neutron_mass_energy_equivalent = 1.50534976287d-10`  
 $J$ .
- `real(real64), parameter codata::u_neutron_mass_energy_equivalent = 0.00000000086d-10`  
 $J$ .
- `real(real64), parameter codata::neutron_mass_energy_equivalent_in_mev = 939.56542052d0`  
 $MeV$ .
- `real(real64), parameter codata::u_neutron_mass_energy_equivalent_in_mev = 0.00000054d0`  
 $MeV$ .
- `real(real64), parameter codata::neutron_mass_in_u = 1.00866491595d0`  
 $u$
- `real(real64), parameter codata::u_neutron_mass_in_u = 0.00000000049d0`  
 $u$
- `real(real64), parameter codata::neutron_molar_mass = 1.00866491560d-3`  
 $kg mol^{-1}$
- `real(real64), parameter codata::u_neutron_molar_mass = 0.00000000057d-3`  
 $kg mol^{-1}$
- `real(real64), parameter codata::neutron_muon_mass_ratio = 8.89248406d0`
- `real(real64), parameter codata::u_neutron_muon_mass_ratio = 0.00000020d0`
- `real(real64), parameter codata::neutron_proton_mag_mom_ratio = -0.68497934d0`
- `real(real64), parameter codata::u_neutron_proton_mag_mom_ratio = 0.00000016d0`
- `real(real64), parameter codata::neutron_proton_mass_difference = 2.30557435d-30`  
 $kg$
- `real(real64), parameter codata::u_neutron_proton_mass_difference = 0.00000082d-30`  
 $kg$
- `real(real64), parameter codata::neutron_proton_mass_difference_energy_equivalent = 2.07214689d-13`  
 $J$ .
- `real(real64), parameter codata::u_neutron_proton_mass_difference_energy_equivalent = 0.00000074d-13`  
 $J$ .

- real(real64), parameter `codata::neutron_proton_mass_difference_energy_equivalent_in_mev` =1.↔  
29333236d0  
*MeV.*
- real(real64), parameter `codata::u_neutron_proton_mass_difference_energy_equivalent_in_mev` =0.↔  
00000046d0  
*MeV.*
- real(real64), parameter `codata::neutron_proton_mass_difference_in_u` =1.38844933d-3  
*u*
- real(real64), parameter `codata::u_neutron_proton_mass_difference_in_u` =0.00000049d-3  
*u*
- real(real64), parameter `codata::neutron_proton_mass_ratio` =1.00137841931d0
- real(real64), parameter `codata::u_neutron_proton_mass_ratio` =0.00000000049d0
- real(real64), parameter `codata::neutron_relative_atomic_mass` =1.00866491595d0
- real(real64), parameter `codata::u_neutron_relative_atomic_mass` =0.00000000049d0
- real(real64), parameter `codata::neutron_tau_mass_ratio` =0.528779d0
- real(real64), parameter `codata::u_neutron_tau_mass_ratio` =0.000036d0
- real(real64), parameter `codata::neutron_to_shielded_proton_mag__mom__ratio` =-0.68499694d0
- real(real64), parameter `codata::u_neutron_to_shielded_proton_mag__mom__ratio` =0.00000016d0
- real(real64), parameter `codata::newtonian_constant_of_gravitation` =6.67430d-11  
 $m^3 kg^{-1} s^{-2}$
- real(real64), parameter `codata::u_newtonian_constant_of_gravitation` =0.00015d-11  
 $m^3 kg^{-1} s^{-2}$
- real(real64), parameter `codata::newtonian_constant_of_gravitation_over_h_bar_c` =6.70883d-39  
 $(GeV/c^2)^{-2}$
- real(real64), parameter `codata::u_newtonian_constant_of_gravitation_over_h_bar_c` =0.00015d-39  
 $(GeV/c^2)^{-2}$
- real(real64), parameter `codata::nuclear_magneton` =5.0507837461d-27  
 $J T^{-1}$ .
- real(real64), parameter `codata::u_nuclear_magneton` =0.0000000015d-27  
 $J T^{-1}$ .
- real(real64), parameter `codata::nuclear_magneton_in_ev_t` =3.15245125844d-8  
 $eV T^{-1}$
- real(real64), parameter `codata::u_nuclear_magneton_in_ev_t` =0.00000000096d-8  
 $eV T^{-1}$
- real(real64), parameter `codata::nuclear_magneton_in_inverse_meter_per_tesla` =2.54262341353d-2  
 $m^{-1} T^{-1}$
- real(real64), parameter `codata::u_nuclear_magneton_in_inverse_meter_per_tesla` =0.00000000078d-2  
 $m^{-1} T^{-1}$
- real(real64), parameter `codata::nuclear_magneton_in_k_t` =3.6582677756d-4  
 $K T^{-1}$ .
- real(real64), parameter `codata::u_nuclear_magneton_in_k_t` =0.0000000011d-4  
 $K T^{-1}$ .
- real(real64), parameter `codata::nuclear_magneton_in_mhz_t` =7.6225932291d0  
 $MHz T^{-1}$ .
- real(real64), parameter `codata::u_nuclear_magneton_in_mhz_t` =0.0000000023d0  
 $MHz T^{-1}$ .
- real(real64), parameter `codata::planck_constant` =6.62607015d-34  
 $J Hz^{-1}$ .
- real(real64), parameter `codata::u_planck_constant` =0.0d0  
 $J Hz^{-1}$ .
- real(real64), parameter `codata::planck_constant_in_ev_hz` =4.135667696d-15



- $\text{eV Hz}^{-1}$
- real(real64), parameter `codata::u_planck_constant_in_ev_hz` =0.0d0
- $\text{eV Hz}^{-1}$
- real(real64), parameter `codata::planck_length` =1.616255d-35
- $m$
- real(real64), parameter `codata::u_planck_length` =0.000018d-35
- $m$
- real(real64), parameter `codata::planck_mass` =2.176434d-8
- $kg$
- real(real64), parameter `codata::u_planck_mass` =0.000024d-8
- $kg$
- real(real64), parameter `codata::planck_mass_energy_equivalent_in_gev` =1.220890d19
- $GeV$ .
- real(real64), parameter `codata::u_planck_mass_energy_equivalent_in_gev` =0.000014d19
- $GeV$ .
- real(real64), parameter `codata::planck_temperature` =1.416784d32
- $K$ .
- real(real64), parameter `codata::u_planck_temperature` =0.000016d32
- $K$ .
- real(real64), parameter `codata::planck_time` =5.391247d-44
- $s$
- real(real64), parameter `codata::u_planck_time` =0.000060d-44
- $s$
- real(real64), parameter `codata::proton_charge_to_mass_quotient` =9.5788331560d7
- $C\text{ kg}^{-1}$ .
- real(real64), parameter `codata::u_proton_charge_to_mass_quotient` =0.0000000029d7
- $C\text{ kg}^{-1}$ .
- real(real64), parameter `codata::proton_compton_wavelength` =1.32140985539d-15
- $m$
- real(real64), parameter `codata::u_proton_compton_wavelength` =0.00000000040d-15
- $m$
- real(real64), parameter `codata::proton_electron_mass_ratio` =1836.15267343d0
- real(real64), parameter `codata::u_proton_electron_mass_ratio` =0.00000011d0
- real(real64), parameter `codata::proton_g_factor` =5.5856946893d0
- real(real64), parameter `codata::u_proton_g_factor` =0.0000000016d0
- real(real64), parameter `codata::proton_gyromag_ratio` =2.6752218744d8
- $s^{-1} T^{-1}$
- real(real64), parameter `codata::u_proton_gyromag_ratio` =0.0000000011d8
- $s^{-1} T^{-1}$
- real(real64), parameter `codata::proton_gyromag_ratio_in_mhz_t` =42.577478518d0
- $MHz\ T^{-1}$ .
- real(real64), parameter `codata::u_proton_gyromag_ratio_in_mhz_t` =0.000000018d0
- $MHz\ T^{-1}$ .
- real(real64), parameter `codata::proton_mag_mom` =1.41060679736d-26
- $J\ T^{-1}$ .
- real(real64), parameter `codata::u_proton_mag_mom` =0.00000000060d-26
- $J\ T^{-1}$ .
- real(real64), parameter `codata::proton_mag_mom_to_bohr_magneton_ratio` =1.52103220230d-3
- real(real64), parameter `codata::u_proton_mag_mom_to_bohr_magneton_ratio` =0.00000000046d-3
- real(real64), parameter `codata::proton_mag_mom_to_nuclear_magneton_ratio` =2.79284734463d0
- real(real64), parameter `codata::u_proton_mag_mom_to_nuclear_magneton_ratio` =0.00000000082d0

- real(real64), parameter `codata::proton_mag_shielding_correction` =2.5689d-5
- real(real64), parameter `codata::u_proton_mag_shielding_correction` =0.0011d-5
- real(real64), parameter `codata::proton_mass` =1.67262192369d-27  
*kg*
- real(real64), parameter `codata::u_proton_mass` =0.00000000051d-27  
*kg*
- real(real64), parameter `codata::proton_mass_energy_equivalent` =1.50327761598d-10  
*J.*
- real(real64), parameter `codata::u_proton_mass_energy_equivalent` =0.00000000046d-10  
*J.*
- real(real64), parameter `codata::proton_mass_energy_equivalent_in_mev` =938.27208816d0  
*MeV.*
- real(real64), parameter `codata::u_proton_mass_energy_equivalent_in_mev` =0.00000029d0  
*MeV.*
- real(real64), parameter `codata::proton_mass_in_u` =1.00727646621d0  
*u*
- real(real64), parameter `codata::u_proton_mass_in_u` =0.00000000053d0  
*u*
- real(real64), parameter `codata::proton_molar_mass` =1.00727646627d-3  
*kg mol<sup>-1</sup>*
- real(real64), parameter `codata::u_proton_molar_mass` =0.00000000031d-3  
*kg mol<sup>-1</sup>*
- real(real64), parameter `codata::proton_muon_mass_ratio` =8.88024337d0
- real(real64), parameter `codata::u_proton_muon_mass_ratio` =0.00000020d0
- real(real64), parameter `codata::proton_neutron_mag_mom_ratio` =-1.45989805d0
- real(real64), parameter `codata::u_proton_neutron_mag_mom_ratio` =0.00000034d0
- real(real64), parameter `codata::proton_neutron_mass_ratio` =0.99862347812d0
- real(real64), parameter `codata::u_proton_neutron_mass_ratio` =0.00000000049d0
- real(real64), parameter `codata::proton_relative_atomic_mass` =1.00727646621d0
- real(real64), parameter `codata::u_proton_relative_atomic_mass` =0.00000000053d0
- real(real64), parameter `codata::proton_rms_charge_radius` =8.414d-16  
*m*
- real(real64), parameter `codata::u_proton_rms_charge_radius` =0.019d-16  
*m*
- real(real64), parameter `codata::proton_tau_mass_ratio` =0.528051d0
- real(real64), parameter `codata::u_proton_tau_mass_ratio` =0.000036d0
- real(real64), parameter `codata::quantum_of_circulation` =3.6369475516d-4  
*m<sup>2</sup> s<sup>-1</sup>*
- real(real64), parameter `codata::u_quantum_of_circulation` =0.0000000011d-4  
*m<sup>2</sup> s<sup>-1</sup>*
- real(real64), parameter `codata::quantum_of_circulation_times_2` =7.2738951032d-4  
*m<sup>2</sup> s<sup>-1</sup>*
- real(real64), parameter `codata::u_quantum_of_circulation_times_2` =0.0000000022d-4  
*m<sup>2</sup> s<sup>-1</sup>*
- real(real64), parameter `codata::reduced_compton_wavelength` =3.8615926796d-13  
*m*
- real(real64), parameter `codata::u_reduced_compton_wavelength` =0.0000000012d-13  
*m*
- real(real64), parameter `codata::reduced_muon_compton_wavelength` =1.867594306d-15  
*m*
- real(real64), parameter `codata::u_reduced_muon_compton_wavelength` =0.000000042d-15

- $m$
- real(real64), parameter `codata::reduced_neutron_compton_wavelength` =2.1001941552d-16
- $m$
- real(real64), parameter `codata::u_reduced_neutron_compton_wavelength` =0.0000000012d-16
- $m$
- real(real64), parameter `codata::reduced_planck_constant` =1.054571817d-34
- $J\ s.$
- real(real64), parameter `codata::u_reduced_planck_constant` =0.0d0
- $J\ s.$
- real(real64), parameter `codata::reduced_planck_constant_in_ev_s` =6.582119569d-16
- $eV\ s$
- real(real64), parameter `codata::u_reduced_planck_constant_in_ev_s` =0.0d0
- $eV\ s$
- real(real64), parameter `codata::reduced_planck_constant_times_c_in_mev_fm` =197.3269804d0
- $MeV\ fm.$
- real(real64), parameter `codata::u_reduced_planck_constant_times_c_in_mev_fm` =0.0d0
- $MeV\ fm.$
- real(real64), parameter `codata::reduced_proton_compton_wavelength` =2.10308910336d-16
- $m$
- real(real64), parameter `codata::u_reduced_proton_compton_wavelength` =0.00000000064d-16
- $m$
- real(real64), parameter `codata::reduced_tau_compton_wavelength` =1.110538d-16
- $m$
- real(real64), parameter `codata::u_reduced_tau_compton_wavelength` =0.000075d-16
- $m$
- real(real64), parameter `codata::rydberg_constant` =10973731.568160d0
- $m^{-1}$
- real(real64), parameter `codata::u_rydberg_constant` =0.000021d0
- $m^{-1}$
- real(real64), parameter `codata::rydberg_constant_times_c_in_hz` =3.2898419602508d15
- $Hz.$
- real(real64), parameter `codata::u_rydberg_constant_times_c_in_hz` =0.000000000064d15
- $Hz.$
- real(real64), parameter `codata::rydberg_constant_times_hc_in_ev` =13.605693122994d0
- $eV$
- real(real64), parameter `codata::u_rydberg_constant_times_hc_in_ev` =0.000000000026d0
- $eV$
- real(real64), parameter `codata::rydberg_constant_times_hc_in_j` =2.1798723611035d-18
- $J.$
- real(real64), parameter `codata::u_rydberg_constant_times_hc_in_j` =0.000000000042d-18
- $J.$
- real(real64), parameter `codata::sackur_tetrode_constant_1_k_100_kpa` =-1.15170753706d0
- real(real64), parameter `codata::u_sackur_tetrode_constant_1_k_100_kpa` =0.00000000045d0
- real(real64), parameter `codata::sackur_tetrode_constant_1_k_101_325_kpa` =-1.16487052358d0
- real(real64), parameter `codata::u_sackur_tetrode_constant_1_k_101_325_kpa` =0.00000000045d0
- real(real64), parameter `codata::second_radiation_constant` =1.438776877d-2
- $m\ K$
- real(real64), parameter `codata::u_second_radiation_constant` =0.0d0
- $m\ K$
- real(real64), parameter `codata::shielded_helion_gyromag_ratio` =2.037894569d8
- $s^{-1}\ T^{-1}$

- real(real64), parameter `codata::u_shielded_helion_gyromag__ratio` =0.000000024d8  
 $s^{-1} T^{-1}$
- real(real64), parameter `codata::shielded_helion_gyromag__ratio_in_mhz_t` =32.43409942d0  
 $MHz T^{-1}$ .
- real(real64), parameter `codata::u_shielded_helion_gyromag__ratio_in_mhz_t` =0.000000038d0  
 $MHz T^{-1}$ .
- real(real64), parameter `codata::shielded_helion_mag__mom` =-1.074553090d-26  
 $J T^{-1}$ .
- real(real64), parameter `codata::u_shielded_helion_mag__mom` =0.000000013d-26  
 $J T^{-1}$ .
- real(real64), parameter `codata::shielded_helion_mag__mom__to_bohr_magneton_ratio` =-1.158671471d-3
- real(real64), parameter `codata::u_shielded_helion_mag__mom__to_bohr_magneton_ratio` =0.000000014d-3
- real(real64), parameter `codata::shielded_helion_mag__mom__to_nuclear_magneton_ratio` =-2.127497719d0
- real(real64), parameter `codata::u_shielded_helion_mag__mom__to_nuclear_magneton_ratio` =0.↵  
0000000025d0
- real(real64), parameter `codata::shielded_helion_to_proton_mag__mom__ratio` =-0.7617665618d0
- real(real64), parameter `codata::u_shielded_helion_to_proton_mag__mom__ratio` =0.0000000089d0
- real(real64), parameter `codata::shielded_helion_to_shielded_proton_mag__mom__ratio` =-0.7617861313d0
- real(real64), parameter `codata::u_shielded_helion_to_shielded_proton_mag__mom__ratio` =0.0000000033d0
- real(real64), parameter `codata::shielded_proton_gyromag__ratio` =2.675153151d8  
 $s^{-1} T^{-1}$
- real(real64), parameter `codata::u_shielded_proton_gyromag__ratio` =0.000000029d8  
 $s^{-1} T^{-1}$
- real(real64), parameter `codata::shielded_proton_gyromag__ratio_in_mhz_t` =42.57638474d0  
 $MHz T^{-1}$ .
- real(real64), parameter `codata::u_shielded_proton_gyromag__ratio_in_mhz_t` =0.000000046d0  
 $MHz T^{-1}$ .
- real(real64), parameter `codata::shielded_proton_mag__mom` =1.410570560d-26  
 $J T^{-1}$ .
- real(real64), parameter `codata::u_shielded_proton_mag__mom` =0.000000015d-26  
 $J T^{-1}$ .
- real(real64), parameter `codata::shielded_proton_mag__mom__to_bohr_magneton_ratio` =1.520993128d-3
- real(real64), parameter `codata::u_shielded_proton_mag__mom__to_bohr_magneton_ratio` =0.000000017d-3
- real(real64), parameter `codata::shielded_proton_mag__mom__to_nuclear_magneton_ratio` =2.792775599d0
- real(real64), parameter `codata::u_shielded_proton_mag__mom__to_nuclear_magneton_ratio` =0.↵  
0000000030d0
- real(real64), parameter `codata::shielding_difference_of_d_and_p_in_hd` =2.0200d-8
- real(real64), parameter `codata::u_shielding_difference_of_d_and_p_in_hd` =0.0020d-8
- real(real64), parameter `codata::shielding_difference_of_t_and_p_in_ht` =2.4140d-8
- real(real64), parameter `codata::u_shielding_difference_of_t_and_p_in_ht` =0.0020d-8
- real(real64), parameter `codata::speed_of_light_in_vacuum` =299792458.0d0  
 $m s^{-1}$
- real(real64), parameter `codata::u_speed_of_light_in_vacuum` =0.0d0  
 $m s^{-1}$
- real(real64), parameter `codata::standard_acceleration_of_gravity` =9.80665d0  
 $m s^{-2}$
- real(real64), parameter `codata::u_standard_acceleration_of_gravity` =0.0d0  
 $m s^{-2}$
- real(real64), parameter `codata::standard_atmosphere` =101325.0d0  
 $Pa$ .

- real(real64), parameter `codata::u_standard_atmosphere` =0.0d0  
*Pa.*
- real(real64), parameter `codata::standard_state_pressure` =100000.0d0  
*Pa.*
- real(real64), parameter `codata::u_standard_state_pressure` =0.0d0  
*Pa.*
- real(real64), parameter `codata::stefan_boltzmann_constant` =5.670374419d-8  
 $W\ m^{-2}\ K^{-4}$ .
- real(real64), parameter `codata::u_stefan_boltzmann_constant` =0.0d0  
 $W\ m^{-2}\ K^{-4}$ .
- real(real64), parameter `codata::tau_compton_wavelength` =6.97771d-16  
*m*
- real(real64), parameter `codata::u_tau_compton_wavelength` =0.00047d-16  
*m*
- real(real64), parameter `codata::tau_electron_mass_ratio` =3477.23d0
- real(real64), parameter `codata::u_tau_electron_mass_ratio` =0.23d0
- real(real64), parameter `codata::tau_energy_equivalent` =1776.86d0  
*MeV.*
- real(real64), parameter `codata::u_tau_energy_equivalent` =0.12d0  
*MeV.*
- real(real64), parameter `codata::tau_mass` =3.16754d-27  
*kg*
- real(real64), parameter `codata::u_tau_mass` =0.00021d-27  
*kg*
- real(real64), parameter `codata::tau_mass_energy_equivalent` =2.84684d-10  
*J.*
- real(real64), parameter `codata::u_tau_mass_energy_equivalent` =0.00019d-10  
*J.*
- real(real64), parameter `codata::tau_mass_in_u` =1.90754d0  
*u*
- real(real64), parameter `codata::u_tau_mass_in_u` =0.00013d0  
*u*
- real(real64), parameter `codata::tau_molar_mass` =1.90754d-3  
 $kg\ mol^{-1}$
- real(real64), parameter `codata::u_tau_molar_mass` =0.00013d-3  
 $kg\ mol^{-1}$
- real(real64), parameter `codata::tau_muon_mass_ratio` =16.8170d0
- real(real64), parameter `codata::u_tau_muon_mass_ratio` =0.0011d0
- real(real64), parameter `codata::tau_neutron_mass_ratio` =1.89115d0
- real(real64), parameter `codata::u_tau_neutron_mass_ratio` =0.00013d0
- real(real64), parameter `codata::tau_proton_mass_ratio` =1.89376d0
- real(real64), parameter `codata::u_tau_proton_mass_ratio` =0.00013d0
- real(real64), parameter `codata::thomson_cross_section` =6.6524587321d-29  
 $m^2$
- real(real64), parameter `codata::u_thomson_cross_section` =0.0000000060d-29  
 $m^2$
- real(real64), parameter `codata::triton_electron_mass_ratio` =5496.92153573d0
- real(real64), parameter `codata::u_triton_electron_mass_ratio` =0.00000027d0
- real(real64), parameter `codata::triton_g_factor` =5.957924931d0
- real(real64), parameter `codata::u_triton_g_factor` =0.000000012d0
- real(real64), parameter `codata::triton_mag_mom` =1.5046095202d-26

- $J\ T^{-1}$ .
- real(real64), parameter `codata::u_triton_mag__mom` =0.0000000030d-26
- $J\ T^{-1}$ .
- real(real64), parameter `codata::triton_mag__mom__to_bohr_magneton_ratio` =1.6223936651d-3
- real(real64), parameter `codata::u_triton_mag__mom__to_bohr_magneton_ratio` =0.0000000032d-3
- real(real64), parameter `codata::triton_mag__mom__to_nuclear_magneton_ratio` =2.9789624656d0
- real(real64), parameter `codata::u_triton_mag__mom__to_nuclear_magneton_ratio` =0.0000000059d0
- real(real64), parameter `codata::triton_mass` =5.0073567446d-27
- $kg$
- real(real64), parameter `codata::u_triton_mass` =0.0000000015d-27
- $kg$
- real(real64), parameter `codata::triton_mass_energy_equivalent` =4.5003878060d-10
- $J$ .
- real(real64), parameter `codata::u_triton_mass_energy_equivalent` =0.0000000014d-10
- $J$ .
- real(real64), parameter `codata::triton_mass_energy_equivalent_in_mev` =2808.92113298d0
- $MeV$ .
- real(real64), parameter `codata::u_triton_mass_energy_equivalent_in_mev` =0.00000085d0
- $MeV$ .
- real(real64), parameter `codata::triton_mass_in_u` =3.01550071621d0
- $u$
- real(real64), parameter `codata::u_triton_mass_in_u` =0.00000000012d0
- $u$
- real(real64), parameter `codata::triton_molar_mass` =3.01550071517d-3
- $kg\ mol^{-1}$
- real(real64), parameter `codata::u_triton_molar_mass` =0.00000000092d-3
- $kg\ mol^{-1}$
- real(real64), parameter `codata::triton_proton_mass_ratio` =2.99371703414d0
- real(real64), parameter `codata::u_triton_proton_mass_ratio` =0.00000000015d0
- real(real64), parameter `codata::triton_relative_atomic_mass` =3.01550071621d0
- real(real64), parameter `codata::u_triton_relative_atomic_mass` =0.00000000012d0
- real(real64), parameter `codata::triton_to_proton_mag__mom__ratio` =1.0666399191d0
- real(real64), parameter `codata::u_triton_to_proton_mag__mom__ratio` =0.0000000021d0
- real(real64), parameter `codata::unified_atomic_mass_unit` =1.66053906660d-27
- $kg$
- real(real64), parameter `codata::u_unified_atomic_mass_unit` =0.00000000050d-27
- $kg$
- real(real64), parameter `codata::vacuum_electric_permittivity` =8.8541878128d-12
- $F\ m^{-1}$ .
- real(real64), parameter `codata::u_vacuum_electric_permittivity` =0.0000000013d-12
- $F\ m^{-1}$ .
- real(real64), parameter `codata::vacuum_mag__permeability` =1.25663706212d-6
- $N\ A^{-2}$ .
- real(real64), parameter `codata::u_vacuum_mag__permeability` =0.00000000019d-6
- $N\ A^{-2}$ .
- real(real64), parameter `codata::von_klitzing_constant` =25812.80745d0
- $ohm$
- real(real64), parameter `codata::u_von_klitzing_constant` =0.0d0
- $ohm$
- real(real64), parameter `codata::weak_mixing_angle` =0.22290d0
- real(real64), parameter `codata::u_weak_mixing_angle` =0.00030d0
- real(real64), parameter `codata::wien_frequency_displacement_law_constant` =5.878925757d10

- $\text{Hz K}^{-1}$ .
- `real(real64), parameter codata::u_wien_frequency_displacement_law_constant =0.0d0`
- $\text{Hz K}^{-1}$ .
- `real(real64), parameter codata::wien_wavelength_displacement_law_constant =2.897771955d-3`
- $\text{m K}$
- `real(real64), parameter codata::u_wien_wavelength_displacement_law_constant =0.0d0`
- $\text{m K}$
- `real(real64), parameter codata::w_to_z_mass_ratio =0.88153d0`
- `real(real64), parameter codata::u_w_to_z_mass_ratio =0.00017d0`

### 17.16.1 Detailed Description

Codata module - autogenerated.

Definition in file [fcodata.f90](#).

## 17.17 fcodata.f90

[Go to the documentation of this file.](#)

```

00001
00003
00004
00006 module codata
00007 use iso_fortran_env
00008 implicit none
00009
00010 real(real64), parameter:: &
00011 alpha_particle_electron_mass_ratio=7294.29954142d0
00012 real(real64), parameter :: &
00013 u_alpha_particle_electron_mass_ratio=0.00000024d0
00014
00015 real(real64), parameter:: &
00016 alpha_particle_mass=6.6446573357d-27
00017 real(real64), parameter :: &
00018 u_alpha_particle_mass=0.0000000020d-27
00019
00020 real(real64), parameter:: &
00021 alpha_particle_mass_energy_equivalent=5.9719201914d-10
00022 real(real64), parameter :: &
00023 u_alpha_particle_mass_energy_equivalent=0.0000000018d-10
00024
00025 real(real64), parameter:: &
00026 alpha_particle_mass_energy_equivalent_in_mev=3727.3794066d0
00027 real(real64), parameter :: &
00028 u_alpha_particle_mass_energy_equivalent_in_mev=0.0000011d0
00029
00030 real(real64), parameter:: &
00031 alpha_particle_mass_in_u=4.001506179127d0
00032 real(real64), parameter :: &
00033 u_alpha_particle_mass_in_u=0.000000000063d0
00034
00035 real(real64), parameter:: &
00036 alpha_particle_molar_mass=4.0015061777d-3
00037 real(real64), parameter :: &
00038 u_alpha_particle_molar_mass=0.0000000012d-3
00039
00040 real(real64), parameter:: &
00041 alpha_particle_proton_mass_ratio=3.97259969009d0
00042 real(real64), parameter :: &
00043 u_alpha_particle_proton_mass_ratio=0.00000000022d0
00044
00045 real(real64), parameter:: &
00046 alpha_particle_relative_atomic_mass=4.001506179127d0
00047 real(real64), parameter :: &
00048 u_alpha_particle_relative_atomic_mass=0.000000000063d0
00049
00050 real(real64), parameter:: &
00051 angstrom_star=1.00001495d-10
00052 real(real64), parameter :: &
00053 u_angstrom_star=0.00000090d-10

```

```
00054
00055 real(real64), parameter:: &
00056 atomic_mass_constant=1.66053906660d-27
00057 real(real64), parameter :: &
00058 u_atomic_mass_constant=0.0000000050d-27
00059
00060 real(real64), parameter:: &
00061 atomic_mass_constant_energy_equivalent=1.49241808560d-10
00062 real(real64), parameter :: &
00063 u_atomic_mass_constant_energy_equivalent=0.0000000045d-10
00064
00065 real(real64), parameter:: &
00066 atomic_mass_constant_energy_equivalent_in_mev=931.49410242d0
00067 real(real64), parameter :: &
00068 u_atomic_mass_constant_energy_equivalent_in_mev=0.00000028d0
00069
00070 real(real64), parameter:: &
00071 atomic_mass_unit_electron_volt_relationship=9.3149410242d8
00072 real(real64), parameter :: &
00073 u_atomic_mass_unit_electron_volt_relationship=0.000000028d8
00074
00075 real(real64), parameter:: &
00076 atomic_mass_unit_hartree_relationship=3.4231776874d7
00077 real(real64), parameter :: &
00078 u_atomic_mass_unit_hartree_relationship=0.000000010d7
00079
00080 real(real64), parameter:: &
00081 atomic_mass_unit_hertz_relationship=2.25234271871d23
00082 real(real64), parameter :: &
00083 u_atomic_mass_unit_hertz_relationship=0.0000000068d23
00084
00085 real(real64), parameter:: &
00086 atomic_mass_unit_inverse_meter_relationship=7.5130066104d14
00087 real(real64), parameter :: &
00088 u_atomic_mass_unit_inverse_meter_relationship=0.000000023d14
00089
00090 real(real64), parameter:: &
00091 atomic_mass_unit_joule_relationship=1.49241808560d-10
00092 real(real64), parameter :: &
00093 u_atomic_mass_unit_joule_relationship=0.0000000045d-10
00094
00095 real(real64), parameter:: &
00096 atomic_mass_unit_kelvin_relationship=1.08095401916d13
00097 real(real64), parameter :: &
00098 u_atomic_mass_unit_kelvin_relationship=0.0000000033d13
00099
00100 real(real64), parameter:: &
00101 atomic_mass_unit_kilogram_relationship=1.66053906660d-27
00102 real(real64), parameter :: &
00103 u_atomic_mass_unit_kilogram_relationship=0.0000000050d-27
00104
00105 real(real64), parameter:: &
00106 atomic_unit_of_1st_hyperpolarizability=3.2063613061d-53
00107 real(real64), parameter :: &
00108 u_atomic_unit_of_1st_hyperpolarizability=0.000000015d-53
00109
00110 real(real64), parameter:: &
00111 atomic_unit_of_2nd_hyperpolarizability=6.2353799905d-65
00112 real(real64), parameter :: &
00113 u_atomic_unit_of_2nd_hyperpolarizability=0.000000038d-65
00114
00115 real(real64), parameter:: &
00116 atomic_unit_of_action=1.054571817d-34
00117 real(real64), parameter :: &
00118 u_atomic_unit_of_action=0.0d0
00119
00120 real(real64), parameter:: &
00121 atomic_unit_of_charge=1.602176634d-19
00122 real(real64), parameter :: &
00123 u_atomic_unit_of_charge=0.0d0
00124
00125 real(real64), parameter:: &
00126 atomic_unit_of_charge_density=1.08120238457d12
00127 real(real64), parameter :: &
00128 u_atomic_unit_of_charge_density=0.0000000049d12
00129
00130 real(real64), parameter:: &
00131 atomic_unit_of_current=6.623618237510d-3
00132 real(real64), parameter :: &
00133 u_atomic_unit_of_current=0.00000000013d-3
00134
00135 real(real64), parameter:: &
00136 atomic_unit_of_electric_dipole_mom=8.4783536255d-30
00137 real(real64), parameter :: &
00138 u_atomic_unit_of_electric_dipole_mom=0.000000013d-30
00139
00140 real(real64), parameter:: &
```



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00141 atomic_unit_of_electric_field=5.14220674763d11
00142 real(real64), parameter :: &
00143 u_atomic_unit_of_electric_field=0.00000000078d11
00144
00145 real(real64), parameter :: &
00146 atomic_unit_of_electric_field_gradient=9.7173624292d21
00147 real(real64), parameter :: &
00148 u_atomic_unit_of_electric_field_gradient=0.0000000029d21
00149
00150 real(real64), parameter :: &
00151 atomic_unit_of_electric_polarizability=1.64877727436d-41
00152 real(real64), parameter :: &
00153 u_atomic_unit_of_electric_polarizability=0.0000000050d-41
00154
00155 real(real64), parameter :: &
00156 atomic_unit_of_electric_potential=27.211386245988d0
00157 real(real64), parameter :: &
00158 u_atomic_unit_of_electric_potential=0.00000000053d0
00159
00160 real(real64), parameter :: &
00161 atomic_unit_of_electric_quadrupole_mom=4.4865515246d-40
00162 real(real64), parameter :: &
00163 u_atomic_unit_of_electric_quadrupole_mom=0.0000000014d-40
00164
00165 real(real64), parameter :: &
00166 atomic_unit_of_energy=4.3597447222071d-18
00167 real(real64), parameter :: &
00168 u_atomic_unit_of_energy=0.000000000085d-18
00169
00170 real(real64), parameter :: &
00171 atomic_unit_of_force=8.2387234983d-8
00172 real(real64), parameter :: &
00173 u_atomic_unit_of_force=0.0000000012d-8
00174
00175 real(real64), parameter :: &
00176 atomic_unit_of_length=5.29177210903d-11
00177 real(real64), parameter :: &
00178 u_atomic_unit_of_length=0.00000000080d-11
00179
00180 real(real64), parameter :: &
00181 atomic_unit_of_mag_dipole_mom=1.85480201566d-23
00182 real(real64), parameter :: &
00183 u_atomic_unit_of_mag_dipole_mom=0.00000000056d-23
00184
00185 real(real64), parameter :: &
00186 atomic_unit_of_mag_flux_density=2.35051756758d5
00187 real(real64), parameter :: &
00188 u_atomic_unit_of_mag_flux_density=0.00000000071d5
00189
00190 real(real64), parameter :: &
00191 atomic_unit_of_magnetizability=7.8910366008d-29
00192 real(real64), parameter :: &
00193 u_atomic_unit_of_magnetizability=0.0000000048d-29
00194
00195 real(real64), parameter :: &
00196 atomic_unit_of_mass=9.1093837015d-31
00197 real(real64), parameter :: &
00198 u_atomic_unit_of_mass=0.0000000028d-31
00199
00200 real(real64), parameter :: &
00201 atomic_unit_of_momentum=1.99285191410d-24
00202 real(real64), parameter :: &
00203 u_atomic_unit_of_momentum=0.00000000030d-24
00204
00205 real(real64), parameter :: &
00206 atomic_unit_of_permittivity=1.11265005545d-10
00207 real(real64), parameter :: &
00208 u_atomic_unit_of_permittivity=0.0000000017d-10
00209
00210 real(real64), parameter :: &
00211 atomic_unit_of_time=2.4188843265857d-17
00212 real(real64), parameter :: &
00213 u_atomic_unit_of_time=0.000000000047d-17
00214
00215 real(real64), parameter :: &
00216 atomic_unit_of_velocity=2.18769126364d6
00217 real(real64), parameter :: &
00218 u_atomic_unit_of_velocity=0.00000000033d6
00219
00220 real(real64), parameter :: &
00221 avogadro_constant=6.02214076d23
00222 real(real64), parameter :: &
00223 u_avogadro_constant=0.0d0
00224
00225 real(real64), parameter :: &
00226 bohr_magneton=9.2740100783d-24
00227 real(real64), parameter :: &
```

```
00228 u_bohr_magneton=0.0000000028d-24
00229
00230 real(real64), parameter:: &
00231 bohr_magneton_in_ev_t=5.7883818060d-5
00232 real(real64), parameter :: &
00233 u_bohr_magneton_in_ev_t=0.0000000017d-5
00234
00235 real(real64), parameter:: &
00236 bohr_magneton_in_hz_t=1.39962449361d10
00237 real(real64), parameter :: &
00238 u_bohr_magneton_in_hz_t=0.00000000042d10
00239
00240 real(real64), parameter:: &
00241 bohr_magneton_in_inverse_meter_per_tesla=46.686447783d0
00242 real(real64), parameter :: &
00243 u_bohr_magneton_in_inverse_meter_per_tesla=0.000000014d0
00244
00245 real(real64), parameter:: &
00246 bohr_magneton_in_k_t=0.67171381563d0
00247 real(real64), parameter :: &
00248 u_bohr_magneton_in_k_t=0.00000000020d0
00249
00250 real(real64), parameter:: &
00251 bohr_radius=5.29177210903d-11
00252 real(real64), parameter :: &
00253 u_bohr_radius=0.00000000080d-11
00254
00255 real(real64), parameter:: &
00256 boltzmann_constant=1.380649d-23
00257 real(real64), parameter :: &
00258 u_boltzmann_constant=0.0d0
00259
00260 real(real64), parameter:: &
00261 boltzmann_constant_in_ev_k=8.617333262d-5
00262 real(real64), parameter :: &
00263 u_boltzmann_constant_in_ev_k=0.0d0
00264
00265 real(real64), parameter:: &
00266 boltzmann_constant_in_hz_k=2.083661912d10
00267 real(real64), parameter :: &
00268 u_boltzmann_constant_in_hz_k=0.0d0
00269
00270 real(real64), parameter:: &
00271 boltzmann_constant_in_inverse_meter_per_kelvin=69.50348004d0
00272 real(real64), parameter :: &
00273 u_boltzmann_constant_in_inverse_meter_per_kelvin=0.0d0
00274
00275 real(real64), parameter:: &
00276 characteristic_impedance_of_vacuum=376.730313668d0
00277 real(real64), parameter :: &
00278 u_characteristic_impedance_of_vacuum=0.000000057d0
00279
00280 real(real64), parameter:: &
00281 classical_electron_radius=2.8179403262d-15
00282 real(real64), parameter :: &
00283 u_classical_electron_radius=0.0000000013d-15
00284
00285 real(real64), parameter:: &
00286 compton_wavelength=2.42631023867d-12
00287 real(real64), parameter :: &
00288 u_compton_wavelength=0.00000000073d-12
00289
00290 real(real64), parameter:: &
00291 conductance_quantum=7.748091729d-5
00292 real(real64), parameter :: &
00293 u_conductance_quantum=0.0d0
00294
00295 real(real64), parameter:: &
00296 conventional_value_of_ampere_90=1.00000008887d0
00297 real(real64), parameter :: &
00298 u_conventional_value_of_ampere_90=0.0d0
00299
00300 real(real64), parameter:: &
00301 conventional_value_of_coulomb_90=1.00000008887d0
00302 real(real64), parameter :: &
00303 u_conventional_value_of_coulomb_90=0.0d0
00304
00305 real(real64), parameter:: &
00306 conventional_value_of_farad_90=0.99999998220d0
00307 real(real64), parameter :: &
00308 u_conventional_value_of_farad_90=0.0d0
00309
00310 real(real64), parameter:: &
00311 conventional_value_of_henry_90=1.00000001779d0
00312 real(real64), parameter :: &
00313 u_conventional_value_of_henry_90=0.0d0
00314
```

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00315 real(real64), parameter:: &
00316 conventional_value_of_josephson_constant=483597.9d9
00317 real(real64), parameter :: &
00318 u_conventional_value_of_josephson_constant=0.0d0
00319
00320 real(real64), parameter:: &
00321 conventional_value_of_ohm_90=1.00000001779d0
00322 real(real64), parameter :: &
00323 u_conventional_value_of_ohm_90=0.0d0
00324
00325 real(real64), parameter:: &
00326 conventional_value_of_volt_90=1.00000010666d0
00327 real(real64), parameter :: &
00328 u_conventional_value_of_volt_90=0.0d0
00329
00330 real(real64), parameter:: &
00331 conventional_value_of_von_klitzing_constant=25812.807d0
00332 real(real64), parameter :: &
00333 u_conventional_value_of_von_klitzing_constant=0.0d0
00334
00335 real(real64), parameter:: &
00336 conventional_value_of_watt_90=1.00000019553d0
00337 real(real64), parameter :: &
00338 u_conventional_value_of_watt_90=0.0d0
00339
00340 real(real64), parameter:: &
00341 copper_x_unit=1.00207697d-13
00342 real(real64), parameter :: &
00343 u_copper_x_unit=0.00000028d-13
00344
00345 real(real64), parameter:: &
00346 deuteron_electron_mag_mom_ratio=-4.664345551d-4
00347 real(real64), parameter :: &
00348 u_deuteron_electron_mag_mom_ratio=0.000000012d-4
00349
00350 real(real64), parameter:: &
00351 deuteron_electron_mass_ratio=3670.48296788d0
00352 real(real64), parameter :: &
00353 u_deuteron_electron_mass_ratio=0.00000013d0
00354
00355 real(real64), parameter:: &
00356 deuteron_g_factor=0.8574382338d0
00357 real(real64), parameter :: &
00358 u_deuteron_g_factor=0.0000000022d0
00359
00360 real(real64), parameter:: &
00361 deuteron_mag_mom=4.330735094d-27
00362 real(real64), parameter :: &
00363 u_deuteron_mag_mom=0.000000011d-27
00364
00365 real(real64), parameter:: &
00366 deuteron_mag_mom_to_bohr_magneton_ratio=4.669754570d-4
00367 real(real64), parameter :: &
00368 u_deuteron_mag_mom_to_bohr_magneton_ratio=0.000000012d-4
00369
00370 real(real64), parameter:: &
00371 deuteron_mag_mom_to_nuclear_magneton_ratio=0.8574382338d0
00372 real(real64), parameter :: &
00373 u_deuteron_mag_mom_to_nuclear_magneton_ratio=0.0000000022d0
00374
00375 real(real64), parameter:: &
00376 deuteron_mass=3.3435837724d-27
00377 real(real64), parameter :: &
00378 u_deuteron_mass=0.0000000010d-27
00379
00380 real(real64), parameter:: &
00381 deuteron_mass_energy_equivalent=3.00506323102d-10
00382 real(real64), parameter :: &
00383 u_deuteron_mass_energy_equivalent=0.00000000091d-10
00384
00385 real(real64), parameter:: &
00386 deuteron_mass_energy_equivalent_in_mev=1875.61294257d0
00387 real(real64), parameter :: &
00388 u_deuteron_mass_energy_equivalent_in_mev=0.00000057d0
00389
00390 real(real64), parameter:: &
00391 deuteron_mass_in_u=2.013553212745d0
00392 real(real64), parameter :: &
00393 u_deuteron_mass_in_u=0.00000000040d0
00394
00395 real(real64), parameter:: &
00396 deuteron_molar_mass=2.01355321205d-3
00397 real(real64), parameter :: &
00398 u_deuteron_molar_mass=0.00000000061d-3
00399
00400 real(real64), parameter:: &
00401 deuteron_neutron_mag_mom_ratio=-0.44820653d0
```

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00402 real(real64), parameter :: &
00403 u_deuteron_neutron_mag__mom__ratio=0.00000011d0
00404
00405 real(real64), parameter :: &
00406 deuteron_proton_mag__mom__ratio=0.30701220939d0
00407 real(real64), parameter :: &
00408 u_deuteron_proton_mag__mom__ratio=0.00000000079d0
00409
00410 real(real64), parameter :: &
00411 deuteron_proton_mass_ratio=1.99900750139d0
00412 real(real64), parameter :: &
00413 u_deuteron_proton_mass_ratio=0.00000000011d0
00414
00415 real(real64), parameter :: &
00416 deuteron_relative_atomic_mass=2.013553212745d0
00417 real(real64), parameter :: &
00418 u_deuteron_relative_atomic_mass=0.00000000040d0
00419
00420 real(real64), parameter :: &
00421 deuteron_rms_charge_radius=2.12799d-15
00422 real(real64), parameter :: &
00423 u_deuteron_rms_charge_radius=0.00074d-15
00424
00425 real(real64), parameter :: &
00426 electron_charge_to_mass_quotient=-1.75882001076d11
00427 real(real64), parameter :: &
00428 u_electron_charge_to_mass_quotient=0.00000000053d11
00429
00430 real(real64), parameter :: &
00431 electron_deuteron_mag__mom__ratio=-2143.9234915d0
00432 real(real64), parameter :: &
00433 u_electron_deuteron_mag__mom__ratio=0.0000056d0
00434
00435 real(real64), parameter :: &
00436 electron_deuteron_mass_ratio=2.724437107462d-4
00437 real(real64), parameter :: &
00438 u_electron_deuteron_mass_ratio=0.00000000096d-4
00439
00440 real(real64), parameter :: &
00441 electron_g_factor=-2.00231930436256d0
00442 real(real64), parameter :: &
00443 u_electron_g_factor=0.0000000000035d0
00444
00445 real(real64), parameter :: &
00446 electron_gyromag__ratio=1.76085963023d11
00447 real(real64), parameter :: &
00448 u_electron_gyromag__ratio=0.00000000053d11
00449
00450 real(real64), parameter :: &
00451 electron_gyromag__ratio_in_mhz_t=28024.9514242d0
00452 real(real64), parameter :: &
00453 u_electron_gyromag__ratio_in_mhz_t=0.0000085d0
00454
00455 real(real64), parameter :: &
00456 electron_helion_mass_ratio=1.819543074573d-4
00457 real(real64), parameter :: &
00458 u_electron_helion_mass_ratio=0.00000000079d-4
00459
00460 real(real64), parameter :: &
00461 electron_mag__mom__=-9.2847647043d-24
00462 real(real64), parameter :: &
00463 u_electron_mag__mom__=0.0000000028d-24
00464
00465 real(real64), parameter :: &
00466 electron_mag__mom__anomaly=1.15965218128d-3
00467 real(real64), parameter :: &
00468 u_electron_mag__mom__anomaly=0.00000000018d-3
00469
00470 real(real64), parameter :: &
00471 electron_mag__mom__to_bohr_magneton_ratio=-1.00115965218128d0
00472 real(real64), parameter :: &
00473 u_electron_mag__mom__to_bohr_magneton_ratio=0.0000000000018d0
00474
00475 real(real64), parameter :: &
00476 electron_mag__mom__to_nuclear_magneton_ratio=-1838.28197188d0
00477 real(real64), parameter :: &
00478 u_electron_mag__mom__to_nuclear_magneton_ratio=0.00000011d0
00479
00480 real(real64), parameter :: &
00481 electron_mass=9.1093837015d-31
00482 real(real64), parameter :: &
00483 u_electron_mass=0.0000000028d-31
00484
00485 real(real64), parameter :: &
00486 electron_mass_energy_equivalent=8.1871057769d-14
00487 real(real64), parameter :: &
00488 u_electron_mass_energy_equivalent=0.0000000025d-14
```

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00489
00490 real(real64), parameter:: &
00491 electron_mass_energy_equivalent_in_mev=0.51099895000d0
00492 real(real64), parameter :: &
00493 u_electron_mass_energy_equivalent_in_mev=0.00000000015d0
00494
00495 real(real64), parameter:: &
00496 electron_mass_in_u=5.48579909065d-4
00497 real(real64), parameter :: &
00498 u_electron_mass_in_u=0.00000000016d-4
00499
00500 real(real64), parameter:: &
00501 electron_molar_mass=5.4857990888d-7
00502 real(real64), parameter :: &
00503 u_electron_molar_mass=0.0000000017d-7
00504
00505 real(real64), parameter:: &
00506 electron_muon_mag_mom_ratio=206.7669883d0
00507 real(real64), parameter :: &
00508 u_electron_muon_mag_mom_ratio=0.0000046d0
00509
00510 real(real64), parameter:: &
00511 electron_muon_mass_ratio=4.83633169d-3
00512 real(real64), parameter :: &
00513 u_electron_muon_mass_ratio=0.00000011d-3
00514
00515 real(real64), parameter:: &
00516 electron_neutron_mag_mom_ratio=960.92050d0
00517 real(real64), parameter :: &
00518 u_electron_neutron_mag_mom_ratio=0.00023d0
00519
00520 real(real64), parameter:: &
00521 electron_neutron_mass_ratio=5.4386734424d-4
00522 real(real64), parameter :: &
00523 u_electron_neutron_mass_ratio=0.000000026d-4
00524
00525 real(real64), parameter:: &
00526 electron_proton_mag_mom_ratio=-658.21068789d0
00527 real(real64), parameter :: &
00528 u_electron_proton_mag_mom_ratio=0.00000020d0
00529
00530 real(real64), parameter:: &
00531 electron_proton_mass_ratio=5.44617021487d-4
00532 real(real64), parameter :: &
00533 u_electron_proton_mass_ratio=0.00000000033d-4
00534
00535 real(real64), parameter:: &
00536 electron_relative_atomic_mass=5.48579909065d-4
00537 real(real64), parameter :: &
00538 u_electron_relative_atomic_mass=0.00000000016d-4
00539
00540 real(real64), parameter:: &
00541 electron_tau_mass_ratio=2.87585d-4
00542 real(real64), parameter :: &
00543 u_electron_tau_mass_ratio=0.00019d-4
00544
00545 real(real64), parameter:: &
00546 electron_to_alpha_particle_mass_ratio=1.370933554787d-4
00547 real(real64), parameter :: &
00548 u_electron_to_alpha_particle_mass_ratio=0.00000000045d-4
00549
00550 real(real64), parameter:: &
00551 electron_to_shielded_helion_mag_mom_ratio=864.058257d0
00552 real(real64), parameter :: &
00553 u_electron_to_shielded_helion_mag_mom_ratio=0.000010d0
00554
00555 real(real64), parameter:: &
00556 electron_to_shielded_proton_mag_mom_ratio=-658.2275971d0
00557 real(real64), parameter :: &
00558 u_electron_to_shielded_proton_mag_mom_ratio=0.0000072d0
00559
00560 real(real64), parameter:: &
00561 electron_triton_mass_ratio=1.819200062251d-4
00562 real(real64), parameter :: &
00563 u_electron_triton_mass_ratio=0.00000000090d-4
00564
00565 real(real64), parameter:: &
00566 electron_volt=1.602176634d-19
00567 real(real64), parameter :: &
00568 u_electron_volt=0.0d0
00569
00570 real(real64), parameter:: &
00571 electron_volt_atomic_mass_unit_relationship=1.07354410233d-9
00572 real(real64), parameter :: &
00573 u_electron_volt_atomic_mass_unit_relationship=0.00000000032d-9
00574
00575 real(real64), parameter:: &
```

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00576 electron_volt_hartree_relationship=3.6749322175655d-2
00577 real(real64), parameter :: &
00578 u_electron_volt_hartree_relationship=0.000000000071d-2
00579
00580 real(real64), parameter:: &
00581 electron_volt_hertz_relationship=2.417989242d14
00582 real(real64), parameter :: &
00583 u_electron_volt_hertz_relationship=0.0d0
00584
00585 real(real64), parameter:: &
00586 electron_volt_inverse_meter_relationship=8.065543937d5
00587 real(real64), parameter :: &
00588 u_electron_volt_inverse_meter_relationship=0.0d0
00589
00590 real(real64), parameter:: &
00591 electron_volt_joule_relationship=1.602176634d-19
00592 real(real64), parameter :: &
00593 u_electron_volt_joule_relationship=0.0d0
00594
00595 real(real64), parameter:: &
00596 electron_volt_kelvin_relationship=1.160451812d4
00597 real(real64), parameter :: &
00598 u_electron_volt_kelvin_relationship=0.0d0
00599
00600 real(real64), parameter:: &
00601 electron_volt_kilogram_relationship=1.782661921d-36
00602 real(real64), parameter :: &
00603 u_electron_volt_kilogram_relationship=0.0d0
00604
00605 real(real64), parameter:: &
00606 elementary_charge=1.602176634d-19
00607 real(real64), parameter :: &
00608 u_elementary_charge=0.0d0
00609
00610 real(real64), parameter:: &
00611 elementary_charge_over_h_bar=1.519267447d15
00612 real(real64), parameter :: &
00613 u_elementary_charge_over_h_bar=0.0d0
00614
00615 real(real64), parameter:: &
00616 faraday_constant=96485.33212d0
00617 real(real64), parameter :: &
00618 u_faraday_constant=0.0d0
00619
00620 real(real64), parameter:: &
00621 fermi_coupling_constant=1.1663787d-5
00622 real(real64), parameter :: &
00623 u_fermi_coupling_constant=0.0000006d-5
00624
00625 real(real64), parameter:: &
00626 fine_structure_constant=7.2973525693d-3
00627 real(real64), parameter :: &
00628 u_fine_structure_constant=0.000000011d-3
00629
00630 real(real64), parameter:: &
00631 first_radiation_constant=3.741771852d-16
00632 real(real64), parameter :: &
00633 u_first_radiation_constant=0.0d0
00634
00635 real(real64), parameter:: &
00636 first_radiation_constant_for_spectral_radiance=1.191042972d-16
00637 real(real64), parameter :: &
00638 u_first_radiation_constant_for_spectral_radiance=0.0d0
00639
00640 real(real64), parameter:: &
00641 hartree_atomic_mass_unit_relationship=2.92126232205d-8
00642 real(real64), parameter :: &
00643 u_hartree_atomic_mass_unit_relationship=0.0000000088d-8
00644
00645 real(real64), parameter:: &
00646 hartree_electron_volt_relationship=27.211386245988d0
00647 real(real64), parameter :: &
00648 u_hartree_electron_volt_relationship=0.00000000053d0
00649
00650 real(real64), parameter:: &
00651 hartree_energy=4.3597447222071d-18
00652 real(real64), parameter :: &
00653 u_hartree_energy=0.000000000085d-18
00654
00655 real(real64), parameter:: &
00656 hartree_energy_in_ev=27.211386245988d0
00657 real(real64), parameter :: &
00658 u_hartree_energy_in_ev=0.00000000053d0
00659
00660 real(real64), parameter:: &
00661 hartree_hertz_relationship=6.579683920502d15
00662 real(real64), parameter :: &

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00663 u_hartree_hertz_relationship=0.000000000013d15
00664
00665 real(real64), parameter:: &
00666 hartree_inverse_meter_relationship=2.1947463136320d7
00667 real(real64), parameter :: &
00668 u_hartree_inverse_meter_relationship=0.0000000000043d7
00669
00670 real(real64), parameter:: &
00671 hartree_joule_relationship=4.3597447222071d-18
00672 real(real64), parameter :: &
00673 u_hartree_joule_relationship=0.0000000000085d-18
00674
00675 real(real64), parameter:: &
00676 hartree_kelvin_relationship=3.1577502480407d5
00677 real(real64), parameter :: &
00678 u_hartree_kelvin_relationship=0.0000000000061d5
00679
00680 real(real64), parameter:: &
00681 hartree_kilogram_relationship=4.8508702095432d-35
00682 real(real64), parameter :: &
00683 u_hartree_kilogram_relationship=0.0000000000094d-35
00684
00685 real(real64), parameter:: &
00686 helion_electron_mass_ratio=5495.88528007d0
00687 real(real64), parameter :: &
00688 u_helion_electron_mass_ratio=0.00000024d0
00689
00690 real(real64), parameter:: &
00691 helion_g_factor=-4.255250615d0
00692 real(real64), parameter :: &
00693 u_helion_g_factor=0.00000050d0
00694
00695 real(real64), parameter:: &
00696 helion_mag_mom=-1.074617532d-26
00697 real(real64), parameter :: &
00698 u_helion_mag_mom=0.000000013d-26
00699
00700 real(real64), parameter:: &
00701 helion_mag_mom_to_bohr_magneton_ratio=-1.158740958d-3
00702 real(real64), parameter :: &
00703 u_helion_mag_mom_to_bohr_magneton_ratio=0.000000014d-3
00704
00705 real(real64), parameter:: &
00706 helion_mag_mom_to_nuclear_magneton_ratio=-2.127625307d0
00707 real(real64), parameter :: &
00708 u_helion_mag_mom_to_nuclear_magneton_ratio=0.000000025d0
00709
00710 real(real64), parameter:: &
00711 helion_mass=5.0064127796d-27
00712 real(real64), parameter :: &
00713 u_helion_mass=0.0000000015d-27
00714
00715 real(real64), parameter:: &
00716 helion_mass_energy_equivalent=4.4995394125d-10
00717 real(real64), parameter :: &
00718 u_helion_mass_energy_equivalent=0.000000014d-10
00719
00720 real(real64), parameter:: &
00721 helion_mass_energy_equivalent_in_mev=2808.39160743d0
00722 real(real64), parameter :: &
00723 u_helion_mass_energy_equivalent_in_mev=0.00000085d0
00724
00725 real(real64), parameter:: &
00726 helion_mass_in_u=3.014932247175d0
00727 real(real64), parameter :: &
00728 u_helion_mass_in_u=0.00000000097d0
00729
00730 real(real64), parameter:: &
00731 helion_molar_mass=3.01493224613d-3
00732 real(real64), parameter :: &
00733 u_helion_molar_mass=0.00000000091d-3
00734
00735 real(real64), parameter:: &
00736 helion_proton_mass_ratio=2.99315267167d0
00737 real(real64), parameter :: &
00738 u_helion_proton_mass_ratio=0.0000000013d0
00739
00740 real(real64), parameter:: &
00741 helion_relative_atomic_mass=3.014932247175d0
00742 real(real64), parameter :: &
00743 u_helion_relative_atomic_mass=0.00000000097d0
00744
00745 real(real64), parameter:: &
00746 helion_shielding_shift=5.996743d-5
00747 real(real64), parameter :: &
00748 u_helion_shielding_shift=0.000010d-5
00749
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00750 real(real64), parameter:: &
00751 hertz_atomic_mass_unit_relationship=4.4398216652d-24
00752 real(real64), parameter :: &
00753 u_hertz_atomic_mass_unit_relationship=0.0000000013d-24
00754
00755 real(real64), parameter:: &
00756 hertz_electron_volt_relationship=4.135667696d-15
00757 real(real64), parameter :: &
00758 u_hertz_electron_volt_relationship=0.0d0
00759
00760 real(real64), parameter:: &
00761 hertz_hartree_relationship=1.5198298460570d-16
00762 real(real64), parameter :: &
00763 u_hertz_hartree_relationship=0.000000000029d-16
00764
00765 real(real64), parameter:: &
00766 hertz_inverse_meter_relationship=3.335640951d-9
00767 real(real64), parameter :: &
00768 u_hertz_inverse_meter_relationship=0.0d0
00769
00770 real(real64), parameter:: &
00771 hertz_joule_relationship=6.62607015d-34
00772 real(real64), parameter :: &
00773 u_hertz_joule_relationship=0.0d0
00774
00775 real(real64), parameter:: &
00776 hertz_kelvin_relationship=4.799243073d-11
00777 real(real64), parameter :: &
00778 u_hertz_kelvin_relationship=0.0d0
00779
00780 real(real64), parameter:: &
00781 hertz_kilogram_relationship=7.372497323d-51
00782 real(real64), parameter :: &
00783 u_hertz_kilogram_relationship=0.0d0
00784
00785 real(real64), parameter:: &
00786 hyperfine_transition_frequency_of_cs_133=9192631770.0d0
00787 real(real64), parameter :: &
00788 u_hyperfine_transition_frequency_of_cs_133=0.0d0
00789
00790 real(real64), parameter:: &
00791 inverse_fine_structure_constant=137.035999084d0
00792 real(real64), parameter :: &
00793 u_inverse_fine_structure_constant=0.000000021d0
00794
00795 real(real64), parameter:: &
00796 inverse_meter_atomic_mass_unit_relationship=1.33102505010d-15
00797 real(real64), parameter :: &
00798 u_inverse_meter_atomic_mass_unit_relationship=0.0000000040d-15
00799
00800 real(real64), parameter:: &
00801 inverse_meter_electron_volt_relationship=1.239841984d-6
00802 real(real64), parameter :: &
00803 u_inverse_meter_electron_volt_relationship=0.0d0
00804
00805 real(real64), parameter:: &
00806 inverse_meter_hartree_relationship=4.5563352529120d-8
00807 real(real64), parameter :: &
00808 u_inverse_meter_hartree_relationship=0.000000000088d-8
00809
00810 real(real64), parameter:: &
00811 inverse_meter_hertz_relationship=299792458.0d0
00812 real(real64), parameter :: &
00813 u_inverse_meter_hertz_relationship=0.0d0
00814
00815 real(real64), parameter:: &
00816 inverse_meter_joule_relationship=1.986445857d-25
00817 real(real64), parameter :: &
00818 u_inverse_meter_joule_relationship=0.0d0
00819
00820 real(real64), parameter:: &
00821 inverse_meter_kelvin_relationship=1.438776877d-2
00822 real(real64), parameter :: &
00823 u_inverse_meter_kelvin_relationship=0.0d0
00824
00825 real(real64), parameter:: &
00826 inverse_meter_kilogram_relationship=2.210219094d-42
00827 real(real64), parameter :: &
00828 u_inverse_meter_kilogram_relationship=0.0d0
00829
00830 real(real64), parameter:: &
00831 inverse_of_conductance_quantum=12906.40372d0
00832 real(real64), parameter :: &
00833 u_inverse_of_conductance_quantum=0.0d0
00834
00835 real(real64), parameter:: &
00836 josephson_constant=483597.8484d9
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00837 real(real64), parameter :: &
00838 u_josephson_constant=0.0d0
00839
00840 real(real64), parameter :: &
00841 joule_atomic_mass_unit_relationship=6.7005352565d9
00842 real(real64), parameter :: &
00843 u_joule_atomic_mass_unit_relationship=0.0000000020d9
00844
00845 real(real64), parameter :: &
00846 joule_electron_volt_relationship=6.241509074d18
00847 real(real64), parameter :: &
00848 u_joule_electron_volt_relationship=0.0d0
00849
00850 real(real64), parameter :: &
00851 joule_hartree_relationship=2.2937122783963d17
00852 real(real64), parameter :: &
00853 u_joule_hartree_relationship=0.000000000045d17
00854
00855 real(real64), parameter :: &
00856 joule_hertz_relationship=1.509190179d33
00857 real(real64), parameter :: &
00858 u_joule_hertz_relationship=0.0d0
00859
00860 real(real64), parameter :: &
00861 joule_inverse_meter_relationship=5.034116567d24
00862 real(real64), parameter :: &
00863 u_joule_inverse_meter_relationship=0.0d0
00864
00865 real(real64), parameter :: &
00866 joule_kelvin_relationship=7.242970516d22
00867 real(real64), parameter :: &
00868 u_joule_kelvin_relationship=0.0d0
00869
00870 real(real64), parameter :: &
00871 joule_kilogram_relationship=1.112650056d-17
00872 real(real64), parameter :: &
00873 u_joule_kilogram_relationship=0.0d0
00874
00875 real(real64), parameter :: &
00876 kelvin_atomic_mass_unit_relationship=9.2510873014d-14
00877 real(real64), parameter :: &
00878 u_kelvin_atomic_mass_unit_relationship=0.0000000028d-14
00879
00880 real(real64), parameter :: &
00881 kelvin_electron_volt_relationship=8.617333262d-5
00882 real(real64), parameter :: &
00883 u_kelvin_electron_volt_relationship=0.0d0
00884
00885 real(real64), parameter :: &
00886 kelvin_hartree_relationship=3.1668115634556d-6
00887 real(real64), parameter :: &
00888 u_kelvin_hartree_relationship=0.000000000061d-6
00889
00890 real(real64), parameter :: &
00891 kelvin_hertz_relationship=2.083661912d10
00892 real(real64), parameter :: &
00893 u_kelvin_hertz_relationship=0.0d0
00894
00895 real(real64), parameter :: &
00896 kelvin_inverse_meter_relationship=69.50348004d0
00897 real(real64), parameter :: &
00898 u_kelvin_inverse_meter_relationship=0.0d0
00899
00900 real(real64), parameter :: &
00901 kelvin_joule_relationship=1.380649d-23
00902 real(real64), parameter :: &
00903 u_kelvin_joule_relationship=0.0d0
00904
00905 real(real64), parameter :: &
00906 kelvin_kilogram_relationship=1.536179187d-40
00907 real(real64), parameter :: &
00908 u_kelvin_kilogram_relationship=0.0d0
00909
00910 real(real64), parameter :: &
00911 kilogram_atomic_mass_unit_relationship=6.0221407621d26
00912 real(real64), parameter :: &
00913 u_kilogram_atomic_mass_unit_relationship=0.0000000018d26
00914
00915 real(real64), parameter :: &
00916 kilogram_electron_volt_relationship=5.609588603d35
00917 real(real64), parameter :: &
00918 u_kilogram_electron_volt_relationship=0.0d0
00919
00920 real(real64), parameter :: &
00921 kilogram_hartree_relationship=2.0614857887409d34
00922 real(real64), parameter :: &
00923 u_kilogram_hartree_relationship=0.000000000040d34
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00924
00925 real(real64), parameter:: &
00926 kilogram_hertz_relationship=1.356392489d50
00927 real(real64), parameter :: &
00928 u_kilogram_hertz_relationship=0.0d0
00929
00930 real(real64), parameter:: &
00931 kilogram_inverse_meter_relationship=4.524438335d41
00932 real(real64), parameter :: &
00933 u_kilogram_inverse_meter_relationship=0.0d0
00934
00935 real(real64), parameter:: &
00936 kilogram_joule_relationship=8.987551787d16
00937 real(real64), parameter :: &
00938 u_kilogram_joule_relationship=0.0d0
00939
00940 real(real64), parameter:: &
00941 kilogram_kelvin_relationship=6.509657260d39
00942 real(real64), parameter :: &
00943 u_kilogram_kelvin_relationship=0.0d0
00944
00945 real(real64), parameter:: &
00946 lattice_parameter_of_silicon=5.431020511d-10
00947 real(real64), parameter :: &
00948 u_lattice_parameter_of_silicon=0.000000089d-10
00949
00950 real(real64), parameter:: &
00951 lattice_spacing_of_ideal_si__220=1.920155716d-10
00952 real(real64), parameter :: &
00953 u_lattice_spacing_of_ideal_si__220=0.000000032d-10
00954
00955 real(real64), parameter:: &
00956 loschmidt_constant__273_15_k__100_kpa=2.651645804d25
00957 real(real64), parameter :: &
00958 u_loschmidt_constant__273_15_k__100_kpa=0.0d0
00959
00960 real(real64), parameter:: &
00961 loschmidt_constant__273_15_k__101_325_kpa=2.686780111d25
00962 real(real64), parameter :: &
00963 u_loschmidt_constant__273_15_k__101_325_kpa=0.0d0
00964
00965 real(real64), parameter:: &
00966 luminous_efficacy=683.0d0
00967 real(real64), parameter :: &
00968 u_luminous_efficacy=0.0d0
00969
00970 real(real64), parameter:: &
00971 mag_flux_quantum=2.067833848d-15
00972 real(real64), parameter :: &
00973 u_mag_flux_quantum=0.0d0
00974
00975 real(real64), parameter:: &
00976 molar_gas_constant=8.314462618d0
00977 real(real64), parameter :: &
00978 u_molar_gas_constant=0.0d0
00979
00980 real(real64), parameter:: &
00981 molar_mass_constant=0.99999999965d-3
00982 real(real64), parameter :: &
00983 u_molar_mass_constant=0.00000000030d-3
00984
00985 real(real64), parameter:: &
00986 molar_mass_of_carbon_12=11.9999999958d-3
00987 real(real64), parameter :: &
00988 u_molar_mass_of_carbon_12=0.0000000036d-3
00989
00990 real(real64), parameter:: &
00991 molar_planck_constant=3.990312712d-10
00992 real(real64), parameter :: &
00993 u_molar_planck_constant=0.0d0
00994
00995 real(real64), parameter:: &
00996 molar_volume_of_ideal_gas__273_15_k__100_kpa=22.71095464d-3
00997 real(real64), parameter :: &
00998 u_molar_volume_of_ideal_gas__273_15_k__100_kpa=0.0d0
00999
01000 real(real64), parameter:: &
01001 molar_volume_of_ideal_gas__273_15_k__101_325_kpa=22.41396954d-3
01002 real(real64), parameter :: &
01003 u_molar_volume_of_ideal_gas__273_15_k__101_325_kpa=0.0d0
01004
01005 real(real64), parameter:: &
01006 molar_volume_of_silicon=1.205883199d-5
01007 real(real64), parameter :: &
01008 u_molar_volume_of_silicon=0.000000060d-5
01009
01010 real(real64), parameter:: &
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01011 molybdenum_x_unit=1.00209952d-13
01012 real(real64), parameter :: &
01013 u_molybdenum_x_unit=0.00000053d-13
01014
01015 real(real64), parameter :: &
01016 muon_compton_wavelength=1.173444110d-14
01017 real(real64), parameter :: &
01018 u_muon_compton_wavelength=0.000000026d-14
01019
01020 real(real64), parameter :: &
01021 muon_electron_mass_ratio=206.7682830d0
01022 real(real64), parameter :: &
01023 u_muon_electron_mass_ratio=0.0000046d0
01024
01025 real(real64), parameter :: &
01026 muon_g_factor=-2.0023318418d0
01027 real(real64), parameter :: &
01028 u_muon_g_factor=0.000000013d0
01029
01030 real(real64), parameter :: &
01031 muon_mag_mom=-4.49044830d-26
01032 real(real64), parameter :: &
01033 u_muon_mag_mom=0.00000010d-26
01034
01035 real(real64), parameter :: &
01036 muon_mag_mom_anomaly=1.16592089d-3
01037 real(real64), parameter :: &
01038 u_muon_mag_mom_anomaly=0.00000063d-3
01039
01040 real(real64), parameter :: &
01041 muon_mag_mom_to_bohr_magneton_ratio=-4.84197047d-3
01042 real(real64), parameter :: &
01043 u_muon_mag_mom_to_bohr_magneton_ratio=0.00000011d-3
01044
01045 real(real64), parameter :: &
01046 muon_mag_mom_to_nuclear_magneton_ratio=-8.89059703d0
01047 real(real64), parameter :: &
01048 u_muon_mag_mom_to_nuclear_magneton_ratio=0.00000020d0
01049
01050 real(real64), parameter :: &
01051 muon_mass=1.883531627d-28
01052 real(real64), parameter :: &
01053 u_muon_mass=0.000000042d-28
01054
01055 real(real64), parameter :: &
01056 muon_mass_energy_equivalent=1.692833804d-11
01057 real(real64), parameter :: &
01058 u_muon_mass_energy_equivalent=0.000000038d-11
01059
01060 real(real64), parameter :: &
01061 muon_mass_energy_equivalent_in_mev=105.6583755d0
01062 real(real64), parameter :: &
01063 u_muon_mass_energy_equivalent_in_mev=0.0000023d0
01064
01065 real(real64), parameter :: &
01066 muon_mass_in_u=0.1134289259d0
01067 real(real64), parameter :: &
01068 u_muon_mass_in_u=0.0000000025d0
01069
01070 real(real64), parameter :: &
01071 muon_molar_mass=1.134289259d-4
01072 real(real64), parameter :: &
01073 u_muon_molar_mass=0.000000025d-4
01074
01075 real(real64), parameter :: &
01076 muon_neutron_mass_ratio=0.1124545170d0
01077 real(real64), parameter :: &
01078 u_muon_neutron_mass_ratio=0.000000025d0
01079
01080 real(real64), parameter :: &
01081 muon_proton_mag_mom_ratio=-3.183345142d0
01082 real(real64), parameter :: &
01083 u_muon_proton_mag_mom_ratio=0.000000071d0
01084
01085 real(real64), parameter :: &
01086 muon_proton_mass_ratio=0.1126095264d0
01087 real(real64), parameter :: &
01088 u_muon_proton_mass_ratio=0.0000000025d0
01089
01090 real(real64), parameter :: &
01091 muon_tau_mass_ratio=5.94635d-2
01092 real(real64), parameter :: &
01093 u_muon_tau_mass_ratio=0.00040d-2
01094
01095 real(real64), parameter :: &
01096 natural_unit_of_action=1.054571817d-34
01097 real(real64), parameter :: &
```

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01098 u_natural_unit_of_action=0.0d0
01099
01100 real(real64), parameter:: &
01101 natural_unit_of_action_in_ev_s=6.582119569d-16
01102 real(real64), parameter :: &
01103 u_natural_unit_of_action_in_ev_s=0.0d0
01104
01105 real(real64), parameter:: &
01106 natural_unit_of_energy=8.1871057769d-14
01107 real(real64), parameter :: &
01108 u_natural_unit_of_energy=0.0000000025d-14
01109
01110 real(real64), parameter:: &
01111 natural_unit_of_energy_in_mev=0.51099895000d0
01112 real(real64), parameter :: &
01113 u_natural_unit_of_energy_in_mev=0.0000000015d0
01114
01115 real(real64), parameter:: &
01116 natural_unit_of_length=3.8615926796d-13
01117 real(real64), parameter :: &
01118 u_natural_unit_of_length=0.0000000012d-13
01119
01120 real(real64), parameter:: &
01121 natural_unit_of_mass=9.1093837015d-31
01122 real(real64), parameter :: &
01123 u_natural_unit_of_mass=0.0000000028d-31
01124
01125 real(real64), parameter:: &
01126 natural_unit_of_momentum=2.73092453075d-22
01127 real(real64), parameter :: &
01128 u_natural_unit_of_momentum=0.0000000082d-22
01129
01130 real(real64), parameter:: &
01131 natural_unit_of_momentum_in_mev_c=0.51099895000d0
01132 real(real64), parameter :: &
01133 u_natural_unit_of_momentum_in_mev_c=0.0000000015d0
01134
01135 real(real64), parameter:: &
01136 natural_unit_of_time=1.28808866819d-21
01137 real(real64), parameter :: &
01138 u_natural_unit_of_time=0.0000000039d-21
01139
01140 real(real64), parameter:: &
01141 natural_unit_of_velocity=299792458.0d0
01142 real(real64), parameter :: &
01143 u_natural_unit_of_velocity=0.0d0
01144
01145 real(real64), parameter:: &
01146 neutron_compton_wavelength=1.31959090581d-15
01147 real(real64), parameter :: &
01148 u_neutron_compton_wavelength=0.0000000075d-15
01149
01150 real(real64), parameter:: &
01151 neutron_electron_mag_mom_ratio=1.04066882d-3
01152 real(real64), parameter :: &
01153 u_neutron_electron_mag_mom_ratio=0.00000025d-3
01154
01155 real(real64), parameter:: &
01156 neutron_electron_mass_ratio=1838.68366173d0
01157 real(real64), parameter :: &
01158 u_neutron_electron_mass_ratio=0.00000089d0
01159
01160 real(real64), parameter:: &
01161 neutron_g_factor=-3.82608545d0
01162 real(real64), parameter :: &
01163 u_neutron_g_factor=0.00000090d0
01164
01165 real(real64), parameter:: &
01166 neutron_gyromag_ratio=1.83247171d8
01167 real(real64), parameter :: &
01168 u_neutron_gyromag_ratio=0.00000043d8
01169
01170 real(real64), parameter:: &
01171 neutron_gyromag_ratio_in_mhz_t=29.1646931d0
01172 real(real64), parameter :: &
01173 u_neutron_gyromag_ratio_in_mhz_t=0.0000069d0
01174
01175 real(real64), parameter:: &
01176 neutron_mag_mom=-9.6623651d-27
01177 real(real64), parameter :: &
01178 u_neutron_mag_mom=0.0000023d-27
01179
01180 real(real64), parameter:: &
01181 neutron_mag_mom_to_bohr_magneton_ratio=-1.04187563d-3
01182 real(real64), parameter :: &
01183 u_neutron_mag_mom_to_bohr_magneton_ratio=0.00000025d-3
01184

```

```
01185 real(real64), parameter:: &
01186 neutron_mag_mom_to_nuclear_magneton_ratio=-1.91304273d0
01187 real(real64), parameter :: &
01188 u_neutron_mag_mom_to_nuclear_magneton_ratio=0.00000045d0
01189
01190 real(real64), parameter:: &
01191 neutron_mass=1.67492749804d-27
01192 real(real64), parameter :: &
01193 u_neutron_mass=0.0000000095d-27
01194
01195 real(real64), parameter:: &
01196 neutron_mass_energy_equivalent=1.50534976287d-10
01197 real(real64), parameter :: &
01198 u_neutron_mass_energy_equivalent=0.0000000086d-10
01199
01200 real(real64), parameter:: &
01201 neutron_mass_energy_equivalent_in_mev=939.56542052d0
01202 real(real64), parameter :: &
01203 u_neutron_mass_energy_equivalent_in_mev=0.00000054d0
01204
01205 real(real64), parameter:: &
01206 neutron_mass_in_u=1.00866491595d0
01207 real(real64), parameter :: &
01208 u_neutron_mass_in_u=0.0000000049d0
01209
01210 real(real64), parameter:: &
01211 neutron_molar_mass=1.00866491560d-3
01212 real(real64), parameter :: &
01213 u_neutron_molar_mass=0.0000000057d-3
01214
01215 real(real64), parameter:: &
01216 neutron_muon_mass_ratio=8.89248406d0
01217 real(real64), parameter :: &
01218 u_neutron_muon_mass_ratio=0.00000020d0
01219
01220 real(real64), parameter:: &
01221 neutron_proton_mag_mom_ratio=-0.68497934d0
01222 real(real64), parameter :: &
01223 u_neutron_proton_mag_mom_ratio=0.00000016d0
01224
01225 real(real64), parameter:: &
01226 neutron_proton_mass_difference=2.30557435d-30
01227 real(real64), parameter :: &
01228 u_neutron_proton_mass_difference=0.00000082d-30
01229
01230 real(real64), parameter:: &
01231 neutron_proton_mass_difference_energy_equivalent=2.07214689d-13
01232 real(real64), parameter :: &
01233 u_neutron_proton_mass_difference_energy_equivalent=0.00000074d-13
01234
01235 real(real64), parameter:: &
01236 neutron_proton_mass_difference_energy_equivalent_in_mev=1.29333236d0
01237 real(real64), parameter :: &
01238 u_neutron_proton_mass_difference_energy_equivalent_in_mev=0.00000046d0
01239
01240 real(real64), parameter:: &
01241 neutron_proton_mass_difference_in_u=1.38844933d-3
01242 real(real64), parameter :: &
01243 u_neutron_proton_mass_difference_in_u=0.00000049d-3
01244
01245 real(real64), parameter:: &
01246 neutron_proton_mass_ratio=1.00137841931d0
01247 real(real64), parameter :: &
01248 u_neutron_proton_mass_ratio=0.0000000049d0
01249
01250 real(real64), parameter:: &
01251 neutron_relative_atomic_mass=1.00866491595d0
01252 real(real64), parameter :: &
01253 u_neutron_relative_atomic_mass=0.0000000049d0
01254
01255 real(real64), parameter:: &
01256 neutron_tau_mass_ratio=0.528779d0
01257 real(real64), parameter :: &
01258 u_neutron_tau_mass_ratio=0.000036d0
01259
01260 real(real64), parameter:: &
01261 neutron_to_shielded_proton_mag_mom_ratio=-0.68499694d0
01262 real(real64), parameter :: &
01263 u_neutron_to_shielded_proton_mag_mom_ratio=0.00000016d0
01264
01265 real(real64), parameter:: &
01266 newtonian_constant_of_gravitation=6.67430d-11
01267 real(real64), parameter :: &
01268 u_newtonian_constant_of_gravitation=0.00015d-11
01269
01270 real(real64), parameter:: &
01271 newtonian_constant_of_gravitation_over_h_bar_c=6.70883d-39
```

```
01272 real(real64), parameter :: &
01273 u_newtonian_constant_of_gravitation_over_h_bar_c=0.00015d-39
01274
01275 real(real64), parameter :: &
01276 nuclear_magneton=5.0507837461d-27
01277 real(real64), parameter :: &
01278 u_nuclear_magneton=0.0000000015d-27
01279
01280 real(real64), parameter :: &
01281 nuclear_magneton_in_ev_t=3.15245125844d-8
01282 real(real64), parameter :: &
01283 u_nuclear_magneton_in_ev_t=0.00000000096d-8
01284
01285 real(real64), parameter :: &
01286 nuclear_magneton_in_inverse_meter_per_tesla=2.54262341353d-2
01287 real(real64), parameter :: &
01288 u_nuclear_magneton_in_inverse_meter_per_tesla=0.00000000078d-2
01289
01290 real(real64), parameter :: &
01291 nuclear_magneton_in_k_t=3.6582677756d-4
01292 real(real64), parameter :: &
01293 u_nuclear_magneton_in_k_t=0.0000000011d-4
01294
01295 real(real64), parameter :: &
01296 nuclear_magneton_in_mhz_t=7.6225932291d0
01297 real(real64), parameter :: &
01298 u_nuclear_magneton_in_mhz_t=0.0000000023d0
01299
01300 real(real64), parameter :: &
01301 planck_constant=6.62607015d-34
01302 real(real64), parameter :: &
01303 u_planck_constant=0.0d0
01304
01305 real(real64), parameter :: &
01306 planck_constant_in_ev_hz=4.135667696d-15
01307 real(real64), parameter :: &
01308 u_planck_constant_in_ev_hz=0.0d0
01309
01310 real(real64), parameter :: &
01311 planck_length=1.616255d-35
01312 real(real64), parameter :: &
01313 u_planck_length=0.000018d-35
01314
01315 real(real64), parameter :: &
01316 planck_mass=2.176434d-8
01317 real(real64), parameter :: &
01318 u_planck_mass=0.000024d-8
01319
01320 real(real64), parameter :: &
01321 planck_mass_energy_equivalent_in_gev=1.220890d19
01322 real(real64), parameter :: &
01323 u_planck_mass_energy_equivalent_in_gev=0.000014d19
01324
01325 real(real64), parameter :: &
01326 planck_temperature=1.416784d32
01327 real(real64), parameter :: &
01328 u_planck_temperature=0.000016d32
01329
01330 real(real64), parameter :: &
01331 planck_time=5.391247d-44
01332 real(real64), parameter :: &
01333 u_planck_time=0.000060d-44
01334
01335 real(real64), parameter :: &
01336 proton_charge_to_mass_quotient=9.5788331560d7
01337 real(real64), parameter :: &
01338 u_proton_charge_to_mass_quotient=0.0000000029d7
01339
01340 real(real64), parameter :: &
01341 proton_compton_wavelength=1.32140985539d-15
01342 real(real64), parameter :: &
01343 u_proton_compton_wavelength=0.0000000040d-15
01344
01345 real(real64), parameter :: &
01346 proton_electron_mass_ratio=1836.15267343d0
01347 real(real64), parameter :: &
01348 u_proton_electron_mass_ratio=0.00000011d0
01349
01350 real(real64), parameter :: &
01351 proton_g_factor=5.5856946893d0
01352 real(real64), parameter :: &
01353 u_proton_g_factor=0.0000000016d0
01354
01355 real(real64), parameter :: &
01356 proton_gyromag_ratio=2.6752218744d8
01357 real(real64), parameter :: &
01358 u_proton_gyromag_ratio=0.0000000011d8
```

```
01359
01360 real(real64), parameter:: &
01361 proton_gyromag_ratio_in_mhz_t=42.577478518d0
01362 real(real64), parameter :: &
01363 u_proton_gyromag_ratio_in_mhz_t=0.000000018d0
01364
01365 real(real64), parameter:: &
01366 proton_mag_mom=1.41060679736d-26
01367 real(real64), parameter :: &
01368 u_proton_mag_mom=0.0000000060d-26
01369
01370 real(real64), parameter:: &
01371 proton_mag_mom_to_bohr_magneton_ratio=1.52103220230d-3
01372 real(real64), parameter :: &
01373 u_proton_mag_mom_to_bohr_magneton_ratio=0.0000000046d-3
01374
01375 real(real64), parameter:: &
01376 proton_mag_mom_to_nuclear_magneton_ratio=2.79284734463d0
01377 real(real64), parameter :: &
01378 u_proton_mag_mom_to_nuclear_magneton_ratio=0.0000000082d0
01379
01380 real(real64), parameter:: &
01381 proton_mag_shielding_correction=2.5689d-5
01382 real(real64), parameter :: &
01383 u_proton_mag_shielding_correction=0.0011d-5
01384
01385 real(real64), parameter:: &
01386 proton_mass=1.67262192369d-27
01387 real(real64), parameter :: &
01388 u_proton_mass=0.0000000051d-27
01389
01390 real(real64), parameter:: &
01391 proton_mass_energy_equivalent=1.50327761598d-10
01392 real(real64), parameter :: &
01393 u_proton_mass_energy_equivalent=0.0000000046d-10
01394
01395 real(real64), parameter:: &
01396 proton_mass_energy_equivalent_in_mev=938.27208816d0
01397 real(real64), parameter :: &
01398 u_proton_mass_energy_equivalent_in_mev=0.00000029d0
01399
01400 real(real64), parameter:: &
01401 proton_mass_in_u=1.007276466621d0
01402 real(real64), parameter :: &
01403 u_proton_mass_in_u=0.00000000053d0
01404
01405 real(real64), parameter:: &
01406 proton_molar_mass=1.00727646627d-3
01407 real(real64), parameter :: &
01408 u_proton_molar_mass=0.0000000031d-3
01409
01410 real(real64), parameter:: &
01411 proton_muon_mass_ratio=8.88024337d0
01412 real(real64), parameter :: &
01413 u_proton_muon_mass_ratio=0.00000020d0
01414
01415 real(real64), parameter:: &
01416 proton_neutron_mag_mom_ratio=-1.45989805d0
01417 real(real64), parameter :: &
01418 u_proton_neutron_mag_mom_ratio=0.00000034d0
01419
01420 real(real64), parameter:: &
01421 proton_neutron_mass_ratio=0.99862347812d0
01422 real(real64), parameter :: &
01423 u_proton_neutron_mass_ratio=0.0000000049d0
01424
01425 real(real64), parameter:: &
01426 proton_relative_atomic_mass=1.007276466621d0
01427 real(real64), parameter :: &
01428 u_proton_relative_atomic_mass=0.00000000053d0
01429
01430 real(real64), parameter:: &
01431 proton_rms_charge_radius=8.414d-16
01432 real(real64), parameter :: &
01433 u_proton_rms_charge_radius=0.019d-16
01434
01435 real(real64), parameter:: &
01436 proton_tau_mass_ratio=0.528051d0
01437 real(real64), parameter :: &
01438 u_proton_tau_mass_ratio=0.000036d0
01439
01440 real(real64), parameter:: &
01441 quantum_of_circulation=3.6369475516d-4
01442 real(real64), parameter :: &
01443 u_quantum_of_circulation=0.000000011d-4
01444
01445 real(real64), parameter:: &
```

```
01446 quantum_of_circulation_times_2=7.2738951032d-4
01447 real(real64), parameter :: &
01448 u_quantum_of_circulation_times_2=0.0000000022d-4
01449
01450 real(real64), parameter:: &
01451 reduced_compton_wavelength=3.8615926796d-13
01452 real(real64), parameter :: &
01453 u_reduced_compton_wavelength=0.0000000012d-13
01454
01455 real(real64), parameter:: &
01456 reduced_muon_compton_wavelength=1.867594306d-15
01457 real(real64), parameter :: &
01458 u_reduced_muon_compton_wavelength=0.000000042d-15
01459
01460 real(real64), parameter:: &
01461 reduced_neutron_compton_wavelength=2.1001941552d-16
01462 real(real64), parameter :: &
01463 u_reduced_neutron_compton_wavelength=0.0000000012d-16
01464
01465 real(real64), parameter:: &
01466 reduced_planck_constant=1.054571817d-34
01467 real(real64), parameter :: &
01468 u_reduced_planck_constant=0.0d0
01469
01470 real(real64), parameter:: &
01471 reduced_planck_constant_in_ev_s=6.582119569d-16
01472 real(real64), parameter :: &
01473 u_reduced_planck_constant_in_ev_s=0.0d0
01474
01475 real(real64), parameter:: &
01476 reduced_planck_constant_times_c_in_mev_fm=197.3269804d0
01477 real(real64), parameter :: &
01478 u_reduced_planck_constant_times_c_in_mev_fm=0.0d0
01479
01480 real(real64), parameter:: &
01481 reduced_proton_compton_wavelength=2.10308910336d-16
01482 real(real64), parameter :: &
01483 u_reduced_proton_compton_wavelength=0.00000000064d-16
01484
01485 real(real64), parameter:: &
01486 reduced_tau_compton_wavelength=1.110538d-16
01487 real(real64), parameter :: &
01488 u_reduced_tau_compton_wavelength=0.000075d-16
01489
01490 real(real64), parameter:: &
01491 rydberg_constant=10973731.568160d0
01492 real(real64), parameter :: &
01493 u_rydberg_constant=0.000021d0
01494
01495 real(real64), parameter:: &
01496 rydberg_constant_times_c_in_hz=3.2898419602508d15
01497 real(real64), parameter :: &
01498 u_rydberg_constant_times_c_in_hz=0.000000000064d15
01499
01500 real(real64), parameter:: &
01501 rydberg_constant_times_hc_in_ev=13.605693122994d0
01502 real(real64), parameter :: &
01503 u_rydberg_constant_times_hc_in_ev=0.000000000026d0
01504
01505 real(real64), parameter:: &
01506 rydberg_constant_times_hc_in_j=2.1798723611035d-18
01507 real(real64), parameter :: &
01508 u_rydberg_constant_times_hc_in_j=0.000000000042d-18
01509
01510 real(real64), parameter:: &
01511 sackur_tetrode_constant__1_k__100_kpa=-1.15170753706d0
01512 real(real64), parameter :: &
01513 u_sackur_tetrode_constant__1_k__100_kpa=0.00000000045d0
01514
01515 real(real64), parameter:: &
01516 sackur_tetrode_constant__1_k__101_325_kpa=-1.16487052358d0
01517 real(real64), parameter :: &
01518 u_sackur_tetrode_constant__1_k__101_325_kpa=0.00000000045d0
01519
01520 real(real64), parameter:: &
01521 second_radiation_constant=1.438776877d-2
01522 real(real64), parameter :: &
01523 u_second_radiation_constant=0.0d0
01524
01525 real(real64), parameter:: &
01526 shielded_helion_gyromag_ratio=2.037894569d8
01527 real(real64), parameter :: &
01528 u_shielded_helion_gyromag_ratio=0.000000024d8
01529
01530 real(real64), parameter:: &
01531 shielded_helion_gyromag_ratio_in_mhz_t=32.43409942d0
01532 real(real64), parameter :: &
```



```
01533 u_shielded_helion_gyromag_ratio_in_mhz_t=0.00000038d0
01534
01535 real(real64), parameter:: &
01536 shielded_helion_mag_mom=-1.074553090d-26
01537 real(real64), parameter :: &
01538 u_shielded_helion_mag_mom=0.000000013d-26
01539
01540 real(real64), parameter:: &
01541 shielded_helion_mag_mom_to_bohr_magneton_ratio=-1.158671471d-3
01542 real(real64), parameter :: &
01543 u_shielded_helion_mag_mom_to_bohr_magneton_ratio=0.000000014d-3
01544
01545 real(real64), parameter:: &
01546 shielded_helion_mag_mom_to_nuclear_magneton_ratio=-2.127497719d0
01547 real(real64), parameter :: &
01548 u_shielded_helion_mag_mom_to_nuclear_magneton_ratio=0.000000025d0
01549
01550 real(real64), parameter:: &
01551 shielded_helion_to_proton_mag_mom_ratio=-0.7617665618d0
01552 real(real64), parameter :: &
01553 u_shielded_helion_to_proton_mag_mom_ratio=0.0000000089d0
01554
01555 real(real64), parameter:: &
01556 shielded_helion_to_shielded_proton_mag_mom_ratio=-0.7617861313d0
01557 real(real64), parameter :: &
01558 u_shielded_helion_to_shielded_proton_mag_mom_ratio=0.0000000033d0
01559
01560 real(real64), parameter:: &
01561 shielded_proton_gyromag_ratio=2.675153151d8
01562 real(real64), parameter :: &
01563 u_shielded_proton_gyromag_ratio=0.000000029d8
01564
01565 real(real64), parameter:: &
01566 shielded_proton_gyromag_ratio_in_mhz_t=42.57638474d0
01567 real(real64), parameter :: &
01568 u_shielded_proton_gyromag_ratio_in_mhz_t=0.00000046d0
01569
01570 real(real64), parameter:: &
01571 shielded_proton_mag_mom=1.410570560d-26
01572 real(real64), parameter :: &
01573 u_shielded_proton_mag_mom=0.000000015d-26
01574
01575 real(real64), parameter:: &
01576 shielded_proton_mag_mom_to_bohr_magneton_ratio=1.520993128d-3
01577 real(real64), parameter :: &
01578 u_shielded_proton_mag_mom_to_bohr_magneton_ratio=0.000000017d-3
01579
01580 real(real64), parameter:: &
01581 shielded_proton_mag_mom_to_nuclear_magneton_ratio=2.792775599d0
01582 real(real64), parameter :: &
01583 u_shielded_proton_mag_mom_to_nuclear_magneton_ratio=0.000000030d0
01584
01585 real(real64), parameter:: &
01586 shielding_difference_of_d_and_p_in_hd=2.0200d-8
01587 real(real64), parameter :: &
01588 u_shielding_difference_of_d_and_p_in_hd=0.0020d-8
01589
01590 real(real64), parameter:: &
01591 shielding_difference_of_t_and_p_in_ht=2.4140d-8
01592 real(real64), parameter :: &
01593 u_shielding_difference_of_t_and_p_in_ht=0.0020d-8
01594
01595 real(real64), parameter:: &
01596 speed_of_light_in_vacuum=299792458.0d0
01597 real(real64), parameter :: &
01598 u_speed_of_light_in_vacuum=0.0d0
01599
01600 real(real64), parameter:: &
01601 standard_acceleration_of_gravity=9.80665d0
01602 real(real64), parameter :: &
01603 u_standard_acceleration_of_gravity=0.0d0
01604
01605 real(real64), parameter:: &
01606 standard_atmosphere=101325.0d0
01607 real(real64), parameter :: &
01608 u_standard_atmosphere=0.0d0
01609
01610 real(real64), parameter:: &
01611 standard_state_pressure=100000.0d0
01612 real(real64), parameter :: &
01613 u_standard_state_pressure=0.0d0
01614
01615 real(real64), parameter:: &
01616 stefan_boltzmann_constant=5.670374419d-8
01617 real(real64), parameter :: &
01618 u_stefan_boltzmann_constant=0.0d0
01619
```

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01620 real(real64), parameter:: &
01621 tau_compton_wavelength=6.97771d-16
01622 real(real64), parameter :: &
01623 u_tau_compton_wavelength=0.00047d-16
01624
01625 real(real64), parameter:: &
01626 tau_electron_mass_ratio=3477.23d0
01627 real(real64), parameter :: &
01628 u_tau_electron_mass_ratio=0.23d0
01629
01630 real(real64), parameter:: &
01631 tau_energy_equivalent=1776.86d0
01632 real(real64), parameter :: &
01633 u_tau_energy_equivalent=0.12d0
01634
01635 real(real64), parameter:: &
01636 tau_mass=3.16754d-27
01637 real(real64), parameter :: &
01638 u_tau_mass=0.00021d-27
01639
01640 real(real64), parameter:: &
01641 tau_mass_energy_equivalent=2.84684d-10
01642 real(real64), parameter :: &
01643 u_tau_mass_energy_equivalent=0.00019d-10
01644
01645 real(real64), parameter:: &
01646 tau_mass_in_u=1.90754d0
01647 real(real64), parameter :: &
01648 u_tau_mass_in_u=0.00013d0
01649
01650 real(real64), parameter:: &
01651 tau_molar_mass=1.90754d-3
01652 real(real64), parameter :: &
01653 u_tau_molar_mass=0.00013d-3
01654
01655 real(real64), parameter:: &
01656 tau_muon_mass_ratio=16.8170d0
01657 real(real64), parameter :: &
01658 u_tau_muon_mass_ratio=0.0011d0
01659
01660 real(real64), parameter:: &
01661 tau_neutron_mass_ratio=1.89115d0
01662 real(real64), parameter :: &
01663 u_tau_neutron_mass_ratio=0.00013d0
01664
01665 real(real64), parameter:: &
01666 tau_proton_mass_ratio=1.89376d0
01667 real(real64), parameter :: &
01668 u_tau_proton_mass_ratio=0.00013d0
01669
01670 real(real64), parameter:: &
01671 thomson_cross_section=6.6524587321d-29
01672 real(real64), parameter :: &
01673 u_thomson_cross_section=0.0000000060d-29
01674
01675 real(real64), parameter:: &
01676 triton_electron_mass_ratio=5496.92153573d0
01677 real(real64), parameter :: &
01678 u_triton_electron_mass_ratio=0.00000027d0
01679
01680 real(real64), parameter:: &
01681 triton_g_factor=5.957924931d0
01682 real(real64), parameter :: &
01683 u_triton_g_factor=0.000000012d0
01684
01685 real(real64), parameter:: &
01686 triton_mag_mom=1.5046095202d-26
01687 real(real64), parameter :: &
01688 u_triton_mag_mom=0.0000000030d-26
01689
01690 real(real64), parameter:: &
01691 triton_mag_mom_to_bohr_magneton_ratio=1.6223936651d-3
01692 real(real64), parameter :: &
01693 u_triton_mag_mom_to_bohr_magneton_ratio=0.0000000032d-3
01694
01695 real(real64), parameter:: &
01696 triton_mag_mom_to_nuclear_magneton_ratio=2.9789624656d0
01697 real(real64), parameter :: &
01698 u_triton_mag_mom_to_nuclear_magneton_ratio=0.0000000059d0
01699
01700 real(real64), parameter:: &
01701 triton_mass=5.0073567446d-27
01702 real(real64), parameter :: &
01703 u_triton_mass=0.0000000015d-27
01704
01705 real(real64), parameter:: &
01706 triton_mass_energy_equivalent=4.5003878060d-10
```

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01707 real(real64), parameter :: &
01708 u_triton_mass_energy_equivalent=0.0000000014d-10
01709
01710 real(real64), parameter :: &
01711 triton_mass_energy_equivalent_in_mev=2808.92113298d0
01712 real(real64), parameter :: &
01713 u_triton_mass_energy_equivalent_in_mev=0.00000085d0
01714
01715 real(real64), parameter :: &
01716 triton_mass_in_u=3.01550071621d0
01717 real(real64), parameter :: &
01718 u_triton_mass_in_u=0.00000000012d0
01719
01720 real(real64), parameter :: &
01721 triton_molar_mass=3.01550071517d-3
01722 real(real64), parameter :: &
01723 u_triton_molar_mass=0.00000000092d-3
01724
01725 real(real64), parameter :: &
01726 triton_proton_mass_ratio=2.99371703414d0
01727 real(real64), parameter :: &
01728 u_triton_proton_mass_ratio=0.00000000015d0
01729
01730 real(real64), parameter :: &
01731 triton_relative_atomic_mass=3.01550071621d0
01732 real(real64), parameter :: &
01733 u_triton_relative_atomic_mass=0.00000000012d0
01734
01735 real(real64), parameter :: &
01736 triton_to_proton_mag_mom_ratio=1.0666399191d0
01737 real(real64), parameter :: &
01738 u_triton_to_proton_mag_mom_ratio=0.0000000021d0
01739
01740 real(real64), parameter :: &
01741 unified_atomic_mass_unit=1.66053906660d-27
01742 real(real64), parameter :: &
01743 u_unified_atomic_mass_unit=0.00000000050d-27
01744
01745 real(real64), parameter :: &
01746 vacuum_electric_permittivity=8.8541878128d-12
01747 real(real64), parameter :: &
01748 u_vacuum_electric_permittivity=0.0000000013d-12
01749
01750 real(real64), parameter :: &
01751 vacuum_mag_permeability=1.25663706212d-6
01752 real(real64), parameter :: &
01753 u_vacuum_mag_permeability=0.00000000019d-6
01754
01755 real(real64), parameter :: &
01756 von_klitzing_constant=25812.80745d0
01757 real(real64), parameter :: &
01758 u_von_klitzing_constant=0.0d0
01759
01760 real(real64), parameter :: &
01761 weak_mixing_angle=0.22290d0
01762 real(real64), parameter :: &
01763 u_weak_mixing_angle=0.00030d0
01764
01765 real(real64), parameter :: &
01766 wien_frequency_displacement_law_constant=5.878925757d10
01767 real(real64), parameter :: &
01768 u_wien_frequency_displacement_law_constant=0.0d0
01769
01770 real(real64), parameter :: &
01771 wien_wavelength_displacement_law_constant=2.897771955d-3
01772 real(real64), parameter :: &
01773 u_wien_wavelength_displacement_law_constant=0.0d0
01774
01775 real(real64), parameter :: &
01776 w_to_z_mass_ratio=0.88153d0
01777 real(real64), parameter :: &
01778 u_w_to_z_mass_ratio=0.00017d0
01779
01780 end module codata

```

## 17.18 /Users/milan/programs/codata/src/generator.c File Reference

Generator.

```

#include <stdio.h>
#include <stdlib.h>

```

```
#include <string.h>
#include <ctype.h>
```

## Data Structures

- struct [codata\\_file\\_props](#)  
*Properties of the file for the codata raw data.*

## Functions

- void [format\\_names](#) (char \*line, char \*name)  
*Format names simply by copying them.*
- void [format\\_values](#) (char \*line, char \*value)  
*Format values to be conform to Fortran double precision.*
- void [format\\_uncertainties](#) (char \*line, char \*uncertainty)  
*Format the uncertainties to be conform to Fortran double precision.*
- void [format\\_units](#) (char \*line, char \*unit)  
*Format the units to be conform to Fortran strings.*
- void [convert\\_value\\_to\\_c](#) (char \*value)  
*Convert power symbol d to e for C code.*
- void [clean\\_line](#) (char \*buf, size\_t buffer\_size)  
*Fill the buffer with white space.*
- int [read\\_line](#) (FILE \*f, char \*buf, size\_t buffer\_size)  
*Read the line from f and copy in buf.*
- void [ltrim](#) (char \*buf, size\_t buffer\_size)  
*Remove all white space from the left.*
- void [rtrim](#) (char \*buf, size\_t buffer\_size)  
*Remove all white space from the right.*
- int [is\\_blank\\_line](#) (char \*buf, size\_t buffer\_size)  
*Test if the line is a blank line.*
- void [get\\_props](#) (struct [codata\\_file\\_props](#) \*props)  
*Get the properties of the codata file.*
- void [print\\_props](#) (struct [codata\\_file\\_props](#) \*props)  
*Print the codata file properties.*
- void [write\\_fortran\\_file\\_doc](#) (FILE \*fcode)  
*Generate the Fortran file documentation.*
- void [write\\_fortran\\_module\\_doc](#) (FILE \*fcode)  
*Generate the Fortran module documentation.*
- void [write\\_fortran\\_module\\_declaration](#) (FILE \*fcode)  
*Generate the Fortran module declaration.*
- void [write\\_fortran\\_module\\_end](#) (FILE \*fcode)  
*Generate the end of the Fortran module.*
- void [write\\_c\\_header\\_doc](#) (FILE \*fcode)  
*Generate the documentation for the C header.*
- void [write\\_python\\_module\\_doc](#) (FILE \*fcode)
- void [write\\_cpython\\_extension\\_declaration](#) (FILE \*fcode)
- void [write\\_cpython\\_extension\\_end](#) (FILE \*fcode)
- void [write\\_all\\_constants](#) (FILE \*fcodata, FILE \*ffortran, FILE \*fcheader, FILE \*fpython, FILE \*fcpython, struct [codata\\_file\\_props](#) \*props)  
*Generate all constants in the Fortran module.*
- int [main](#) (int argc, char \*\*argv)  
*Generated Fortran module.*

## 17.18.1 Detailed Description

Generator.

The raw data from NIST are parsed line by line The raw codata from <http://physics.nist.gov/constants> are parsed line by line and converted into declarations as constants for different languages:

Definition in file [generator.c](#).

## 17.18.2 Function Documentation

### 17.18.2.1 `clean_line()`

```
void clean_line (
    char * buf,
    size_t buffer_size )
```

Fill the buffer with white space.

#### Parameters

<i>buf</i>	Line to be cleaned
<i>buffer_size</i>	Size of the line.

Definition at line [242](#) of file [generator.c](#).

### 17.18.2.2 `convert_value_to_c()`

```
void convert_value_to_c (
    char * value )
```

Convert power symbol d to e for C code.

#### Parameters

<i>value</i>	Value to be converted.
--------------	------------------------

Definition at line [227](#) of file [generator.c](#).

### 17.18.2.3 `format_names()`

```
void format_names (
```

```
char * line,  
char * name )
```

Format names simply by copying them.

#### Parameters

<i>line</i>	Line to be parsed.
<i>name</i>	String where the name will be copied.

Definition at line 39 of file [generator.c](#).

#### 17.18.2.4 format\_uncertainties()

```
void format_uncertainties (  
    char * line,  
    char * uncertainty )
```

Format the uncertainties to be conform to Fortran double precision.

#### Parameters

<i>line</i>	Line to be parsed.
<i>uncertainty</i>	String where the uncertainty will be copied.

Definition at line 146 of file [generator.c](#).

#### 17.18.2.5 format\_units()

```
void format_units (  
    char * line,  
    char * unit )
```

Format the units to be conform to Fortran strings.

#### Parameters

<i>line</i>	Line to be parsed.
<i>unit</i>	String where the unit will be copied.

Definition at line 215 of file [generator.c](#).

### 17.18.2.6 format\_values()

```
void format_values (
    char * line,
    char * value )
```

Format values to be conform to Fortran double precision.

#### Parameters

<i>line</i>	Line to be parsed.
<i>value</i>	String where the value will be copied.

Definition at line 69 of file [generator.c](#).

### 17.18.2.7 get\_props()

```
void get_props (
    struct codata_file_props * props )
```

Get the properties of the codata file.

#### Parameters

<i>props</i>	Properties of the codata file.
--------------	--------------------------------

Definition at line 357 of file [generator.c](#).

### 17.18.2.8 is\_blank\_line()

```
int is_blank_line (
    char * buf,
    size_t buffer_size )
```

Test if the line is a blank line.

#### Parameters

<i>buf</i>	Line to be tested.
<i>buffer_size</i>	Size of the line.

#### Returns

int Flag indicating if blank(=1) or not (=0).

Definition at line 334 of file [generator.c](#).

### 17.18.2.9 ltrim()

```
void ltrim (
    char * buf,
    size_t buffer_size )
```

Remove all white space from the left.

#### Parameters

<i>buf</i>	Line to be left trimmed.
<i>buffer_size</i>	Size of the line.

Definition at line [284](#) of file [generator.c](#).

### 17.18.2.10 main()

```
int main (
    int argc,
    char ** argv )
```

Generated Fortran module.

#### Parameters

<i>argc</i>	Number of arguments
<i>argv</i>	List of arguments

#### Returns

int Exit flag.

Definition at line [588](#) of file [generator.c](#).

### 17.18.2.11 print\_props()

```
void print_props (
    struct codata\_file\_props * props )
```

Print the codata file properties.



**Parameters**

<i>props</i>	Properties of the codata file.
--------------	--------------------------------

Definition at line 395 of file [generator.c](#).

**17.18.2.12 read\_line()**

```
int read_line (
    FILE * f,
    char * buf,
    size_t buffer_size )
```

Read the line from *f* and copy in *buf*.

**Parameters**

<i>f</i>	File pointer where the line will be parsed.
<i>buf</i>	String where the line will be copied.
<i>buffer_size</i>	Size of the buffer.

**Returns**

int Flag if the line is empty(=1) or not empty(=0).

Definition at line 259 of file [generator.c](#).

**17.18.2.13 rtrim()**

```
void rtrim (
    char * buf,
    size_t buffer_size )
```

Remove all white space from the right.

**Parameters**

<i>buf</i>	Line to be right trimmed.
<i>buffer_size</i>	Size of the line.

Definition at line 315 of file [generator.c](#).

#### 17.18.2.14 write\_all\_constants()

```
void write_all_constants (
    FILE * fcodata,
    FILE * ffortran,
    FILE * fcheader,
    FILE * fppython,
    FILE * fcpython,
    struct codata_file_props * props )
```

Generate all constants in the Fortran module.

##### Parameters

<i>fcodata</i>	File pointer to the codata file.
<i>ffortran</i>	File pointer to the Fortran module.
<i>fcheader</i>	File pointer to the C header.
<i>fppython</i>	File pointer to the python module.
<i>fcpython</i>	File pointer to the cpython module.
<i>props</i>	Properties of the codata file.

Definition at line 505 of file [generator.c](#).

#### 17.18.2.15 write\_c\_header\_doc()

```
void write_c_header_doc (
    FILE * fcode )
```

Generate the documentation for the C header.

##### Parameters

<i>fcode</i>	File pointer to the C header.
--------------	-------------------------------

Definition at line 454 of file [generator.c](#).

#### 17.18.2.16 write\_cpython\_extension\_declaration()

```
void write_cpython_extension_declaration (
    FILE * fcode )
```

Definition at line 469 of file [generator.c](#).

#### 17.18.2.17 write\_cpython\_extension\_end()

```
void write_cpython_extension_end (
    FILE * fcode )
```

Definition at line 490 of file [generator.c](#).

#### 17.18.2.18 write\_fortran\_file\_doc()

```
void write_fortran_file_doc (
    FILE * fcode )
```

Generate the Fortran file documentation.

##### Parameters

<i>fcode</i>	File pointer of the Fortran module.
--------------	-------------------------------------

Definition at line 408 of file [generator.c](#).

#### 17.18.2.19 write\_fortran\_module\_declaration()

```
void write_fortran_module_declaration (
    FILE * fcode )
```

Generate the Fortran module declaration.

##### Parameters

<i>fcode</i>	File pointer of the Fortran module.
--------------	-------------------------------------

Definition at line 431 of file [generator.c](#).

#### 17.18.2.20 write\_fortran\_module\_doc()

```
void write_fortran_module_doc (
    FILE * fcode )
```

Generate the Fortran module documentation.

##### Parameters

<i>fcode</i>	File pointer of the Fortran module.
--------------	-------------------------------------

Definition at line 422 of file [generator.c](#).

### 17.18.2.21 write\_fortran\_module\_end()

```
void write_fortran_module_end (
    FILE * fcode )
```

Generate the end of the Fortran module.

#### Parameters

<i>fcode</i>	File pointer to the Fortran module.
--------------	-------------------------------------

Definition at line 443 of file [generator.c](#).

### 17.18.2.22 write\_python\_module\_doc()

```
void write_python_module_doc (
    FILE * fcode )
```

Definition at line 463 of file [generator.c](#).

## 17.19 generator.c

[Go to the documentation of this file.](#)

```
00001
00009 #include <stdio.h>
00010 #include <stdlib.h>
00011 #include <string.h>
00012 #include <ctype.h>
00013
00018 struct codata_file_props{
00019     size_t n;
00020     size_t index_header_end;
00021     char codata_path[18];
00022     char year[5];
00023     char fmodule_path[18];
00025 };
00026
00027 static const size_t LINE_LENGTH = 256;
00028 static const size_t NAMES_LENGTH = 60;
00029 static const size_t VALUES_LENGTH = 25;
00030 static const size_t UNCERTAINTIES_LENGTH = 25;
00031 static const size_t UNITS_LENGTH = 25;
00039 void format_names(char *line, char *name){
00040
00041     size_t i;
00042
00043     for(i=0; i<NAMES_LENGTH; i++){
00044         if(!isalnum(line[i])){
00045             name[i] = '_';
00046         }else{
00047             name[i] = line[i];
00048         }
00049     }
00050
00051     for(i=0; i<NAMES_LENGTH; i++){
00052         if(name[NAMES_LENGTH-1-i]!='_'){
```

```

00053         break;
00054     }
00055     name[NAMES_LENGTH-1-i] = ' ';
00056 }
00057
00058 for(i=0; i<NAMES_LENGTH; i++){
00059     name[i] = toupper(name[i]);
00060 }
00061 }
00062
00069 void format_values(char *line, char *value){
00070     size_t i;
00071     size_t j;
00072     int flag_decimal = 0;
00073     int flag_exponent = 0;
00074
00075     char *temp = (char *)malloc(sizeof(char)*VALUES_LENGTH);
00076
00077     for(i=0; i<VALUES_LENGTH; i++){
00078         temp[i] = ' ';
00079     }
00080     j = 0;
00081     temp[j] = line[NAMES_LENGTH];
00082     j++;
00083     for(i=(NAMES_LENGTH+1); i<(NAMES_LENGTH+VALUES_LENGTH-2);i++){
00084         if(isdigit(line[i])){
00085             temp[j] = line[i];
00086             j++;
00087         }
00088         if((line[i]=='.' & (isdigit(line[i-1])>0) & (isdigit(line[i+1])>0)){
00089             temp[j] = line[i];
00090             j++;
00091         }
00092         if(line[i]=='e'){
00093             temp[j] = line[i];
00094             j++;
00095         }
00096         if((line[i]=='-' | (line[i]=='+')){
00097             temp[j] = line[i];
00098             j++;
00099         }
00100     }
00101     j = 0;
00102     for(i=0; i<VALUES_LENGTH; i++){
00103         value[i] = temp[i];
00104     }
00105     for(i=0; i<VALUES_LENGTH; i++){
00106         if(value[i] == '.'){
00107             flag_decimal = 1;
00108             break;
00109         }
00110     }
00111     for(i=0; i<VALUES_LENGTH; i++){
00112         if (value[i]=='e'){
00113             value[i] = 'd';
00114         }
00115         if(value[i] == 'd'){
00116             flag_exponent = 1;
00117         }
00118     }
00119     if ((flag_decimal == 0)&(flag_exponent == 0)){
00120         for(i=0; i<VALUES_LENGTH; i++){
00121             if(isdigit(value[VALUES_LENGTH-1-i]) > 0){
00122                 value[VALUES_LENGTH-1-i+1] = '.';
00123                 value[VALUES_LENGTH-1-i+2] = '0';
00124                 break;
00125             }
00126         }
00127     }
00128     if (flag_exponent == 0){
00129         for(i=0; i<VALUES_LENGTH; i++){
00130             if(isdigit(value[VALUES_LENGTH-1-i]) > 0){
00131                 value[VALUES_LENGTH-1-i+1] = 'd';
00132                 value[VALUES_LENGTH-1-i+2] = '0';
00133                 break;
00134             }
00135         }
00136     }
00137     free(temp);
00138 }
00139
00146 void format_uncertainties(char *line, char *uncertainty){
00147     size_t i;
00148     size_t j;
00149     int flag_exponent = 0;
00150
00151     char *temp = (char *)malloc(sizeof(char)*UNCERTAINTIES_LENGTH);

```

```

00152     for(i=0; i<UNCERTAINTIES_LENGTH; i++){
00153         temp[i] = ' ';
00154     }
00155     j = 0;
00156     if(line[NAMES_LENGTH+VALUES_LENGTH] != ' '){
00157         temp[j] = line[NAMES_LENGTH+VALUES_LENGTH];
00158     }
00159     j++;
00160     for(i=(NAMES_LENGTH+VALUES_LENGTH+1); i<(NAMES_LENGTH+VALUES_LENGTH+UNCERTAINTIES_LENGTH-2);i++){
00161         if (strcmp(&line[NAMES_LENGTH+VALUES_LENGTH], "(exact)", 7)==0){
00162             temp[0] = '0';
00163             temp[1] = '.';
00164             temp[2] = '0';
00165             break;
00166         }
00167
00168         if(isdigit(line[i])){
00169             temp[j] = line[i];
00170             j++;
00171         }
00172         if((line[i]=='.' & (isdigit(line[i-1])>0) & (isdigit(line[i+1])>0)){
00173             temp[j] = line[i];
00174             j++;
00175         }
00176         if(line[i]=='e'){
00177             temp[j] = line[i];
00178             j++;
00179         }
00180         if((line[i]=='-' | (line[i]=='+')){
00181             temp[j] = line[i];
00182             j++;
00183         }
00184     }
00185     for(i=0; i<UNCERTAINTIES_LENGTH; i++){
00186         uncertainty[i] = temp[i];
00187     }
00188     for(i=0; i<UNCERTAINTIES_LENGTH; i++){
00189         if (uncertainty[i]=='e'){
00190             uncertainty[i] = 'd';
00191         }
00192         if(uncertainty[i] == 'd'){
00193             flag_exponent = 1;
00194         }
00195     }
00196     if (flag_exponent == 0){
00197         for(i=0; i<UNCERTAINTIES_LENGTH; i++){
00198             if(isdigit(uncertainty[UNCERTAINTIES_LENGTH-1-i]) > 0){
00199                 uncertainty[UNCERTAINTIES_LENGTH-1-i+1] = 'd';
00200                 uncertainty[UNCERTAINTIES_LENGTH-1-i+2] = '0';
00201                 break;
00202             }
00203         }
00204     }
00205
00206     free(temp);
00207 }
00208
00215 void format_units(char *line, char *unit){
00216     size_t i;
00217
00218
00219     for(i=0; i<UNITS_LENGTH; i++){
00220         unit[i] = line[i+NAMES_LENGTH+VALUES_LENGTH+UNCERTAINTIES_LENGTH];
00221     }
00222 }
00227 void convert_value_to_c(char *value){
00228     size_t i;
00229     for(i=0; i<VALUES_LENGTH; i++){
00230         if(value[i] == 'd'){
00231             value[i] = 'e';
00232         }
00233     }
00234 }
00235
00242 void clean_line(char *buf, size_t buffer_size){
00243
00244     size_t i;
00245     for(i=0; i<=buffer_size; i++){
00246         buf[i] = ' ';
00247     }
00248     buf[buffer_size] = '\0';
00249 }
00250
00259 int read_line(FILE *f, char *buf, size_t buffer_size){
00260
00261     char c;
00262     size_t i = 0;

```

```

00263     int empty=0;
00264     clean_line(buf, buffer_size);
00265     while(((c=fgetc(f)) != '\n') & (!feof(f))) {
00266         if(i<buffer_size){
00267             buf[i] = c;
00268             i++;
00269         }
00270     }
00271     if ( i <= 0){
00272         empty = 1;
00273     }
00274
00275     return empty;
00276 }
00277
00284 void ltrim(char *buf, size_t buffer_size){
00285     size_t i, j, k;
00286     i = 0;
00287     j = 0;
00288     k = 0;
00289     char *temp = (char *)malloc(sizeof(char)*(buffer_size+1));
00290     for(i=0; i<buffer_size; i++){
00291         if(isalnum(buf[i])>0){
00292             k = i;
00293             break;
00294         }
00295     }
00296     clean_line(temp, buffer_size);
00297     for(i=k; i<buffer_size; i++){
00298         temp[j] = buf[i];
00299         j++;
00300     }
00301     clean_line(buf, buffer_size);
00302     for(i=0; i<buffer_size; i++){
00303         buf[i] = temp[i];
00304     }
00305     free(temp);
00306 }
00307 }
00308
00315 void rtrim(char *buf, size_t buffer_size){
00316     size_t i;
00317     for(i=0; i<buffer_size; i++){
00318         if(isalnum(buf[buffer_size-i])>0){
00319             break;
00320         }else{
00321             buf[buffer_size-i] = ' ';
00322         }
00323     }
00324     buf[buffer_size-i+1] = '\0';
00325 }
00326
00334 int is_blank_line(char *buf, size_t buffer_size){
00335     size_t i;
00336     size_t j;
00337     i = 0;
00338     j = 0;
00339     for(i=0; i<buffer_size; i++){
00340         if(isalnum(buf[i])>0){
00341             j++;
00342         }
00343     }
00344     if(j>0){
00345         return 0;
00346     }
00347     else{
00348         return 1;
00349     }
00350 }
00351
00357 void get_props(struct codata_file_props *props){
00358     FILE *codata;
00359     char *line = (char *)malloc(sizeof(char)*(LINE_LENGTH+1));
00360     int empty;
00361
00362     codata = fopen(props->codata_path, "r");
00363
00364     props->n = 0;
00365     props->index_header_end = 0;
00366
00367     while (!feof(codata)){
00368         read_line(codata, line, LINE_LENGTH);
00369         if (line[0] == '-') {
00370             props->index_header_end = props->index_header_end + 1 ;
00371             break;
00372         }
00373     }

```

```

00374     props->index_header_end = props->index_header_end + 1 ;
00375 }
00376
00377 while (!feof(codata)){
00378     empty = read_line(codata, line, LINE_LENGTH);
00379
00380     if (empty == 0){
00381         props->n = props->n + 1 ;
00382     }
00383 }
00384
00385 fclose(codata);
00386 free(line);
00387
00388 }
00389
00395 void print_props(struct codata_file_props *props){
00396     printf("Header ends at index: %zu\n", props->index_header_end);
00397     printf("Number of constants: %zu\n", props->n);
00398 }
00399
00400
00401 /* FORTRAN */
00402
00408 void write_fortran_file_doc(FILE *fcode){
00409     char *line = (char *)malloc(sizeof(char)*(LINE_LENGTH+1));
00410
00411     fprintf(fcode, "%s\n", "!'> @file");
00412     fprintf(fcode, "%s\n", "!! @brief Codata module - autogenerated.");
00413     fprintf(fcode, "%s\n\n", "");
00414     free(line);
00415 }
00416
00422 void write_fortran_module_doc(FILE *fcode){
00423     fprintf(fcode, "!'> %s\n", "@brief Codata constants - autogenerated.");
00424 }
00425
00431 void write_fortran_module_declaration(FILE *fcode){
00432     fprintf(fcode, "module codata\n");
00433     fprintf(fcode, "%s\n", "use iso_fortran_env");
00434     fprintf(fcode, "%s\n", "implicit none");
00435     fprintf(fcode, "%s\n", "");
00436 }
00437
00443 void write_fortran_module_end(FILE *fcode){
00444     fprintf(fcode, "end module codata\n");
00445 }
00446
00447
00448 /* C */
00449
00454 void write_c_header_doc(FILE *fcode){
00455     fprintf(fcode, "/*\n* %s\n", "@file");
00456     fprintf(fcode, "%s\n", "* @brief Codata module - autogenerated.");
00457     fprintf(fcode, "%s\n", "*/");
00458 }
00459
00460
00461 /* Python */
00462
00463 void write_python_module_doc(FILE *fcode){
00464     fprintf(fcode, "\"\\\"\\\"Codata module - autogenerated\\\"\\\"\\\"");
00465     fprintf(fcode, "\\n\\n");
00466 }
00467
00468 /* CPython */
00469 void write_cpython_extension_declaration(FILE *fcode){
00470
00471     fprintf(fcode, "#define PY_SSIZE_T_CLEAN\n");
00472     fprintf(fcode, "#include <Python.h>\n");
00473     fprintf(fcode, "#include \"codata.h\"\n");
00474     fprintf(fcode, "\\n\\n");
00475     fprintf(fcode, "PyDoc_STRVAR(module_docstring, \"C extension for codata constants.\\n\");");
00476     fprintf(fcode, "\\n\\n");
00477     fprintf(fcode, "static PyMethodDef myMethods[] = {{ NULL, NULL, 0, NULL }};");
00478     fprintf(fcode, "\\n\\n");
00479     fprintf(fcode, "static struct PyModuleDef codata = {PyModuleDef_HEAD_INIT, \"codata\\n",
module_docstring, -1, myMethods});");
00480     fprintf(fcode, "\\n\\n");
00481     fprintf(fcode, "PyMODINIT_FUNC PyInit_codata(void){\n");
00482     fprintf(fcode, "    \tPyObject *m;\n");
00483     fprintf(fcode, "    \tPyObject *d;\n");
00484     fprintf(fcode, "    \tPyObject *v;\n");
00485     fprintf(fcode, "    \tm = PyModule_Create(&codata);\n");
00486     fprintf(fcode, "    \td = PyModule_GetDict(m);\n");
00487     fprintf(fcode, "    \n");
00488 }

```



```

00489
00490 void write_cpython_extension_end(FILE *fcodes){
00491     fprintf(fcodes, "\treturn m;\n");
00492     fprintf(fcodes, "}");
00493 }
00494
00505 void write_all_constants(FILE *fcodata,
00506                          FILE *ffortran,
00507                          FILE *fcheader,
00508                          FILE *fpython,
00509                          FILE *fcpython,
00510                          struct codata_file_props *props){
00511     int empty;
00512     size_t i;
00513
00514     char *line = (char *)malloc(sizeof(char)*(LINE_LENGTH+1));
00515     char *name = (char *)malloc(sizeof(char)*(NAMES_LENGTH+1));
00516     char *value = (char *)malloc(sizeof(char)*(VALUES_LENGTH+1));
00517     char *uncertainty = (char *)malloc(sizeof(char)*(UNCERTAINTIES_LENGTH+1));
00518     char *unit = (char *)malloc(sizeof(char)*(UNITS_LENGTH+1));
00519
00520     fseek(fcodes, 0, SEEK_SET);
00521     for (i=0; i<props->index_header_end;i++){
00522         empty = read_line(fcodes, line, LINE_LENGTH);
00523     }
00524
00525     for(i=0; i<props->n; i++){
00526         clean_line(line, LINE_LENGTH);
00527         clean_line(name, NAMES_LENGTH);
00528         clean_line(value, VALUES_LENGTH);
00529         clean_line(uncertainty, UNCERTAINTIES_LENGTH);
00530         clean_line(unit, UNITS_LENGTH);
00531         empty = read_line(fcodes, line, LINE_LENGTH);
00532         if(empty == 0){
00533             format_names(line, name);
00534             format_values(line, value);
00535             format_uncertainties(line, uncertainty);
00536             format_units(line, unit);
00537             rtrim(name, NAMES_LENGTH);
00538             rtrim(value, VALUES_LENGTH);
00539             rtrim(uncertainty, UNCERTAINTIES_LENGTH);
00540             rtrim(unit, UNITS_LENGTH);
00541
00542             // fortran code
00543             fprintf(ffortran, "real(real64), parameter:: &\n%s=%s !< %s\n", name, value, unit);
00544             fprintf(ffortran, "real(real64), parameter :: &\nU_%s=%s !< %s\n", name, uncertainty,
00545 unit);
00546             fprintf(ffortran, "\n");
00547
00548             // C code
00549             convert_value_to_c(value);
00550             convert_value_to_c(uncertainty);
00551             fprintf(fcheader, "const double %s=%s;/**< %s */\n", name, value, unit);
00552             fprintf(fcheader, "const double U_%s=%s;/**< %s */\n", name, uncertainty, unit);
00553             fprintf(fcheader, "\n");
00554
00555             // Python code
00556             fprintf(fpython, "%s=%s # %s \n", name, value, unit);
00557             fprintf(fpython, "U_%s=%s # %s \n", name, uncertainty, unit);
00558             fprintf(fpython, "\n");
00559
00560             // CPython code
00561             fprintf(fcpython, "\tv = PyFloat_FromDouble(%s);\n", name);
00562             fprintf(fcpython, "\tPyDict_SetItemString(d, \"%s\", v);\n", name);
00563             fprintf(fcpython, "\tPy_INCREF(v);\n");
00564             fprintf(fcpython, "\tv = PyFloat_FromDouble(U_%s);\n", name);
00565             fprintf(fcpython, "\tPyDict_SetItemString(d, \"%s\", v);\n", name);
00566             fprintf(fcpython, "\tPy_INCREF(v);\n");
00567             fprintf(fcpython, "\n");
00568         }
00569     }
00570 }
00571
00572 free(line);
00573 free(name);
00574 free(value);
00575 free(uncertainty);
00576 free(unit);
00577
00578 }
00579
00580
00581 int main(int argc, char **argv){
00582     FILE *fcodata;
00583     FILE *ffortran;

```

```

00592     FILE *fcheader;
00593     FILE *fpython;
00594     FILE *fcpython;
00595     struct codata_file_props *props;
00596
00597     struct codata_file_props props_current = {0, 0, "./codata_2018.txt"};
00598
00599     // avoid compiler complaining
00600     if (argc>1){
00601         printf("%d %s", argc, argv[1]);
00602     }
00603
00604     /* Codata current (2018)*/
00605     props = &props_current;
00606     fcodata = fopen(props->codata_path, "x");
00607     ffortran = fopen("fcodata.f90", "w");
00608     fcheader = fopen("ccodata.h", "w");
00609     fpython = fopen("pycodata.py", "w");
00610     fcpython = fopen("cpycodata.c", "w");
00611     get_props(props);
00612     write_fortran_file_doc(ffortran);
00613     write_fortran_module_doc(ffortran);
00614     write_fortran_module_declaration(ffortran);
00615     write_c_header_doc(fcheader);
00616     write_python_module_doc(fpython);
00617     write_cpython_extension_declaration(fcpython);
00618     write_all_constants(fcodata, ffortran, fcheader, fpython, fcpython, props);
00619     write_fortran_module_end(ffortran);
00620     write_cpython_extension_end(fcpython);
00621     fclose(ffortran);
00622     fclose(fcheader);
00623     fclose(fpython);
00624     fclose(fcodata);
00625
00626
00627     return EXIT_SUCCESS;
00628 }

```

## 17.20 /Users/milan/programs/codata/src/pycodata.py File Reference

### Namespaces

- namespace [pycodata](#)

### Variables

- float [pycodata.ALPHA\\_PARTICLE\\_ELECTRON\\_MASS\\_RATIO](#) = 7294.29954142e0
- float [pycodata.U\\_ALPHA\\_PARTICLE\\_ELECTRON\\_MASS\\_RATIO](#) = 0.00000024e0
- float [pycodata.ALPHA\\_PARTICLE\\_MASS](#) = 6.6446573357e-27
- float [pycodata.U\\_ALPHA\\_PARTICLE\\_MASS](#) = 0.0000000020e-27
- float [pycodata.ALPHA\\_PARTICLE\\_MASS\\_ENERGY\\_EQUIVALENT](#) = 5.9719201914e-10
- float [pycodata.U\\_ALPHA\\_PARTICLE\\_MASS\\_ENERGY\\_EQUIVALENT](#) = 0.0000000018e-10
- float [pycodata.ALPHA\\_PARTICLE\\_MASS\\_ENERGY\\_EQUIVALENT\\_IN\\_MEV](#) = 3727.3794066e0
- float [pycodata.U\\_ALPHA\\_PARTICLE\\_MASS\\_ENERGY\\_EQUIVALENT\\_IN\\_MEV](#) = 0.0000011e0
- float [pycodata.ALPHA\\_PARTICLE\\_MASS\\_IN\\_U](#) = 4.001506179127e0
- float [pycodata.U\\_ALPHA\\_PARTICLE\\_MASS\\_IN\\_U](#) = 0.000000000063e0
- float [pycodata.ALPHA\\_PARTICLE\\_MOLAR\\_MASS](#) = 4.0015061777e-3
- float [pycodata.U\\_ALPHA\\_PARTICLE\\_MOLAR\\_MASS](#) = 0.0000000012e-3
- float [pycodata.ALPHA\\_PARTICLE\\_PROTON\\_MASS\\_RATIO](#) = 3.97259969009e0
- float [pycodata.U\\_ALPHA\\_PARTICLE\\_PROTON\\_MASS\\_RATIO](#) = 0.00000000022e0
- float [pycodata.ALPHA\\_PARTICLE\\_RELATIVE\\_ATOMIC\\_MASS](#) = 4.001506179127e0
- float [pycodata.U\\_ALPHA\\_PARTICLE\\_RELATIVE\\_ATOMIC\\_MASS](#) = 0.000000000063e0
- float [pycodata.ANGSTROM\\_STAR](#) = 1.00001495e-10
- float [pycodata.U\\_ANGSTROM\\_STAR](#) = 0.00000090e-10
- float [pycodata.ATOMIC\\_MASS\\_CONSTANT](#) = 1.66053906660e-27

- float `pycodata.U_ATOMIC_MASS_CONSTANT` = 0.00000000050e-27
- float `pycodata.ATOMIC_MASS_CONSTANT_ENERGY_EQUIVALENT` = 1.49241808560e-10
- float `pycodata.U_ATOMIC_MASS_CONSTANT_ENERGY_EQUIVALENT` = 0.00000000045e-10
- float `pycodata.ATOMIC_MASS_CONSTANT_ENERGY_EQUIVALENT_IN_MEV` = 931.49410242e0
- float `pycodata.U_ATOMIC_MASS_CONSTANT_ENERGY_EQUIVALENT_IN_MEV` = 0.00000028e0
- float `pycodata.ATOMIC_MASS_UNIT_ELECTRON_VOLT_RELATIONSHIP` = 9.3149410242e8
- float `pycodata.U_ATOMIC_MASS_UNIT_ELECTRON_VOLT_RELATIONSHIP` = 0.0000000028e8
- float `pycodata.ATOMIC_MASS_UNIT_HARTREE_RELATIONSHIP` = 3.4231776874e7
- float `pycodata.U_ATOMIC_MASS_UNIT_HARTREE_RELATIONSHIP` = 0.0000000010e7
- float `pycodata.ATOMIC_MASS_UNIT_HERTZ_RELATIONSHIP` = 2.25234271871e23
- float `pycodata.U_ATOMIC_MASS_UNIT_HERTZ_RELATIONSHIP` = 0.00000000068e23
- float `pycodata.ATOMIC_MASS_UNIT_INVERSE_METER_RELATIONSHIP` = 7.5130066104e14
- float `pycodata.U_ATOMIC_MASS_UNIT_INVERSE_METER_RELATIONSHIP` = 0.0000000023e14
- float `pycodata.ATOMIC_MASS_UNIT_JOULE_RELATIONSHIP` = 1.49241808560e-10
- float `pycodata.U_ATOMIC_MASS_UNIT_JOULE_RELATIONSHIP` = 0.00000000045e-10
- float `pycodata.ATOMIC_MASS_UNIT_KELVIN_RELATIONSHIP` = 1.08095401916e13
- float `pycodata.U_ATOMIC_MASS_UNIT_KELVIN_RELATIONSHIP` = 0.00000000033e13
- float `pycodata.ATOMIC_MASS_UNIT_KILOGRAM_RELATIONSHIP` = 1.66053906660e-27
- float `pycodata.U_ATOMIC_MASS_UNIT_KILOGRAM_RELATIONSHIP` = 0.00000000050e-27
- float `pycodata.ATOMIC_UNIT_OF_1ST_HYPERPOLARIZABILITY` = 3.2063613061e-53
- float `pycodata.U_ATOMIC_UNIT_OF_1ST_HYPERPOLARIZABILITY` = 0.0000000015e-53
- float `pycodata.ATOMIC_UNIT_OF_2ND_HYPERPOLARIZABILITY` = 6.2353799905e-65
- float `pycodata.U_ATOMIC_UNIT_OF_2ND_HYPERPOLARIZABILITY` = 0.00000000038e-65
- float `pycodata.ATOMIC_UNIT_OF_ACTION` = 1.054571817e-34
- float `pycodata.U_ATOMIC_UNIT_OF_ACTION` = 0.0e0
- float `pycodata.ATOMIC_UNIT_OF_CHARGE` = 1.602176634e-19
- float `pycodata.U_ATOMIC_UNIT_OF_CHARGE` = 0.0e0
- float `pycodata.ATOMIC_UNIT_OF_CHARGE_DENSITY` = 1.08120238457e12
- float `pycodata.U_ATOMIC_UNIT_OF_CHARGE_DENSITY` = 0.00000000049e12
- float `pycodata.ATOMIC_UNIT_OF_CURRENT` = 6.623618237510e-3
- float `pycodata.U_ATOMIC_UNIT_OF_CURRENT` = 0.00000000013e-3
- float `pycodata.ATOMIC_UNIT_OF_ELECTRIC_DIPOLE_MOM` = 8.4783536255e-30
- float `pycodata.U_ATOMIC_UNIT_OF_ELECTRIC_DIPOLE_MOM` = 0.0000000013e-30
- float `pycodata.ATOMIC_UNIT_OF_ELECTRIC_FIELD` = 5.14220674763e11
- float `pycodata.U_ATOMIC_UNIT_OF_ELECTRIC_FIELD` = 0.00000000078e11
- float `pycodata.ATOMIC_UNIT_OF_ELECTRIC_FIELD_GRADIENT` = 9.7173624292e21
- float `pycodata.U_ATOMIC_UNIT_OF_ELECTRIC_FIELD_GRADIENT` = 0.00000000029e21
- float `pycodata.ATOMIC_UNIT_OF_ELECTRIC_POLARIZABILITY` = 1.64877727436e-41
- float `pycodata.U_ATOMIC_UNIT_OF_ELECTRIC_POLARIZABILITY` = 0.00000000050e-41
- float `pycodata.ATOMIC_UNIT_OF_ELECTRIC_POTENTIAL` = 27.211386245988e0
- float `pycodata.U_ATOMIC_UNIT_OF_ELECTRIC_POTENTIAL` = 0.00000000053e0
- float `pycodata.ATOMIC_UNIT_OF_ELECTRIC_QUADRUPOLE_MOM` = 4.4865515246e-40
- float `pycodata.U_ATOMIC_UNIT_OF_ELECTRIC_QUADRUPOLE_MOM` = 0.0000000014e-40
- float `pycodata.ATOMIC_UNIT_OF_ENERGY` = 4.3597447222071e-18
- float `pycodata.U_ATOMIC_UNIT_OF_ENERGY` = 0.000000000085e-18
- float `pycodata.ATOMIC_UNIT_OF_FORCE` = 8.2387234983e-8
- float `pycodata.U_ATOMIC_UNIT_OF_FORCE` = 0.0000000012e-8
- float `pycodata.ATOMIC_UNIT_OF_LENGTH` = 5.29177210903e-11
- float `pycodata.U_ATOMIC_UNIT_OF_LENGTH` = 0.00000000080e-11
- float `pycodata.ATOMIC_UNIT_OF_MAG_DIPOLE_MOM` = 1.85480201566e-23
- float `pycodata.U_ATOMIC_UNIT_OF_MAG_DIPOLE_MOM` = 0.00000000056e-23
- float `pycodata.ATOMIC_UNIT_OF_MAG_FLUX_DENSITY` = 2.35051756758e5
- float `pycodata.U_ATOMIC_UNIT_OF_MAG_FLUX_DENSITY` = 0.00000000071e5
- float `pycodata.ATOMIC_UNIT_OF_MAGNETIZABILITY` = 7.8910366008e-29
- float `pycodata.U_ATOMIC_UNIT_OF_MAGNETIZABILITY` = 0.0000000048e-29

- float `pycodata.ATOMIC_UNIT_OF_MASS` = 9.1093837015e-31
- float `pycodata.U_ATOMIC_UNIT_OF_MASS` = 0.0000000028e-31
- float `pycodata.ATOMIC_UNIT_OF_MOMENTUM` = 1.99285191410e-24
- float `pycodata.U_ATOMIC_UNIT_OF_MOMENTUM` = 0.00000000030e-24
- float `pycodata.ATOMIC_UNIT_OF_PERMITTIVITY` = 1.11265005545e-10
- float `pycodata.U_ATOMIC_UNIT_OF_PERMITTIVITY` = 0.00000000017e-10
- float `pycodata.ATOMIC_UNIT_OF_TIME` = 2.4188843265857e-17
- float `pycodata.U_ATOMIC_UNIT_OF_TIME` = 0.0000000000047e-17
- float `pycodata.ATOMIC_UNIT_OF_VELOCITY` = 2.18769126364e6
- float `pycodata.U_ATOMIC_UNIT_OF_VELOCITY` = 0.00000000033e6
- float `pycodata.AVOGADRO_CONSTANT` = 6.02214076e23
- float `pycodata.U_AVOGADRO_CONSTANT` = 0.0e0
- float `pycodata.BOHR_MAGNETON` = 9.2740100783e-24
- float `pycodata.U_BOHR_MAGNETON` = 0.0000000028e-24
- float `pycodata.BOHR_MAGNETON_IN_EV_T` = 5.7883818060e-5
- float `pycodata.U_BOHR_MAGNETON_IN_EV_T` = 0.0000000017e-5
- float `pycodata.BOHR_MAGNETON_IN_HZ_T` = 1.39962449361e10
- float `pycodata.U_BOHR_MAGNETON_IN_HZ_T` = 0.00000000042e10
- float `pycodata.BOHR_MAGNETON_IN_INVERSE_METER_PER_TESLA` = 46.686447783e0
- float `pycodata.U_BOHR_MAGNETON_IN_INVERSE_METER_PER_TESLA` = 0.000000014e0
- float `pycodata.BOHR_MAGNETON_IN_K_T` = 0.67171381563e0
- float `pycodata.U_BOHR_MAGNETON_IN_K_T` = 0.00000000020e0
- float `pycodata.BOHR_RADIUS` = 5.29177210903e-11
- float `pycodata.U_BOHR_RADIUS` = 0.00000000080e-11
- float `pycodata.BOLTZMANN_CONSTANT` = 1.380649e-23
- float `pycodata.U_BOLTZMANN_CONSTANT` = 0.0e0
- float `pycodata.BOLTZMANN_CONSTANT_IN_EV_K` = 8.617333262e-5
- float `pycodata.U_BOLTZMANN_CONSTANT_IN_EV_K` = 0.0e0
- float `pycodata.BOLTZMANN_CONSTANT_IN_HZ_K` = 2.083661912e10
- float `pycodata.U_BOLTZMANN_CONSTANT_IN_HZ_K` = 0.0e0
- float `pycodata.BOLTZMANN_CONSTANT_IN_INVERSE_METER_PER_KELVIN` = 69.50348004e0
- float `pycodata.U_BOLTZMANN_CONSTANT_IN_INVERSE_METER_PER_KELVIN` = 0.0e0
- float `pycodata.CHARACTERISTIC_IMPEDANCE_OF_VACUUM` = 376.730313668e0
- float `pycodata.U_CHARACTERISTIC_IMPEDANCE_OF_VACUUM` = 0.000000057e0
- float `pycodata.CLASSICAL_ELECTRON_RADIUS` = 2.8179403262e-15
- float `pycodata.U_CLASSICAL_ELECTRON_RADIUS` = 0.0000000013e-15
- float `pycodata.COMPTON_WAVELENGTH` = 2.42631023867e-12
- float `pycodata.U_COMPTON_WAVELENGTH` = 0.00000000073e-12
- float `pycodata.CONDUCTANCE_QUANTUM` = 7.748091729e-5
- float `pycodata.U_CONDUCTANCE_QUANTUM` = 0.0e0
- float `pycodata.CONVENTIONAL_VALUE_OF_AMPERE_90` = 1.00000008887e0
- float `pycodata.U_CONVENTIONAL_VALUE_OF_AMPERE_90` = 0.0e0
- float `pycodata.CONVENTIONAL_VALUE_OF_COULOMB_90` = 1.00000008887e0
- float `pycodata.U_CONVENTIONAL_VALUE_OF_COULOMB_90` = 0.0e0
- float `pycodata.CONVENTIONAL_VALUE_OF_FARAD_90` = 0.99999998220e0
- float `pycodata.U_CONVENTIONAL_VALUE_OF_FARAD_90` = 0.0e0
- float `pycodata.CONVENTIONAL_VALUE_OF_HENRY_90` = 1.00000001779e0
- float `pycodata.U_CONVENTIONAL_VALUE_OF_HENRY_90` = 0.0e0
- float `pycodata.CONVENTIONAL_VALUE_OF_JOSEPHSON_CONSTANT` = 483597.9e9
- float `pycodata.U_CONVENTIONAL_VALUE_OF_JOSEPHSON_CONSTANT` = 0.0e0
- float `pycodata.CONVENTIONAL_VALUE_OF_OHM_90` = 1.00000001779e0
- float `pycodata.U_CONVENTIONAL_VALUE_OF_OHM_90` = 0.0e0
- float `pycodata.CONVENTIONAL_VALUE_OF_VOLT_90` = 1.00000010666e0
- float `pycodata.U_CONVENTIONAL_VALUE_OF_VOLT_90` = 0.0e0
- float `pycodata.CONVENTIONAL_VALUE_OF_VON_KLITZING_CONSTANT` = 25812.807e0

- float `pycodata.U_CONVENTIONAL_VALUE_OF_VON_KLITZING_CONSTANT` = 0.0e0
- float `pycodata.CONVENTIONAL_VALUE_OF_WATT_90` = 1.00000019553e0
- float `pycodata.U_CONVENTIONAL_VALUE_OF_WATT_90` = 0.0e0
- float `pycodata.COPPER_X_UNIT` = 1.00207697e-13
- float `pycodata.U_COPPER_X_UNIT` = 0.00000028e-13
- float `pycodata.DEUTERON_ELECTRON_MAG__MOM__RATIO` = -4.664345551e-4
- float `pycodata.U_DEUTERON_ELECTRON_MAG__MOM__RATIO` = 0.000000012e-4
- float `pycodata.DEUTERON_ELECTRON_MASS_RATIO` = 3670.48296788e0
- float `pycodata.U_DEUTERON_ELECTRON_MASS_RATIO` = 0.00000013e0
- float `pycodata.DEUTERON_G_FACTOR` = 0.8574382338e0
- float `pycodata.U_DEUTERON_G_FACTOR` = 0.0000000022e0
- float `pycodata.DEUTERON_MAG__MOM` = 4.330735094e-27
- float `pycodata.U_DEUTERON_MAG__MOM` = 0.000000011e-27
- float `pycodata.DEUTERON_MAG__MOM__TO_BOHR_MAGNETON_RATIO` = 4.669754570e-4
- float `pycodata.U_DEUTERON_MAG__MOM__TO_BOHR_MAGNETON_RATIO` = 0.000000012e-4
- float `pycodata.DEUTERON_MAG__MOM__TO_NUCLEAR_MAGNETON_RATIO` = 0.8574382338e0
- float `pycodata.U_DEUTERON_MAG__MOM__TO_NUCLEAR_MAGNETON_RATIO` = 0.0000000022e0
- float `pycodata.DEUTERON_MASS` = 3.3435837724e-27
- float `pycodata.U_DEUTERON_MASS` = 0.0000000010e-27
- float `pycodata.DEUTERON_MASS_ENERGY_EQUIVALENT` = 3.00506323102e-10
- float `pycodata.U_DEUTERON_MASS_ENERGY_EQUIVALENT` = 0.00000000091e-10
- float `pycodata.DEUTERON_MASS_ENERGY_EQUIVALENT_IN_MEV` = 1875.61294257e0
- float `pycodata.U_DEUTERON_MASS_ENERGY_EQUIVALENT_IN_MEV` = 0.000000057e0
- float `pycodata.DEUTERON_MASS_IN_U` = 2.013553212745e0
- float `pycodata.U_DEUTERON_MASS_IN_U` = 0.000000000040e0
- float `pycodata.DEUTERON_MOLAR_MASS` = 2.01355321205e-3
- float `pycodata.U_DEUTERON_MOLAR_MASS` = 0.00000000061e-3
- float `pycodata.DEUTERON_NEUTRON_MAG__MOM__RATIO` = -0.44820653e0
- float `pycodata.U_DEUTERON_NEUTRON_MAG__MOM__RATIO` = 0.00000011e0
- float `pycodata.DEUTERON_PROTON_MAG__MOM__RATIO` = 0.30701220939e0
- float `pycodata.U_DEUTERON_PROTON_MAG__MOM__RATIO` = 0.00000000079e0
- float `pycodata.DEUTERON_PROTON_MASS_RATIO` = 1.99900750139e0
- float `pycodata.U_DEUTERON_PROTON_MASS_RATIO` = 0.00000000011e0
- float `pycodata.DEUTERON_RELATIVE_ATOMIC_MASS` = 2.013553212745e0
- float `pycodata.U_DEUTERON_RELATIVE_ATOMIC_MASS` = 0.000000000040e0
- float `pycodata.DEUTERON_RMS_CHARGE_RADIUS` = 2.12799e-15
- float `pycodata.U_DEUTERON_RMS_CHARGE_RADIUS` = 0.00074e-15
- float `pycodata.ELECTRON_CHARGE_TO_MASS_QUOTIENT` = -1.75882001076e11
- float `pycodata.U_ELECTRON_CHARGE_TO_MASS_QUOTIENT` = 0.00000000053e11
- float `pycodata.ELECTRON_DEUTERON_MAG__MOM__RATIO` = -2143.9234915e0
- float `pycodata.U_ELECTRON_DEUTERON_MAG__MOM__RATIO` = 0.0000056e0
- float `pycodata.ELECTRON_DEUTERON_MASS_RATIO` = 2.724437107462e-4
- float `pycodata.U_ELECTRON_DEUTERON_MASS_RATIO` = 0.000000000096e-4
- float `pycodata.ELECTRON_G_FACTOR` = -2.00231930436256e0
- float `pycodata.U_ELECTRON_G_FACTOR` = 0.0000000000035e0
- float `pycodata.ELECTRON_GYROMAG__RATIO` = 1.76085963023e11
- float `pycodata.U_ELECTRON_GYROMAG__RATIO` = 0.00000000053e11
- float `pycodata.ELECTRON_GYROMAG__RATIO_IN_MHZ_T` = 28024.9514242e0
- float `pycodata.U_ELECTRON_GYROMAG__RATIO_IN_MHZ_T` = 0.0000085e0
- float `pycodata.ELECTRON_HELION_MASS_RATIO` = 1.819543074573e-4
- float `pycodata.U_ELECTRON_HELION_MASS_RATIO` = 0.000000000079e-4
- float `pycodata.ELECTRON_MAG__MOM` = -9.2847647043e-24
- float `pycodata.U_ELECTRON_MAG__MOM` = 0.0000000028e-24
- float `pycodata.ELECTRON_MAG__MOM__ANOMALY` = 1.15965218128e-3
- float `pycodata.U_ELECTRON_MAG__MOM__ANOMALY` = 0.00000000018e-3

- float `pycodata.ELECTRON_MAG__MOM__TO_BOHR_MAGNETON_RATIO` = -1.00115965218128e0
- float `pycodata.U_ELECTRON_MAG__MOM__TO_BOHR_MAGNETON_RATIO` = 0.00000000000018e0
- float `pycodata.ELECTRON_MAG__MOM__TO_NUCLEAR_MAGNETON_RATIO` = -1838.28197188e0
- float `pycodata.U_ELECTRON_MAG__MOM__TO_NUCLEAR_MAGNETON_RATIO` = 0.00000011e0
- float `pycodata.ELECTRON_MASS` = 9.1093837015e-31
- float `pycodata.U_ELECTRON_MASS` = 0.0000000028e-31
- float `pycodata.ELECTRON_MASS_ENERGY_EQUIVALENT` = 8.1871057769e-14
- float `pycodata.U_ELECTRON_MASS_ENERGY_EQUIVALENT` = 0.0000000025e-14
- float `pycodata.ELECTRON_MASS_ENERGY_EQUIVALENT_IN_MEV` = 0.51099895000e0
- float `pycodata.U_ELECTRON_MASS_ENERGY_EQUIVALENT_IN_MEV` = 0.00000000015e0
- float `pycodata.ELECTRON_MASS_IN_U` = 5.48579909065e-4
- float `pycodata.U_ELECTRON_MASS_IN_U` = 0.00000000016e-4
- float `pycodata.ELECTRON_MOLAR_MASS` = 5.4857990888e-7
- float `pycodata.U_ELECTRON_MOLAR_MASS` = 0.0000000017e-7
- float `pycodata.ELECTRON_MUON_MAG__MOM__RATIO` = 206.7669883e0
- float `pycodata.U_ELECTRON_MUON_MAG__MOM__RATIO` = 0.0000046e0
- float `pycodata.ELECTRON_MUON_MASS_RATIO` = 4.83633169e-3
- float `pycodata.U_ELECTRON_MUON_MASS_RATIO` = 0.00000011e-3
- float `pycodata.ELECTRON_NEUTRON_MAG__MOM__RATIO` = 960.92050e0
- float `pycodata.U_ELECTRON_NEUTRON_MAG__MOM__RATIO` = 0.00023e0
- float `pycodata.ELECTRON_NEUTRON_MASS_RATIO` = 5.4386734424e-4
- float `pycodata.U_ELECTRON_NEUTRON_MASS_RATIO` = 0.0000000026e-4
- float `pycodata.ELECTRON_PROTON_MAG__MOM__RATIO` = -658.21068789e0
- float `pycodata.U_ELECTRON_PROTON_MAG__MOM__RATIO` = 0.00000020e0
- float `pycodata.ELECTRON_PROTON_MASS_RATIO` = 5.44617021487e-4
- float `pycodata.U_ELECTRON_PROTON_MASS_RATIO` = 0.00000000033e-4
- float `pycodata.ELECTRON_RELATIVE_ATOMIC_MASS` = 5.48579909065e-4
- float `pycodata.U_ELECTRON_RELATIVE_ATOMIC_MASS` = 0.00000000016e-4
- float `pycodata.ELECTRON_TAU_MASS_RATIO` = 2.87585e-4
- float `pycodata.U_ELECTRON_TAU_MASS_RATIO` = 0.00019e-4
- float `pycodata.ELECTRON_TO_ALPHA_PARTICLE_MASS_RATIO` = 1.370933554787e-4
- float `pycodata.U_ELECTRON_TO_ALPHA_PARTICLE_MASS_RATIO` = 0.000000000045e-4
- float `pycodata.ELECTRON_TO_SHIELDED_HELION_MAG__MOM__RATIO` = 864.058257e0
- float `pycodata.U_ELECTRON_TO_SHIELDED_HELION_MAG__MOM__RATIO` = 0.000010e0
- float `pycodata.ELECTRON_TO_SHIELDED_PROTON_MAG__MOM__RATIO` = -658.2275971e0
- float `pycodata.U_ELECTRON_TO_SHIELDED_PROTON_MAG__MOM__RATIO` = 0.0000072e0
- float `pycodata.ELECTRON_TRITON_MASS_RATIO` = 1.819200062251e-4
- float `pycodata.U_ELECTRON_TRITON_MASS_RATIO` = 0.000000000090e-4
- float `pycodata.ELECTRON_VOLT` = 1.602176634e-19
- float `pycodata.U_ELECTRON_VOLT` = 0.0e0
- float `pycodata.ELECTRON_VOLT_ATOMIC_MASS_UNIT_RELATIONSHIP` = 1.07354410233e-9
- float `pycodata.U_ELECTRON_VOLT_ATOMIC_MASS_UNIT_RELATIONSHIP` = 0.00000000032e-9
- float `pycodata.ELECTRON_VOLT_HARTREE_RELATIONSHIP` = 3.6749322175655e-2
- float `pycodata.U_ELECTRON_VOLT_HARTREE_RELATIONSHIP` = 0.000000000071e-2
- float `pycodata.ELECTRON_VOLT_HERTZ_RELATIONSHIP` = 2.417989242e14
- float `pycodata.U_ELECTRON_VOLT_HERTZ_RELATIONSHIP` = 0.0e0
- float `pycodata.ELECTRON_VOLT_INVERSE_METER_RELATIONSHIP` = 8.065543937e5
- float `pycodata.U_ELECTRON_VOLT_INVERSE_METER_RELATIONSHIP` = 0.0e0
- float `pycodata.ELECTRON_VOLT_JOULE_RELATIONSHIP` = 1.602176634e-19
- float `pycodata.U_ELECTRON_VOLT_JOULE_RELATIONSHIP` = 0.0e0
- float `pycodata.ELECTRON_VOLT_KELVIN_RELATIONSHIP` = 1.160451812e4
- float `pycodata.U_ELECTRON_VOLT_KELVIN_RELATIONSHIP` = 0.0e0
- float `pycodata.ELECTRON_VOLT_KILOGRAM_RELATIONSHIP` = 1.782661921e-36
- float `pycodata.U_ELECTRON_VOLT_KILOGRAM_RELATIONSHIP` = 0.0e0
- float `pycodata.ELEMENTARY_CHARGE` = 1.602176634e-19



- float `pycodata.U_ELEMENTARY_CHARGE` = 0.0e0
- float `pycodata.ELEMENTARY_CHARGE_OVER_H_BAR` = 1.519267447e15
- float `pycodata.U_ELEMENTARY_CHARGE_OVER_H_BAR` = 0.0e0
- float `pycodata.FARADAY_CONSTANT` = 96485.33212e0
- float `pycodata.U_FARADAY_CONSTANT` = 0.0e0
- float `pycodata.FERMI_COUPLING_CONSTANT` = 1.1663787e-5
- float `pycodata.U_FERMI_COUPLING_CONSTANT` = 0.0000006e-5
- float `pycodata.FINE_STRUCTURE_CONSTANT` = 7.2973525693e-3
- float `pycodata.U_FINE_STRUCTURE_CONSTANT` = 0.000000011e-3
- float `pycodata.FIRST_RADIATION_CONSTANT` = 3.741771852e-16
- float `pycodata.U_FIRST_RADIATION_CONSTANT` = 0.0e0
- float `pycodata.FIRST_RADIATION_CONSTANT_FOR_SPECTRAL_RADIANCE` = 1.191042972e-16
- float `pycodata.U_FIRST_RADIATION_CONSTANT_FOR_SPECTRAL_RADIANCE` = 0.0e0
- float `pycodata.HARTREE_ATOMIC_MASS_UNIT_RELATIONSHIP` = 2.92126232205e-8
- float `pycodata.U_HARTREE_ATOMIC_MASS_UNIT_RELATIONSHIP` = 0.00000000088e-8
- float `pycodata.HARTREE_ELECTRON_VOLT_RELATIONSHIP` = 27.211386245988e0
- float `pycodata.U_HARTREE_ELECTRON_VOLT_RELATIONSHIP` = 0.000000000053e0
- float `pycodata.HARTREE_ENERGY` = 4.3597447222071e-18
- float `pycodata.U_HARTREE_ENERGY` = 0.000000000085e-18
- float `pycodata.HARTREE_ENERGY_IN_EV` = 27.211386245988e0
- float `pycodata.U_HARTREE_ENERGY_IN_EV` = 0.000000000053e0
- float `pycodata.HARTREE_HERTZ_RELATIONSHIP` = 6.579683920502e15
- float `pycodata.U_HARTREE_HERTZ_RELATIONSHIP` = 0.000000000013e15
- float `pycodata.HARTREE_INVERSE_METER_RELATIONSHIP` = 2.1947463136320e7
- float `pycodata.U_HARTREE_INVERSE_METER_RELATIONSHIP` = 0.000000000043e7
- float `pycodata.HARTREE_JOULE_RELATIONSHIP` = 4.3597447222071e-18
- float `pycodata.U_HARTREE_JOULE_RELATIONSHIP` = 0.000000000085e-18
- float `pycodata.HARTREE_KELVIN_RELATIONSHIP` = 3.1577502480407e5
- float `pycodata.U_HARTREE_KELVIN_RELATIONSHIP` = 0.000000000061e5
- float `pycodata.HARTREE_KILOGRAM_RELATIONSHIP` = 4.8508702095432e-35
- float `pycodata.U_HARTREE_KILOGRAM_RELATIONSHIP` = 0.000000000094e-35
- float `pycodata.HELION_ELECTRON_MASS_RATIO` = 5495.88528007e0
- float `pycodata.U_HELION_ELECTRON_MASS_RATIO` = 0.00000024e0
- float `pycodata.HELION_G_FACTOR` = -4.255250615e0
- float `pycodata.U_HELION_G_FACTOR` = 0.00000050e0
- float `pycodata.HELION_MAG_MOM` = -1.074617532e-26
- float `pycodata.U_HELION_MAG_MOM` = 0.000000013e-26
- float `pycodata.HELION_MAG_MOM_TO_BOHR_MAGNETON_RATIO` = -1.158740958e-3
- float `pycodata.U_HELION_MAG_MOM_TO_BOHR_MAGNETON_RATIO` = 0.000000014e-3
- float `pycodata.HELION_MAG_MOM_TO_NUCLEAR_MAGNETON_RATIO` = -2.127625307e0
- float `pycodata.U_HELION_MAG_MOM_TO_NUCLEAR_MAGNETON_RATIO` = 0.000000025e0
- float `pycodata.HELION_MASS` = 5.0064127796e-27
- float `pycodata.U_HELION_MASS` = 0.0000000015e-27
- float `pycodata.HELION_MASS_ENERGY_EQUIVALENT` = 4.4995394125e-10
- float `pycodata.U_HELION_MASS_ENERGY_EQUIVALENT` = 0.0000000014e-10
- float `pycodata.HELION_MASS_ENERGY_EQUIVALENT_IN_MEV` = 2808.39160743e0
- float `pycodata.U_HELION_MASS_ENERGY_EQUIVALENT_IN_MEV` = 0.00000085e0
- float `pycodata.HELION_MASS_IN_U` = 3.014932247175e0
- float `pycodata.U_HELION_MASS_IN_U` = 0.000000000097e0
- float `pycodata.HELION_MOLAR_MASS` = 3.01493224613e-3
- float `pycodata.U_HELION_MOLAR_MASS` = 0.00000000091e-3
- float `pycodata.HELION_PROTON_MASS_RATIO` = 2.99315267167e0
- float `pycodata.U_HELION_PROTON_MASS_RATIO` = 0.00000000013e0
- float `pycodata.HELION_RELATIVE_ATOMIC_MASS` = 3.014932247175e0
- float `pycodata.U_HELION_RELATIVE_ATOMIC_MASS` = 0.000000000097e0

- float `pycodata.HELION_SHIELDING_SHIFT` = 5.996743e-5
- float `pycodata.U_HELION_SHIELDING_SHIFT` = 0.000010e-5
- float `pycodata.HERTZ_ATOMIC_MASS_UNIT_RELATIONSHIP` = 4.4398216652e-24
- float `pycodata.U_HERTZ_ATOMIC_MASS_UNIT_RELATIONSHIP` = 0.0000000013e-24
- float `pycodata.HERTZ_ELECTRON_VOLT_RELATIONSHIP` = 4.135667696e-15
- float `pycodata.U_HERTZ_ELECTRON_VOLT_RELATIONSHIP` = 0.0e0
- float `pycodata.HERTZ_HARTREE_RELATIONSHIP` = 1.5198298460570e-16
- float `pycodata.U_HERTZ_HARTREE_RELATIONSHIP` = 0.000000000029e-16
- float `pycodata.HERTZ_INVERSE_METER_RELATIONSHIP` = 3.335640951e-9
- float `pycodata.U_HERTZ_INVERSE_METER_RELATIONSHIP` = 0.0e0
- float `pycodata.HERTZ_JOULE_RELATIONSHIP` = 6.62607015e-34
- float `pycodata.U_HERTZ_JOULE_RELATIONSHIP` = 0.0e0
- float `pycodata.HERTZ_KELVIN_RELATIONSHIP` = 4.799243073e-11
- float `pycodata.U_HERTZ_KELVIN_RELATIONSHIP` = 0.0e0
- float `pycodata.HERTZ_KILOGRAM_RELATIONSHIP` = 7.372497323e-51
- float `pycodata.U_HERTZ_KILOGRAM_RELATIONSHIP` = 0.0e0
- float `pycodata.HYPERFINE_TRANSITION_FREQUENCY_OF_CS_133` = 9192631770.0e0
- float `pycodata.U_HYPERFINE_TRANSITION_FREQUENCY_OF_CS_133` = 0.0e0
- float `pycodata.INVERSE_FINE_STRUCTURE_CONSTANT` = 137.035999084e0
- float `pycodata.U_INVERSE_FINE_STRUCTURE_CONSTANT` = 0.000000021e0
- float `pycodata.INVERSE_METER_ATOMIC_MASS_UNIT_RELATIONSHIP` = 1.33102505010e-15
- float `pycodata.U_INVERSE_METER_ATOMIC_MASS_UNIT_RELATIONSHIP` = 0.00000000040e-15
- float `pycodata.INVERSE_METER_ELECTRON_VOLT_RELATIONSHIP` = 1.239841984e-6
- float `pycodata.U_INVERSE_METER_ELECTRON_VOLT_RELATIONSHIP` = 0.0e0
- float `pycodata.INVERSE_METER_HARTREE_RELATIONSHIP` = 4.5563352529120e-8
- float `pycodata.U_INVERSE_METER_HARTREE_RELATIONSHIP` = 0.000000000088e-8
- float `pycodata.INVERSE_METER_HERTZ_RELATIONSHIP` = 299792458.0e0
- float `pycodata.U_INVERSE_METER_HERTZ_RELATIONSHIP` = 0.0e0
- float `pycodata.INVERSE_METER_JOULE_RELATIONSHIP` = 1.986445857e-25
- float `pycodata.U_INVERSE_METER_JOULE_RELATIONSHIP` = 0.0e0
- float `pycodata.INVERSE_METER_KELVIN_RELATIONSHIP` = 1.438776877e-2
- float `pycodata.U_INVERSE_METER_KELVIN_RELATIONSHIP` = 0.0e0
- float `pycodata.INVERSE_METER_KILOGRAM_RELATIONSHIP` = 2.210219094e-42
- float `pycodata.U_INVERSE_METER_KILOGRAM_RELATIONSHIP` = 0.0e0
- float `pycodata.INVERSE_OF_CONDUCTANCE_QUANTUM` = 12906.40372e0
- float `pycodata.U_INVERSE_OF_CONDUCTANCE_QUANTUM` = 0.0e0
- float `pycodata.JOSEPHSON_CONSTANT` = 483597.8484e9
- float `pycodata.U_JOSEPHSON_CONSTANT` = 0.0e0
- float `pycodata.JOULE_ATOMIC_MASS_UNIT_RELATIONSHIP` = 6.7005352565e9
- float `pycodata.U_JOULE_ATOMIC_MASS_UNIT_RELATIONSHIP` = 0.0000000020e9
- float `pycodata.JOULE_ELECTRON_VOLT_RELATIONSHIP` = 6.241509074e18
- float `pycodata.U_JOULE_ELECTRON_VOLT_RELATIONSHIP` = 0.0e0
- float `pycodata.JOULE_HARTREE_RELATIONSHIP` = 2.2937122783963e17
- float `pycodata.U_JOULE_HARTREE_RELATIONSHIP` = 0.000000000045e17
- float `pycodata.JOULE_HERTZ_RELATIONSHIP` = 1.509190179e33
- float `pycodata.U_JOULE_HERTZ_RELATIONSHIP` = 0.0e0
- float `pycodata.JOULE_INVERSE_METER_RELATIONSHIP` = 5.034116567e24
- float `pycodata.U_JOULE_INVERSE_METER_RELATIONSHIP` = 0.0e0
- float `pycodata.JOULE_KELVIN_RELATIONSHIP` = 7.242970516e22
- float `pycodata.U_JOULE_KELVIN_RELATIONSHIP` = 0.0e0
- float `pycodata.JOULE_KILOGRAM_RELATIONSHIP` = 1.112650056e-17
- float `pycodata.U_JOULE_KILOGRAM_RELATIONSHIP` = 0.0e0
- float `pycodata.KELVIN_ATOMIC_MASS_UNIT_RELATIONSHIP` = 9.2510873014e-14
- float `pycodata.U_KELVIN_ATOMIC_MASS_UNIT_RELATIONSHIP` = 0.0000000028e-14
- float `pycodata.KELVIN_ELECTRON_VOLT_RELATIONSHIP` = 8.617333262e-5



- float `pycodata.U_KELVIN_ELECTRON_VOLT_RELATIONSHIP` = 0.0e0
- float `pycodata.KELVIN_HARTREE_RELATIONSHIP` = 3.1668115634556e-6
- float `pycodata.U_KELVIN_HARTREE_RELATIONSHIP` = 0.0000000000061e-6
- float `pycodata.KELVIN_HERTZ_RELATIONSHIP` = 2.083661912e10
- float `pycodata.U_KELVIN_HERTZ_RELATIONSHIP` = 0.0e0
- float `pycodata.KELVIN_INVERSE_METER_RELATIONSHIP` = 69.50348004e0
- float `pycodata.U_KELVIN_INVERSE_METER_RELATIONSHIP` = 0.0e0
- float `pycodata.KELVIN_JOULE_RELATIONSHIP` = 1.380649e-23
- float `pycodata.U_KELVIN_JOULE_RELATIONSHIP` = 0.0e0
- float `pycodata.KELVIN_KILOGRAM_RELATIONSHIP` = 1.536179187e-40
- float `pycodata.U_KELVIN_KILOGRAM_RELATIONSHIP` = 0.0e0
- float `pycodata.KILOGRAM_ATOMIC_MASS_UNIT_RELATIONSHIP` = 6.0221407621e26
- float `pycodata.U_KILOGRAM_ATOMIC_MASS_UNIT_RELATIONSHIP` = 0.0000000018e26
- float `pycodata.KILOGRAM_ELECTRON_VOLT_RELATIONSHIP` = 5.609588603e35
- float `pycodata.U_KILOGRAM_ELECTRON_VOLT_RELATIONSHIP` = 0.0e0
- float `pycodata.KILOGRAM_HARTREE_RELATIONSHIP` = 2.0614857887409e34
- float `pycodata.U_KILOGRAM_HARTREE_RELATIONSHIP` = 0.000000000040e34
- float `pycodata.KILOGRAM_HERTZ_RELATIONSHIP` = 1.356392489e50
- float `pycodata.U_KILOGRAM_HERTZ_RELATIONSHIP` = 0.0e0
- float `pycodata.KILOGRAM_INVERSE_METER_RELATIONSHIP` = 4.524438335e41
- float `pycodata.U_KILOGRAM_INVERSE_METER_RELATIONSHIP` = 0.0e0
- float `pycodata.KILOGRAM_JOULE_RELATIONSHIP` = 8.987551787e16
- float `pycodata.U_KILOGRAM_JOULE_RELATIONSHIP` = 0.0e0
- float `pycodata.KILOGRAM_KELVIN_RELATIONSHIP` = 6.509657260e39
- float `pycodata.U_KILOGRAM_KELVIN_RELATIONSHIP` = 0.0e0
- float `pycodata.LATTICE_PARAMETER_OF_SILICON` = 5.431020511e-10
- float `pycodata.U_LATTICE_PARAMETER_OF_SILICON` = 0.000000089e-10
- float `pycodata.LATTICE_SPACING_OF_IDEAL_SI_220` = 1.920155716e-10
- float `pycodata.U_LATTICE_SPACING_OF_IDEAL_SI_220` = 0.000000032e-10
- float `pycodata.LOSCHMIDT_CONSTANT_273_15_K_100_KPA` = 2.651645804e25
- float `pycodata.U_LOSCHMIDT_CONSTANT_273_15_K_100_KPA` = 0.0e0
- float `pycodata.LOSCHMIDT_CONSTANT_273_15_K_101_325_KPA` = 2.686780111e25
- float `pycodata.U_LOSCHMIDT_CONSTANT_273_15_K_101_325_KPA` = 0.0e0
- float `pycodata.LUMINOUS EFFICACY` = 683.0e0
- float `pycodata.U_LUMINOUS EFFICACY` = 0.0e0
- float `pycodata.MAG_FLUX_QUANTUM` = 2.067833848e-15
- float `pycodata.U_MAG_FLUX_QUANTUM` = 0.0e0
- float `pycodata.MOLAR_GAS_CONSTANT` = 8.314462618e0
- float `pycodata.U_MOLAR_GAS_CONSTANT` = 0.0e0
- float `pycodata.MOLAR_MASS_CONSTANT` = 0.99999999965e-3
- float `pycodata.U_MOLAR_MASS_CONSTANT` = 0.00000000030e-3
- float `pycodata.MOLAR_MASS_OF_CARBON_12` = 11.9999999958e-3
- float `pycodata.U_MOLAR_MASS_OF_CARBON_12` = 0.00000000036e-3
- float `pycodata.MOLAR_PLANCK_CONSTANT` = 3.990312712e-10
- float `pycodata.U_MOLAR_PLANCK_CONSTANT` = 0.0e0
- float `pycodata.MOLAR_VOLUME_OF_IDEAL_GAS_273_15_K_100_KPA` = 22.71095464e-3
- float `pycodata.U_MOLAR_VOLUME_OF_IDEAL_GAS_273_15_K_100_KPA` = 0.0e0
- float `pycodata.MOLAR_VOLUME_OF_IDEAL_GAS_273_15_K_101_325_KPA` = 22.41396954e-3
- float `pycodata.U_MOLAR_VOLUME_OF_IDEAL_GAS_273_15_K_101_325_KPA` = 0.0e0
- float `pycodata.MOLAR_VOLUME_OF_SILICON` = 1.205883199e-5
- float `pycodata.U_MOLAR_VOLUME_OF_SILICON` = 0.000000060e-5
- float `pycodata.MOLYBDENUM_X_UNIT` = 1.00209952e-13
- float `pycodata.U_MOLYBDENUM_X_UNIT` = 0.000000053e-13
- float `pycodata.MUON_COMPTON_WAVELENGTH` = 1.173444110e-14
- float `pycodata.U_MUON_COMPTON_WAVELENGTH` = 0.000000026e-14

- float `pycodata.MUON_ELECTRON_MASS_RATIO` = 206.7682830e0
- float `pycodata.U_MUON_ELECTRON_MASS_RATIO` = 0.0000046e0
- float `pycodata.MUON_G_FACTOR` = -2.0023318418e0
- float `pycodata.U_MUON_G_FACTOR` = 0.0000000013e0
- float `pycodata.MUON_MAG_MOM` = -4.49044830e-26
- float `pycodata.U_MUON_MAG_MOM` = 0.00000010e-26
- float `pycodata.MUON_MAG_MOM_ANOMALY` = 1.16592089e-3
- float `pycodata.U_MUON_MAG_MOM_ANOMALY` = 0.00000063e-3
- float `pycodata.MUON_MAG_MOM_TO_BOHR_MAGNETON_RATIO` = -4.84197047e-3
- float `pycodata.U_MUON_MAG_MOM_TO_BOHR_MAGNETON_RATIO` = 0.00000011e-3
- float `pycodata.MUON_MAG_MOM_TO_NUCLEAR_MAGNETON_RATIO` = -8.89059703e0
- float `pycodata.U_MUON_MAG_MOM_TO_NUCLEAR_MAGNETON_RATIO` = 0.00000020e0
- float `pycodata.MUON_MASS` = 1.883531627e-28
- float `pycodata.U_MUON_MASS` = 0.000000042e-28
- float `pycodata.MUON_MASS_ENERGY_EQUIVALENT` = 1.692833804e-11
- float `pycodata.U_MUON_MASS_ENERGY_EQUIVALENT` = 0.000000038e-11
- float `pycodata.MUON_MASS_ENERGY_EQUIVALENT_IN_MEV` = 105.6583755e0
- float `pycodata.U_MUON_MASS_ENERGY_EQUIVALENT_IN_MEV` = 0.0000023e0
- float `pycodata.MUON_MASS_IN_U` = 0.1134289259e0
- float `pycodata.U_MUON_MASS_IN_U` = 0.0000000025e0
- float `pycodata.MUON_MOLAR_MASS` = 1.134289259e-4
- float `pycodata.U_MUON_MOLAR_MASS` = 0.0000000025e-4
- float `pycodata.MUON_NEUTRON_MASS_RATIO` = 0.1124545170e0
- float `pycodata.U_MUON_NEUTRON_MASS_RATIO` = 0.0000000025e0
- float `pycodata.MUON_PROTON_MAG_MOM_RATIO` = -3.183345142e0
- float `pycodata.U_MUON_PROTON_MAG_MOM_RATIO` = 0.000000071e0
- float `pycodata.MUON_PROTON_MASS_RATIO` = 0.1126095264e0
- float `pycodata.U_MUON_PROTON_MASS_RATIO` = 0.0000000025e0
- float `pycodata.MUON_TAU_MASS_RATIO` = 5.94635e-2
- float `pycodata.U_MUON_TAU_MASS_RATIO` = 0.00040e-2
- float `pycodata.NATURAL_UNIT_OF_ACTION` = 1.054571817e-34
- float `pycodata.U_NATURAL_UNIT_OF_ACTION` = 0.0e0
- float `pycodata.NATURAL_UNIT_OF_ACTION_IN_EV_S` = 6.582119569e-16
- float `pycodata.U_NATURAL_UNIT_OF_ACTION_IN_EV_S` = 0.0e0
- float `pycodata.NATURAL_UNIT_OF_ENERGY` = 8.1871057769e-14
- float `pycodata.U_NATURAL_UNIT_OF_ENERGY` = 0.0000000025e-14
- float `pycodata.NATURAL_UNIT_OF_ENERGY_IN_MEV` = 0.51099895000e0
- float `pycodata.U_NATURAL_UNIT_OF_ENERGY_IN_MEV` = 0.00000000015e0
- float `pycodata.NATURAL_UNIT_OF_LENGTH` = 3.8615926796e-13
- float `pycodata.U_NATURAL_UNIT_OF_LENGTH` = 0.0000000012e-13
- float `pycodata.NATURAL_UNIT_OF_MASS` = 9.1093837015e-31
- float `pycodata.U_NATURAL_UNIT_OF_MASS` = 0.0000000028e-31
- float `pycodata.NATURAL_UNIT_OF_MOMENTUM` = 2.73092453075e-22
- float `pycodata.U_NATURAL_UNIT_OF_MOMENTUM` = 0.00000000082e-22
- float `pycodata.NATURAL_UNIT_OF_MOMENTUM_IN_MEV_C` = 0.51099895000e0
- float `pycodata.U_NATURAL_UNIT_OF_MOMENTUM_IN_MEV_C` = 0.00000000015e0
- float `pycodata.NATURAL_UNIT_OF_TIME` = 1.28808866819e-21
- float `pycodata.U_NATURAL_UNIT_OF_TIME` = 0.00000000039e-21
- float `pycodata.NATURAL_UNIT_OF_VELOCITY` = 299792458.0e0
- float `pycodata.U_NATURAL_UNIT_OF_VELOCITY` = 0.0e0
- float `pycodata.NEUTRON_COMPTON_WAVELENGTH` = 1.31959090581e-15
- float `pycodata.U_NEUTRON_COMPTON_WAVELENGTH` = 0.00000000075e-15
- float `pycodata.NEUTRON_ELECTRON_MAG_MOM_RATIO` = 1.04066882e-3
- float `pycodata.U_NEUTRON_ELECTRON_MAG_MOM_RATIO` = 0.00000025e-3
- float `pycodata.NEUTRON_ELECTRON_MASS_RATIO` = 1838.68366173e0

- float `pycodata.U_NEUTRON_ELECTRON_MASS_RATIO` = 0.00000089e0
- float `pycodata.NEUTRON_G_FACTOR` = -3.82608545e0
- float `pycodata.U_NEUTRON_G_FACTOR` = 0.00000090e0
- float `pycodata.NEUTRON_GYROMAG_RATIO` = 1.83247171e8
- float `pycodata.U_NEUTRON_GYROMAG_RATIO` = 0.00000043e8
- float `pycodata.NEUTRON_GYROMAG_RATIO_IN_MHZ_T` = 29.1646931e0
- float `pycodata.U_NEUTRON_GYROMAG_RATIO_IN_MHZ_T` = 0.0000069e0
- float `pycodata.NEUTRON_MAG_MOM` = -9.6623651e-27
- float `pycodata.U_NEUTRON_MAG_MOM` = 0.0000023e-27
- float `pycodata.NEUTRON_MAG_MOM_TO_BOHR_MAGNETON_RATIO` = -1.04187563e-3
- float `pycodata.U_NEUTRON_MAG_MOM_TO_BOHR_MAGNETON_RATIO` = 0.00000025e-3
- float `pycodata.NEUTRON_MAG_MOM_TO_NUCLEAR_MAGNETON_RATIO` = -1.91304273e0
- float `pycodata.U_NEUTRON_MAG_MOM_TO_NUCLEAR_MAGNETON_RATIO` = 0.00000045e0
- float `pycodata.NEUTRON_MASS` = 1.67492749804e-27
- float `pycodata.U_NEUTRON_MASS` = 0.00000000095e-27
- float `pycodata.NEUTRON_MASS_ENERGY_EQUIVALENT` = 1.50534976287e-10
- float `pycodata.U_NEUTRON_MASS_ENERGY_EQUIVALENT` = 0.00000000086e-10
- float `pycodata.NEUTRON_MASS_ENERGY_EQUIVALENT_IN_MEV` = 939.56542052e0
- float `pycodata.U_NEUTRON_MASS_ENERGY_EQUIVALENT_IN_MEV` = 0.00000054e0
- float `pycodata.NEUTRON_MASS_IN_U` = 1.00866491595e0
- float `pycodata.U_NEUTRON_MASS_IN_U` = 0.00000000049e0
- float `pycodata.NEUTRON_MOLAR_MASS` = 1.00866491560e-3
- float `pycodata.U_NEUTRON_MOLAR_MASS` = 0.00000000057e-3
- float `pycodata.NEUTRON_MUON_MASS_RATIO` = 8.89248406e0
- float `pycodata.U_NEUTRON_MUON_MASS_RATIO` = 0.00000020e0
- float `pycodata.NEUTRON_PROTON_MAG_MOM_RATIO` = -0.68497934e0
- float `pycodata.U_NEUTRON_PROTON_MAG_MOM_RATIO` = 0.00000016e0
- float `pycodata.NEUTRON_PROTON_MASS_DIFFERENCE` = 2.30557435e-30
- float `pycodata.U_NEUTRON_PROTON_MASS_DIFFERENCE` = 0.00000082e-30
- float `pycodata.NEUTRON_PROTON_MASS_DIFFERENCE_ENERGY_EQUIVALENT` = 2.07214689e-13
- float `pycodata.U_NEUTRON_PROTON_MASS_DIFFERENCE_ENERGY_EQUIVALENT` = 0.00000074e-13
- float `pycodata.NEUTRON_PROTON_MASS_DIFFERENCE_ENERGY_EQUIVALENT_IN_MEV` = 1.↵  
29333236e0
- float `pycodata.U_NEUTRON_PROTON_MASS_DIFFERENCE_ENERGY_EQUIVALENT_IN_MEV` = 0.↵  
00000046e0
- float `pycodata.NEUTRON_PROTON_MASS_DIFFERENCE_IN_U` = 1.38844933e-3
- float `pycodata.U_NEUTRON_PROTON_MASS_DIFFERENCE_IN_U` = 0.00000049e-3
- float `pycodata.NEUTRON_PROTON_MASS_RATIO` = 1.00137841931e0
- float `pycodata.U_NEUTRON_PROTON_MASS_RATIO` = 0.00000000049e0
- float `pycodata.NEUTRON_RELATIVE_ATOMIC_MASS` = 1.00866491595e0
- float `pycodata.U_NEUTRON_RELATIVE_ATOMIC_MASS` = 0.00000000049e0
- float `pycodata.NEUTRON_TAU_MASS_RATIO` = 0.528779e0
- float `pycodata.U_NEUTRON_TAU_MASS_RATIO` = 0.000036e0
- float `pycodata.NEUTRON_TO_SHIELDED_PROTON_MAG_MOM_RATIO` = -0.68499694e0
- float `pycodata.U_NEUTRON_TO_SHIELDED_PROTON_MAG_MOM_RATIO` = 0.00000016e0
- float `pycodata.NEWTONIAN_CONSTANT_OF_GRAVITATION` = 6.67430e-11
- float `pycodata.U_NEWTONIAN_CONSTANT_OF_GRAVITATION` = 0.00015e-11
- float `pycodata.NEWTONIAN_CONSTANT_OF_GRAVITATION_OVER_H_BAR_C` = 6.70883e-39
- float `pycodata.U_NEWTONIAN_CONSTANT_OF_GRAVITATION_OVER_H_BAR_C` = 0.00015e-39
- float `pycodata.NUCLEAR_MAGNETON` = 5.0507837461e-27
- float `pycodata.U_NUCLEAR_MAGNETON` = 0.0000000015e-27
- float `pycodata.NUCLEAR_MAGNETON_IN_EV_T` = 3.15245125844e-8
- float `pycodata.U_NUCLEAR_MAGNETON_IN_EV_T` = 0.00000000096e-8
- float `pycodata.NUCLEAR_MAGNETON_IN_INVERSE_METER_PER_TESLA` = 2.54262341353e-2
- float `pycodata.U_NUCLEAR_MAGNETON_IN_INVERSE_METER_PER_TESLA` = 0.00000000078e-2

- float [pycodata.NUCLEAR\\_MAGNETON\\_IN\\_K\\_T](#) = 3.6582677756e-4
- float [pycodata.U\\_NUCLEAR\\_MAGNETON\\_IN\\_K\\_T](#) = 0.0000000011e-4
- float [pycodata.NUCLEAR\\_MAGNETON\\_IN\\_MHZ\\_T](#) = 7.6225932291e0
- float [pycodata.U\\_NUCLEAR\\_MAGNETON\\_IN\\_MHZ\\_T](#) = 0.0000000023e0
- float [pycodata.PLANCK\\_CONSTANT](#) = 6.62607015e-34
- float [pycodata.U\\_PLANCK\\_CONSTANT](#) = 0.0e0
- float [pycodata.PLANCK\\_CONSTANT\\_IN\\_EV\\_HZ](#) = 4.135667696e-15
- float [pycodata.U\\_PLANCK\\_CONSTANT\\_IN\\_EV\\_HZ](#) = 0.0e0
- float [pycodata.PLANCK\\_LENGTH](#) = 1.616255e-35
- float [pycodata.U\\_PLANCK\\_LENGTH](#) = 0.000018e-35
- float [pycodata.PLANCK\\_MASS](#) = 2.176434e-8
- float [pycodata.U\\_PLANCK\\_MASS](#) = 0.000024e-8
- float [pycodata.PLANCK\\_MASS\\_ENERGY\\_EQUIVALENT\\_IN\\_GEV](#) = 1.220890e19
- float [pycodata.U\\_PLANCK\\_MASS\\_ENERGY\\_EQUIVALENT\\_IN\\_GEV](#) = 0.000014e19
- float [pycodata.PLANCK\\_TEMPERATURE](#) = 1.416784e32
- float [pycodata.U\\_PLANCK\\_TEMPERATURE](#) = 0.000016e32
- float [pycodata.PLANCK\\_TIME](#) = 5.391247e-44
- float [pycodata.U\\_PLANCK\\_TIME](#) = 0.000060e-44
- float [pycodata.PROTON\\_CHARGE\\_TO\\_MASS\\_QUOTIENT](#) = 9.5788331560e7
- float [pycodata.U\\_PROTON\\_CHARGE\\_TO\\_MASS\\_QUOTIENT](#) = 0.0000000029e7
- float [pycodata.PROTON\\_COMPTON\\_WAVELENGTH](#) = 1.32140985539e-15
- float [pycodata.U\\_PROTON\\_COMPTON\\_WAVELENGTH](#) = 0.00000000040e-15
- float [pycodata.PROTON\\_ELECTRON\\_MASS\\_RATIO](#) = 1836.15267343e0
- float [pycodata.U\\_PROTON\\_ELECTRON\\_MASS\\_RATIO](#) = 0.00000011e0
- float [pycodata.PROTON\\_G\\_FACTOR](#) = 5.5856946893e0
- float [pycodata.U\\_PROTON\\_G\\_FACTOR](#) = 0.0000000016e0
- float [pycodata.PROTON\\_GYROMAG\\_RATIO](#) = 2.6752218744e8
- float [pycodata.U\\_PROTON\\_GYROMAG\\_RATIO](#) = 0.0000000011e8
- float [pycodata.PROTON\\_GYROMAG\\_RATIO\\_IN\\_MHZ\\_T](#) = 42.577478518e0
- float [pycodata.U\\_PROTON\\_GYROMAG\\_RATIO\\_IN\\_MHZ\\_T](#) = 0.000000018e0
- float [pycodata.PROTON\\_MAG\\_MOM](#) = 1.41060679736e-26
- float [pycodata.U\\_PROTON\\_MAG\\_MOM](#) = 0.00000000060e-26
- float [pycodata.PROTON\\_MAG\\_MOM\\_TO\\_BOHR\\_MAGNETON\\_RATIO](#) = 1.52103220230e-3
- float [pycodata.U\\_PROTON\\_MAG\\_MOM\\_TO\\_BOHR\\_MAGNETON\\_RATIO](#) = 0.00000000046e-3
- float [pycodata.PROTON\\_MAG\\_MOM\\_TO\\_NUCLEAR\\_MAGNETON\\_RATIO](#) = 2.79284734463e0
- float [pycodata.U\\_PROTON\\_MAG\\_MOM\\_TO\\_NUCLEAR\\_MAGNETON\\_RATIO](#) = 0.00000000082e0
- float [pycodata.PROTON\\_MAG\\_SHIELDING\\_CORRECTION](#) = 2.5689e-5
- float [pycodata.U\\_PROTON\\_MAG\\_SHIELDING\\_CORRECTION](#) = 0.0011e-5
- float [pycodata.PROTON\\_MASS](#) = 1.67262192369e-27
- float [pycodata.U\\_PROTON\\_MASS](#) = 0.00000000051e-27
- float [pycodata.PROTON\\_MASS\\_ENERGY\\_EQUIVALENT](#) = 1.50327761598e-10
- float [pycodata.U\\_PROTON\\_MASS\\_ENERGY\\_EQUIVALENT](#) = 0.00000000046e-10
- float [pycodata.PROTON\\_MASS\\_ENERGY\\_EQUIVALENT\\_IN\\_MEV](#) = 938.27208816e0
- float [pycodata.U\\_PROTON\\_MASS\\_ENERGY\\_EQUIVALENT\\_IN\\_MEV](#) = 0.00000029e0
- float [pycodata.PROTON\\_MASS\\_IN\\_U](#) = 1.007276466621e0
- float [pycodata.U\\_PROTON\\_MASS\\_IN\\_U](#) = 0.000000000053e0
- float [pycodata.PROTON\\_MOLAR\\_MASS](#) = 1.00727646627e-3
- float [pycodata.U\\_PROTON\\_MOLAR\\_MASS](#) = 0.00000000031e-3
- float [pycodata.PROTON\\_MUON\\_MASS\\_RATIO](#) = 8.88024337e0
- float [pycodata.U\\_PROTON\\_MUON\\_MASS\\_RATIO](#) = 0.00000020e0
- float [pycodata.PROTON\\_NEUTRON\\_MAG\\_MOM\\_RATIO](#) = -1.45989805e0
- float [pycodata.U\\_PROTON\\_NEUTRON\\_MAG\\_MOM\\_RATIO](#) = 0.00000034e0
- float [pycodata.PROTON\\_NEUTRON\\_MASS\\_RATIO](#) = 0.99862347812e0
- float [pycodata.U\\_PROTON\\_NEUTRON\\_MASS\\_RATIO](#) = 0.00000000049e0
- float [pycodata.PROTON\\_RELATIVE\\_ATOMIC\\_MASS](#) = 1.007276466621e0

- float `pycodata.U_PROTON_RELATIVE_ATOMIC_MASS` = 0.000000000053e0
- float `pycodata.PROTON_RMS_CHARGE_RADIUS` = 8.414e-16
- float `pycodata.U_PROTON_RMS_CHARGE_RADIUS` = 0.019e-16
- float `pycodata.PROTON_TAU_MASS_RATIO` = 0.528051e0
- float `pycodata.U_PROTON_TAU_MASS_RATIO` = 0.000036e0
- float `pycodata.QUANTUM_OF_CIRCULATION` = 3.6369475516e-4
- float `pycodata.U_QUANTUM_OF_CIRCULATION` = 0.0000000011e-4
- float `pycodata.QUANTUM_OF_CIRCULATION_TIMES_2` = 7.2738951032e-4
- float `pycodata.U_QUANTUM_OF_CIRCULATION_TIMES_2` = 0.0000000022e-4
- float `pycodata.REDUCED_COMPTON_WAVELENGTH` = 3.8615926796e-13
- float `pycodata.U_REDUCED_COMPTON_WAVELENGTH` = 0.0000000012e-13
- float `pycodata.REDUCED_MUON_COMPTON_WAVELENGTH` = 1.867594306e-15
- float `pycodata.U_REDUCED_MUON_COMPTON_WAVELENGTH` = 0.000000042e-15
- float `pycodata.REDUCED_NEUTRON_COMPTON_WAVELENGTH` = 2.1001941552e-16
- float `pycodata.U_REDUCED_NEUTRON_COMPTON_WAVELENGTH` = 0.0000000012e-16
- float `pycodata.REDUCED_PLANCK_CONSTANT` = 1.054571817e-34
- float `pycodata.U_REDUCED_PLANCK_CONSTANT` = 0.0e0
- float `pycodata.REDUCED_PLANCK_CONSTANT_IN_EV_S` = 6.582119569e-16
- float `pycodata.U_REDUCED_PLANCK_CONSTANT_IN_EV_S` = 0.0e0
- float `pycodata.REDUCED_PLANCK_CONSTANT_TIMES_C_IN_MEV_FM` = 197.3269804e0
- float `pycodata.U_REDUCED_PLANCK_CONSTANT_TIMES_C_IN_MEV_FM` = 0.0e0
- float `pycodata.REDUCED_PROTON_COMPTON_WAVELENGTH` = 2.10308910336e-16
- float `pycodata.U_REDUCED_PROTON_COMPTON_WAVELENGTH` = 0.00000000064e-16
- float `pycodata.REDUCED_TAU_COMPTON_WAVELENGTH` = 1.110538e-16
- float `pycodata.U_REDUCED_TAU_COMPTON_WAVELENGTH` = 0.000075e-16
- float `pycodata.RYDBERG_CONSTANT` = 10973731.568160e0
- float `pycodata.U_RYDBERG_CONSTANT` = 0.000021e0
- float `pycodata.RYDBERG_CONSTANT_TIMES_C_IN_HZ` = 3.2898419602508e15
- float `pycodata.U_RYDBERG_CONSTANT_TIMES_C_IN_HZ` = 0.0000000000064e15
- float `pycodata.RYDBERG_CONSTANT_TIMES_HC_IN_EV` = 13.605693122994e0
- float `pycodata.U_RYDBERG_CONSTANT_TIMES_HC_IN_EV` = 0.000000000026e0
- float `pycodata.RYDBERG_CONSTANT_TIMES_HC_IN_J` = 2.1798723611035e-18
- float `pycodata.U_RYDBERG_CONSTANT_TIMES_HC_IN_J` = 0.0000000000042e-18
- float `pycodata.SACKUR_TETRODE_CONSTANT__1_K__100_KPA` = -1.15170753706e0
- float `pycodata.U_SACKUR_TETRODE_CONSTANT__1_K__100_KPA` = 0.00000000045e0
- float `pycodata.SACKUR_TETRODE_CONSTANT__1_K__101_325_KPA` = -1.16487052358e0
- float `pycodata.U_SACKUR_TETRODE_CONSTANT__1_K__101_325_KPA` = 0.00000000045e0
- float `pycodata.SECOND_RADIATION_CONSTANT` = 1.438776877e-2
- float `pycodata.U_SECOND_RADIATION_CONSTANT` = 0.0e0
- float `pycodata.SHIELDED_HELION_GYROMAG__RATIO` = 2.037894569e8
- float `pycodata.U_SHIELDED_HELION_GYROMAG__RATIO` = 0.000000024e8
- float `pycodata.SHIELDED_HELION_GYROMAG__RATIO_IN_MHZ_T` = 32.43409942e0
- float `pycodata.U_SHIELDED_HELION_GYROMAG__RATIO_IN_MHZ_T` = 0.00000038e0
- float `pycodata.SHIELDED_HELION_MAG__MOM` = -1.074553090e-26
- float `pycodata.U_SHIELDED_HELION_MAG__MOM` = 0.000000013e-26
- float `pycodata.SHIELDED_HELION_MAG__MOM__TO_BOHR_MAGNETON_RATIO` = -1.158671471e-3
- float `pycodata.U_SHIELDED_HELION_MAG__MOM__TO_BOHR_MAGNETON_RATIO` = 0.000000014e-3
- float `pycodata.SHIELDED_HELION_MAG__MOM__TO_NUCLEAR_MAGNETON_RATIO` = -2.127497719e0
- float `pycodata.U_SHIELDED_HELION_MAG__MOM__TO_NUCLEAR_MAGNETON_RATIO` = 0.000000025e0
- float `pycodata.SHIELDED_HELION_TO_PROTON_MAG__MOM__RATIO` = -0.7617665618e0
- float `pycodata.U_SHIELDED_HELION_TO_PROTON_MAG__MOM__RATIO` = 0.0000000089e0
- float `pycodata.SHIELDED_HELION_TO_SHIELDED_PROTON_MAG__MOM__RATIO` = -0.7617861313e0
- float `pycodata.U_SHIELDED_HELION_TO_SHIELDED_PROTON_MAG__MOM__RATIO` = 0.0000000033e0
- float `pycodata.SHIELDED_PROTON_GYROMAG__RATIO` = 2.675153151e8



- float `pycodata.U_SHIELDED_PROTON_GYROMAG_RATIO` = 0.000000029e8
- float `pycodata.SHIELDED_PROTON_GYROMAG_RATIO_IN_MHZ_T` = 42.57638474e0
- float `pycodata.U_SHIELDED_PROTON_GYROMAG_RATIO_IN_MHZ_T` = 0.00000046e0
- float `pycodata.SHIELDED_PROTON_MAG_MOM` = 1.410570560e-26
- float `pycodata.U_SHIELDED_PROTON_MAG_MOM` = 0.000000015e-26
- float `pycodata.SHIELDED_PROTON_MAG_MOM_TO_BOHR_MAGNETON_RATIO` = 1.520993128e-3
- float `pycodata.U_SHIELDED_PROTON_MAG_MOM_TO_BOHR_MAGNETON_RATIO` = 0.000000017e-3
- float `pycodata.SHIELDED_PROTON_MAG_MOM_TO_NUCLEAR_MAGNETON_RATIO` = 2.792775599e0
- float `pycodata.U_SHIELDED_PROTON_MAG_MOM_TO_NUCLEAR_MAGNETON_RATIO` = 0.000000030e0
- float `pycodata.SHIELDING_DIFFERENCE_OF_D_AND_P_IN_HD` = 2.0200e-8
- float `pycodata.U_SHIELDING_DIFFERENCE_OF_D_AND_P_IN_HD` = 0.0020e-8
- float `pycodata.SHIELDING_DIFFERENCE_OF_T_AND_P_IN_HT` = 2.4140e-8
- float `pycodata.U_SHIELDING_DIFFERENCE_OF_T_AND_P_IN_HT` = 0.0020e-8
- float `pycodata.SPEED_OF_LIGHT_IN_VACUUM` = 299792458.0e0
- float `pycodata.U_SPEED_OF_LIGHT_IN_VACUUM` = 0.0e0
- float `pycodata.STANDARD_ACCELERATION_OF_GRAVITY` = 9.80665e0
- float `pycodata.U_STANDARD_ACCELERATION_OF_GRAVITY` = 0.0e0
- float `pycodata.STANDARD_ATMOSPHERE` = 101325.0e0
- float `pycodata.U_STANDARD_ATMOSPHERE` = 0.0e0
- float `pycodata.STANDARD_STATE_PRESSURE` = 100000.0e0
- float `pycodata.U_STANDARD_STATE_PRESSURE` = 0.0e0
- float `pycodata.STEFAN_BOLTZMANN_CONSTANT` = 5.670374419e-8
- float `pycodata.U_STEFAN_BOLTZMANN_CONSTANT` = 0.0e0
- float `pycodata.TAU_COMPTON_WAVELENGTH` = 6.97771e-16
- float `pycodata.U_TAU_COMPTON_WAVELENGTH` = 0.00047e-16
- float `pycodata.TAU_ELECTRON_MASS_RATIO` = 3477.23e0
- float `pycodata.U_TAU_ELECTRON_MASS_RATIO` = 0.23e0
- float `pycodata.TAU_ENERGY_EQUIVALENT` = 1776.86e0
- float `pycodata.U_TAU_ENERGY_EQUIVALENT` = 0.12e0
- float `pycodata.TAU_MASS` = 3.16754e-27
- float `pycodata.U_TAU_MASS` = 0.00021e-27
- float `pycodata.TAU_MASS_ENERGY_EQUIVALENT` = 2.84684e-10
- float `pycodata.U_TAU_MASS_ENERGY_EQUIVALENT` = 0.00019e-10
- float `pycodata.TAU_MASS_IN_U` = 1.90754e0
- float `pycodata.U_TAU_MASS_IN_U` = 0.00013e0
- float `pycodata.TAU_MOLAR_MASS` = 1.90754e-3
- float `pycodata.U_TAU_MOLAR_MASS` = 0.00013e-3
- float `pycodata.TAU_MUON_MASS_RATIO` = 16.8170e0
- float `pycodata.U_TAU_MUON_MASS_RATIO` = 0.0011e0
- float `pycodata.TAU_NEUTRON_MASS_RATIO` = 1.89115e0
- float `pycodata.U_TAU_NEUTRON_MASS_RATIO` = 0.00013e0
- float `pycodata.TAU_PROTON_MASS_RATIO` = 1.89376e0
- float `pycodata.U_TAU_PROTON_MASS_RATIO` = 0.00013e0
- float `pycodata.THOMSON_CROSS_SECTION` = 6.6524587321e-29
- float `pycodata.U_THOMSON_CROSS_SECTION` = 0.0000000060e-29
- float `pycodata.TRITON_ELECTRON_MASS_RATIO` = 5496.92153573e0
- float `pycodata.U_TRITON_ELECTRON_MASS_RATIO` = 0.00000027e0
- float `pycodata.TRITON_G_FACTOR` = 5.957924931e0
- float `pycodata.U_TRITON_G_FACTOR` = 0.000000012e0
- float `pycodata.TRITON_MAG_MOM` = 1.5046095202e-26
- float `pycodata.U_TRITON_MAG_MOM` = 0.0000000030e-26
- float `pycodata.TRITON_MAG_MOM_TO_BOHR_MAGNETON_RATIO` = 1.6223936651e-3
- float `pycodata.U_TRITON_MAG_MOM_TO_BOHR_MAGNETON_RATIO` = 0.0000000032e-3
- float `pycodata.TRITON_MAG_MOM_TO_NUCLEAR_MAGNETON_RATIO` = 2.9789624656e0

- float `pycodata.U_TRITON_MAG__MOM__TO_NUCLEAR_MAGNETON_RATIO` = 0.0000000059e0
- float `pycodata.TRITON_MASS` = 5.0073567446e-27
- float `pycodata.U_TRITON_MASS` = 0.0000000015e-27
- float `pycodata.TRITON_MASS_ENERGY_EQUIVALENT` = 4.5003878060e-10
- float `pycodata.U_TRITON_MASS_ENERGY_EQUIVALENT` = 0.0000000014e-10
- float `pycodata.TRITON_MASS_ENERGY_EQUIVALENT_IN_MEV` = 2808.92113298e0
- float `pycodata.U_TRITON_MASS_ENERGY_EQUIVALENT_IN_MEV` = 0.00000085e0
- float `pycodata.TRITON_MASS_IN_U` = 3.01550071621e0
- float `pycodata.U_TRITON_MASS_IN_U` = 0.0000000012e0
- float `pycodata.TRITON_MOLAR_MASS` = 3.01550071517e-3
- float `pycodata.U_TRITON_MOLAR_MASS` = 0.00000000092e-3
- float `pycodata.TRITON_PROTON_MASS_RATIO` = 2.99371703414e0
- float `pycodata.U_TRITON_PROTON_MASS_RATIO` = 0.0000000015e0
- float `pycodata.TRITON_RELATIVE_ATOMIC_MASS` = 3.01550071621e0
- float `pycodata.U_TRITON_RELATIVE_ATOMIC_MASS` = 0.0000000012e0
- float `pycodata.TRITON_TO_PROTON_MAG__MOM__RATIO` = 1.0666399191e0
- float `pycodata.U_TRITON_TO_PROTON_MAG__MOM__RATIO` = 0.0000000021e0
- float `pycodata.UNIFIED_ATOMIC_MASS_UNIT` = 1.66053906660e-27
- float `pycodata.U_UNIFIED_ATOMIC_MASS_UNIT` = 0.00000000050e-27
- float `pycodata.VACUUM_ELECTRIC_PERMITTIVITY` = 8.8541878128e-12
- float `pycodata.U_VACUUM_ELECTRIC_PERMITTIVITY` = 0.0000000013e-12
- float `pycodata.VACUUM_MAG__PERMEABILITY` = 1.25663706212e-6
- float `pycodata.U_VACUUM_MAG__PERMEABILITY` = 0.00000000019e-6
- float `pycodata.VON_KLITZING_CONSTANT` = 25812.80745e0
- float `pycodata.U_VON_KLITZING_CONSTANT` = 0.0e0
- float `pycodata.WEAK_MIXING_ANGLE` = 0.22290e0
- float `pycodata.U_WEAK_MIXING_ANGLE` = 0.00030e0
- float `pycodata.WIEN_FREQUENCY_DISPLACEMENT_LAW_CONSTANT` = 5.878925757e10
- float `pycodata.U_WIEN_FREQUENCY_DISPLACEMENT_LAW_CONSTANT` = 0.0e0
- float `pycodata.WIEN_WAVELENGTH_DISPLACEMENT_LAW_CONSTANT` = 2.897771955e-3
- float `pycodata.U_WIEN_WAVELENGTH_DISPLACEMENT_LAW_CONSTANT` = 0.0e0
- float `pycodata.W_TO_Z_MASS_RATIO` = 0.88153e0
- float `pycodata.U_W_TO_Z_MASS_RATIO` = 0.00017e0

## 17.21 pycodata.py

[Go to the documentation of this file.](#)

```
00001 """Codata module - autogenerated"""
00002
00003 ALPHA_PARTICLE_ELECTRON_MASS_RATIO=7294.29954142e0 #
00004 U_ALPHA_PARTICLE_ELECTRON_MASS_RATIO=0.00000024e0 #
00005
00006 ALPHA_PARTICLE_MASS=6.6446573357e-27 # kg
00007 U_ALPHA_PARTICLE_MASS=0.0000000020e-27 # kg
00008
00009 ALPHA_PARTICLE_MASS_ENERGY_EQUIVALENT=5.9719201914e-10 # J
00010 U_ALPHA_PARTICLE_MASS_ENERGY_EQUIVALENT=0.0000000018e-10 # J
00011
00012 ALPHA_PARTICLE_MASS_ENERGY_EQUIVALENT_IN_MEV=3727.3794066e0 # MeV
00013 U_ALPHA_PARTICLE_MASS_ENERGY_EQUIVALENT_IN_MEV=0.0000011e0 # MeV
00014
00015 ALPHA_PARTICLE_MASS_IN_U=4.001506179127e0 # u
00016 U_ALPHA_PARTICLE_MASS_IN_U=0.00000000063e0 # u
00017
00018 ALPHA_PARTICLE_MOLAR_MASS=4.0015061777e-3 # kg mol^-1
00019 U_ALPHA_PARTICLE_MOLAR_MASS=0.0000000012e-3 # kg mol^-1
00020
00021 ALPHA_PARTICLE_PROTON_MASS_RATIO=3.97259969009e0 #
00022 U_ALPHA_PARTICLE_PROTON_MASS_RATIO=0.0000000022e0 #
00023
00024 ALPHA_PARTICLE_RELATIVE_ATOMIC_MASS=4.001506179127e0 #
00025 U_ALPHA_PARTICLE_RELATIVE_ATOMIC_MASS=0.00000000063e0 #
```

```
00026
00027 ANGSTROM_STAR=1.00001495e-10 # m
00028 U_ANGSTROM_STAR=0.00000090e-10 # m
00029
00030 ATOMIC_MASS_CONSTANT=1.66053906660e-27 # kg
00031 U_ATOMIC_MASS_CONSTANT=0.0000000050e-27 # kg
00032
00033 ATOMIC_MASS_CONSTANT_ENERGY_EQUIVALENT=1.49241808560e-10 # J
00034 U_ATOMIC_MASS_CONSTANT_ENERGY_EQUIVALENT=0.0000000045e-10 # J
00035
00036 ATOMIC_MASS_CONSTANT_ENERGY_EQUIVALENT_IN_MEV=931.49410242e0 # MeV
00037 U_ATOMIC_MASS_CONSTANT_ENERGY_EQUIVALENT_IN_MEV=0.00000028e0 # MeV
00038
00039 ATOMIC_MASS_UNIT_ELECTRON_VOLT_RELATIONSHIP=9.3149410242e8 # eV
00040 U_ATOMIC_MASS_UNIT_ELECTRON_VOLT_RELATIONSHIP=0.000000028e8 # eV
00041
00042 ATOMIC_MASS_UNIT_HARTREE_RELATIONSHIP=3.4231776874e7 # E_h
00043 U_ATOMIC_MASS_UNIT_HARTREE_RELATIONSHIP=0.000000010e7 # E_h
00044
00045 ATOMIC_MASS_UNIT_HERTZ_RELATIONSHIP=2.25234271871e23 # Hz
00046 U_ATOMIC_MASS_UNIT_HERTZ_RELATIONSHIP=0.0000000068e23 # Hz
00047
00048 ATOMIC_MASS_UNIT_INVERSE_METER_RELATIONSHIP=7.5130066104e14 # m^-1
00049 U_ATOMIC_MASS_UNIT_INVERSE_METER_RELATIONSHIP=0.000000023e14 # m^-1
00050
00051 ATOMIC_MASS_UNIT_JOULE_RELATIONSHIP=1.49241808560e-10 # J
00052 U_ATOMIC_MASS_UNIT_JOULE_RELATIONSHIP=0.0000000045e-10 # J
00053
00054 ATOMIC_MASS_UNIT_KELVIN_RELATIONSHIP=1.08095401916e13 # K
00055 U_ATOMIC_MASS_UNIT_KELVIN_RELATIONSHIP=0.0000000033e13 # K
00056
00057 ATOMIC_MASS_UNIT_KILOGRAM_RELATIONSHIP=1.66053906660e-27 # kg
00058 U_ATOMIC_MASS_UNIT_KILOGRAM_RELATIONSHIP=0.0000000050e-27 # kg
00059
00060 ATOMIC_UNIT_OF_1ST_HYPERPOLARIZABILITY=3.2063613061e-53 # C^3 m^3 J^-2
00061 U_ATOMIC_UNIT_OF_1ST_HYPERPOLARIZABILITY=0.0000000015e-53 # C^3 m^3 J^-2
00062
00063 ATOMIC_UNIT_OF_2ND_HYPERPOLARIZABILITY=6.2353799905e-65 # C^4 m^4 J^-3
00064 U_ATOMIC_UNIT_OF_2ND_HYPERPOLARIZABILITY=0.0000000038e-65 # C^4 m^4 J^-3
00065
00066 ATOMIC_UNIT_OF_ACTION=1.054571817e-34 # J s
00067 U_ATOMIC_UNIT_OF_ACTION=0.0e0 # J s
00068
00069 ATOMIC_UNIT_OF_CHARGE=1.602176634e-19 # C
00070 U_ATOMIC_UNIT_OF_CHARGE=0.0e0 # C
00071
00072 ATOMIC_UNIT_OF_CHARGE_DENSITY=1.08120238457e12 # C m^-3
00073 U_ATOMIC_UNIT_OF_CHARGE_DENSITY=0.0000000049e12 # C m^-3
00074
00075 ATOMIC_UNIT_OF_CURRENT=6.623618237510e-3 # A
00076 U_ATOMIC_UNIT_OF_CURRENT=0.00000000013e-3 # A
00077
00078 ATOMIC_UNIT_OF_ELECTRIC_DIPOLE_MOM=8.4783536255e-30 # C m
00079 U_ATOMIC_UNIT_OF_ELECTRIC_DIPOLE_MOM=0.0000000013e-30 # C m
00080
00081 ATOMIC_UNIT_OF_ELECTRIC_FIELD=5.14220674763e11 # V m^-1
00082 U_ATOMIC_UNIT_OF_ELECTRIC_FIELD=0.0000000078e11 # V m^-1
00083
00084 ATOMIC_UNIT_OF_ELECTRIC_FIELD_GRADIENT=9.7173624292e21 # V m^-2
00085 U_ATOMIC_UNIT_OF_ELECTRIC_FIELD_GRADIENT=0.0000000029e21 # V m^-2
00086
00087 ATOMIC_UNIT_OF_ELECTRIC_POLARIZABILITY=1.64877727436e-41 # C^2 m^2 J^-1
00088 U_ATOMIC_UNIT_OF_ELECTRIC_POLARIZABILITY=0.0000000050e-41 # C^2 m^2 J^-1
00089
00090 ATOMIC_UNIT_OF_ELECTRIC_POTENTIAL=27.211386245988e0 # V
00091 U_ATOMIC_UNIT_OF_ELECTRIC_POTENTIAL=0.00000000053e0 # V
00092
00093 ATOMIC_UNIT_OF_ELECTRIC_QUADRUPOLE_MOM=4.4865515246e-40 # C m^2
00094 U_ATOMIC_UNIT_OF_ELECTRIC_QUADRUPOLE_MOM=0.0000000014e-40 # C m^2
00095
00096 ATOMIC_UNIT_OF_ENERGY=4.3597447222071e-18 # J
00097 U_ATOMIC_UNIT_OF_ENERGY=0.000000000085e-18 # J
00098
00099 ATOMIC_UNIT_OF_FORCE=8.2387234983e-8 # N
00100 U_ATOMIC_UNIT_OF_FORCE=0.0000000012e-8 # N
00101
00102 ATOMIC_UNIT_OF_LENGTH=5.29177210903e-11 # m
00103 U_ATOMIC_UNIT_OF_LENGTH=0.0000000080e-11 # m
00104
00105 ATOMIC_UNIT_OF_MAG_DIPOLE_MOM=1.85480201566e-23 # J T^-1
00106 U_ATOMIC_UNIT_OF_MAG_DIPOLE_MOM=0.0000000056e-23 # J T^-1
00107
00108 ATOMIC_UNIT_OF_MAG_FLUX_DENSITY=2.35051756758e5 # T
00109 U_ATOMIC_UNIT_OF_MAG_FLUX_DENSITY=0.0000000071e5 # T
00110
00111 ATOMIC_UNIT_OF_MAGNETIZABILITY=7.8910366008e-29 # J T^-2
00112 U_ATOMIC_UNIT_OF_MAGNETIZABILITY=0.0000000048e-29 # J T^-2
```



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00113
00114 ATOMIC_UNIT_OF_MASS=9.1093837015e-31 # kg
00115 U_ATOMIC_UNIT_OF_MASS=0.0000000028e-31 # kg
00116
00117 ATOMIC_UNIT_OF_MOMENTUM=1.99285191410e-24 # kg m s^-1
00118 U_ATOMIC_UNIT_OF_MOMENTUM=0.0000000030e-24 # kg m s^-1
00119
00120 ATOMIC_UNIT_OF_PERMITTIVITY=1.11265005545e-10 # F m^-1
00121 U_ATOMIC_UNIT_OF_PERMITTIVITY=0.0000000017e-10 # F m^-1
00122
00123 ATOMIC_UNIT_OF_TIME=2.4188843265857e-17 # s
00124 U_ATOMIC_UNIT_OF_TIME=0.000000000047e-17 # s
00125
00126 ATOMIC_UNIT_OF_VELOCITY=2.18769126364e6 # m s^-1
00127 U_ATOMIC_UNIT_OF_VELOCITY=0.0000000033e6 # m s^-1
00128
00129 AVOGADRO_CONSTANT=6.02214076e23 # mol^-1
00130 U_AVOGADRO_CONSTANT=0.0e0 # mol^-1
00131
00132 BOHR_MAGNETON=9.2740100783e-24 # J T^-1
00133 U_BOHR_MAGNETON=0.0000000028e-24 # J T^-1
00134
00135 BOHR_MAGNETON_IN_EV_T=5.7883818060e-5 # eV T^-1
00136 U_BOHR_MAGNETON_IN_EV_T=0.0000000017e-5 # eV T^-1
00137
00138 BOHR_MAGNETON_IN_HZ_T=1.39962449361e10 # Hz T^-1
00139 U_BOHR_MAGNETON_IN_HZ_T=0.00000000042e10 # Hz T^-1
00140
00141 BOHR_MAGNETON_IN_INVERSE_METER_PER_TESLA=46.686447783e0 # m^-1 T^-1
00142 U_BOHR_MAGNETON_IN_INVERSE_METER_PER_TESLA=0.000000014e0 # m^-1 T^-1
00143
00144 BOHR_MAGNETON_IN_K_T=0.67171381563e0 # K T^-1
00145 U_BOHR_MAGNETON_IN_K_T=0.00000000020e0 # K T^-1
00146
00147 BOHR_RADIUS=5.29177210903e-11 # m
00148 U_BOHR_RADIUS=0.00000000080e-11 # m
00149
00150 BOLTZMANN_CONSTANT=1.380649e-23 # J K^-1
00151 U_BOLTZMANN_CONSTANT=0.0e0 # J K^-1
00152
00153 BOLTZMANN_CONSTANT_IN_EV_K=8.617333262e-5 # eV K^-1
00154 U_BOLTZMANN_CONSTANT_IN_EV_K=0.0e0 # eV K^-1
00155
00156 BOLTZMANN_CONSTANT_IN_HZ_K=2.083661912e10 # Hz K^-1
00157 U_BOLTZMANN_CONSTANT_IN_HZ_K=0.0e0 # Hz K^-1
00158
00159 BOLTZMANN_CONSTANT_IN_INVERSE_METER_PER_KELVIN=69.50348004e0 # m^-1 K^-1
00160 U_BOLTZMANN_CONSTANT_IN_INVERSE_METER_PER_KELVIN=0.0e0 # m^-1 K^-1
00161
00162 CHARACTERISTIC_IMPEDANCE_OF_VACUUM=376.730313668e0 # ohm
00163 U_CHARACTERISTIC_IMPEDANCE_OF_VACUUM=0.000000057e0 # ohm
00164
00165 CLASSICAL_ELECTRON_RADIUS=2.8179403262e-15 # m
00166 U_CLASSICAL_ELECTRON_RADIUS=0.0000000013e-15 # m
00167
00168 COMPTON_WAVELENGTH=2.42631023867e-12 # m
00169 U_COMPTON_WAVELENGTH=0.00000000073e-12 # m
00170
00171 CONDUCTANCE_QUANTUM=7.748091729e-5 # S
00172 U_CONDUCTANCE_QUANTUM=0.0e0 # S
00173
00174 CONVENTIONAL_VALUE_OF_AMPERE_90=1.00000008887e0 # A
00175 U_CONVENTIONAL_VALUE_OF_AMPERE_90=0.0e0 # A
00176
00177 CONVENTIONAL_VALUE_OF_COULOMB_90=1.00000008887e0 # C
00178 U_CONVENTIONAL_VALUE_OF_COULOMB_90=0.0e0 # C
00179
00180 CONVENTIONAL_VALUE_OF_FARAD_90=0.99999998220e0 # F
00181 U_CONVENTIONAL_VALUE_OF_FARAD_90=0.0e0 # F
00182
00183 CONVENTIONAL_VALUE_OF_HENRY_90=1.00000001779e0 # H
00184 U_CONVENTIONAL_VALUE_OF_HENRY_90=0.0e0 # H
00185
00186 CONVENTIONAL_VALUE_OF_JOSEPHSON_CONSTANT=483597.9e9 # Hz V^-1
00187 U_CONVENTIONAL_VALUE_OF_JOSEPHSON_CONSTANT=0.0e0 # Hz V^-1
00188
00189 CONVENTIONAL_VALUE_OF_OHM_90=1.00000001779e0 # ohm
00190 U_CONVENTIONAL_VALUE_OF_OHM_90=0.0e0 # ohm
00191
00192 CONVENTIONAL_VALUE_OF_VOLT_90=1.00000010666e0 # V
00193 U_CONVENTIONAL_VALUE_OF_VOLT_90=0.0e0 # V
00194
00195 CONVENTIONAL_VALUE_OF_VON_KLITZING_CONSTANT=25812.807e0 # ohm
00196 U_CONVENTIONAL_VALUE_OF_VON_KLITZING_CONSTANT=0.0e0 # ohm
00197
00198 CONVENTIONAL_VALUE_OF_WATT_90=1.00000019553e0 # W
00199 U_CONVENTIONAL_VALUE_OF_WATT_90=0.0e0 # W

```

```
00200
00201 COPPER_X_UNIT=1.00207697e-13 # m
00202 U_COPPER_X_UNIT=0.00000028e-13 # m
00203
00204 DEUTERON_ELECTRON_MAG__MOM__RATIO=-4.664345551e-4 #
00205 U_DEUTERON_ELECTRON_MAG__MOM__RATIO=0.000000012e-4 #
00206
00207 DEUTERON_ELECTRON_MASS_RATIO=3670.48296788e0 #
00208 U_DEUTERON_ELECTRON_MASS_RATIO=0.00000013e0 #
00209
00210 DEUTERON_G_FACTOR=0.8574382338e0 #
00211 U_DEUTERON_G_FACTOR=0.000000022e0 #
00212
00213 DEUTERON_MAG__MOM=4.330735094e-27 # J T^-1
00214 U_DEUTERON_MAG__MOM=0.00000011e-27 # J T^-1
00215
00216 DEUTERON_MAG__MOM__TO_BOHR_MAGNETON_RATIO=4.669754570e-4 #
00217 U_DEUTERON_MAG__MOM__TO_BOHR_MAGNETON_RATIO=0.000000012e-4 #
00218
00219 DEUTERON_MAG__MOM__TO_NUCLEAR_MAGNETON_RATIO=0.8574382338e0 #
00220 U_DEUTERON_MAG__MOM__TO_NUCLEAR_MAGNETON_RATIO=0.000000022e0 #
00221
00222 DEUTERON_MASS=3.3435837724e-27 # kg
00223 U_DEUTERON_MASS=0.000000010e-27 # kg
00224
00225 DEUTERON_MASS_ENERGY_EQUIVALENT=3.00506323102e-10 # J
00226 U_DEUTERON_MASS_ENERGY_EQUIVALENT=0.00000000091e-10 # J
00227
00228 DEUTERON_MASS_ENERGY_EQUIVALENT_IN_MEV=1875.61294257e0 # MeV
00229 U_DEUTERON_MASS_ENERGY_EQUIVALENT_IN_MEV=0.00000057e0 # MeV
00230
00231 DEUTERON_MASS_IN_U=2.013553212745e0 # u
00232 U_DEUTERON_MASS_IN_U=0.00000000040e0 # u
00233
00234 DEUTERON_MOLAR_MASS=2.01355321205e-3 # kg mol^-1
00235 U_DEUTERON_MOLAR_MASS=0.00000000061e-3 # kg mol^-1
00236
00237 DEUTERON_NEUTRON_MAG__MOM__RATIO=-0.44820653e0 #
00238 U_DEUTERON_NEUTRON_MAG__MOM__RATIO=0.00000011e0 #
00239
00240 DEUTERON_PROTON_MAG__MOM__RATIO=0.30701220939e0 #
00241 U_DEUTERON_PROTON_MAG__MOM__RATIO=0.00000000079e0 #
00242
00243 DEUTERON_PROTON_MASS_RATIO=1.99900750139e0 #
00244 U_DEUTERON_PROTON_MASS_RATIO=0.00000000011e0 #
00245
00246 DEUTERON_RELATIVE_ATOMIC_MASS=2.013553212745e0 #
00247 U_DEUTERON_RELATIVE_ATOMIC_MASS=0.00000000040e0 #
00248
00249 DEUTERON_RMS_CHARGE_RADIUS=2.12799e-15 # m
00250 U_DEUTERON_RMS_CHARGE_RADIUS=0.00074e-15 # m
00251
00252 ELECTRON_CHARGE_TO_MASS_QUOTIENT=-1.75882001076e11 # C kg^-1
00253 U_ELECTRON_CHARGE_TO_MASS_QUOTIENT=0.00000000053e11 # C kg^-1
00254
00255 ELECTRON_DEUTERON_MAG__MOM__RATIO=-2143.9234915e0 #
00256 U_ELECTRON_DEUTERON_MAG__MOM__RATIO=0.0000056e0 #
00257
00258 ELECTRON_DEUTERON_MASS_RATIO=2.724437107462e-4 #
00259 U_ELECTRON_DEUTERON_MASS_RATIO=0.000000000096e-4 #
00260
00261 ELECTRON_G_FACTOR=-2.00231930436256e0 #
00262 U_ELECTRON_G_FACTOR=0.0000000000035e0 #
00263
00264 ELECTRON_GYROMAG__RATIO=1.76085963023e11 # s^-1 T^-1
00265 U_ELECTRON_GYROMAG__RATIO=0.00000000053e11 # s^-1 T^-1
00266
00267 ELECTRON_GYROMAG__RATIO_IN_MHZ_T=28024.9514242e0 # MHz T^-1
00268 U_ELECTRON_GYROMAG__RATIO_IN_MHZ_T=0.0000085e0 # MHz T^-1
00269
00270 ELECTRON_HELION_MASS_RATIO=1.819543074573e-4 #
00271 U_ELECTRON_HELION_MASS_RATIO=0.000000000079e-4 #
00272
00273 ELECTRON_MAG__MOM=-9.2847647043e-24 # J T^-1
00274 U_ELECTRON_MAG__MOM=0.0000000028e-24 # J T^-1
00275
00276 ELECTRON_MAG__MOM__ANOMALY=1.15965218128e-3 #
00277 U_ELECTRON_MAG__MOM__ANOMALY=0.00000000018e-3 #
00278
00279 ELECTRON_MAG__MOM__TO_BOHR_MAGNETON_RATIO=-1.00115965218128e0 #
00280 U_ELECTRON_MAG__MOM__TO_BOHR_MAGNETON_RATIO=0.0000000000018e0 #
00281
00282 ELECTRON_MAG__MOM__TO_NUCLEAR_MAGNETON_RATIO=-1838.28197188e0 #
00283 U_ELECTRON_MAG__MOM__TO_NUCLEAR_MAGNETON_RATIO=0.00000011e0 #
00284
00285 ELECTRON_MASS=9.1093837015e-31 # kg
00286 U_ELECTRON_MASS=0.0000000028e-31 # kg
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00287
00288 ELECTRON_MASS_ENERGY_EQUIVALENT=8.1871057769e-14 # J
00289 U_ELECTRON_MASS_ENERGY_EQUIVALENT=0.0000000025e-14 # J
00290
00291 ELECTRON_MASS_ENERGY_EQUIVALENT_IN_MEV=0.51099895000e0 # MeV
00292 U_ELECTRON_MASS_ENERGY_EQUIVALENT_IN_MEV=0.00000000015e0 # MeV
00293
00294 ELECTRON_MASS_IN_U=5.48579909065e-4 # u
00295 U_ELECTRON_MASS_IN_U=0.00000000016e-4 # u
00296
00297 ELECTRON_MOLAR_MASS=5.4857990888e-7 # kg mol^-1
00298 U_ELECTRON_MOLAR_MASS=0.0000000017e-7 # kg mol^-1
00299
00300 ELECTRON_MUON_MAG_MOM_RATIO=206.7669883e0 #
00301 U_ELECTRON_MUON_MAG_MOM_RATIO=0.0000046e0 #
00302
00303 ELECTRON_MUON_MASS_RATIO=4.83633169e-3 #
00304 U_ELECTRON_MUON_MASS_RATIO=0.00000011e-3 #
00305
00306 ELECTRON_NEUTRON_MAG_MOM_RATIO=960.92050e0 #
00307 U_ELECTRON_NEUTRON_MAG_MOM_RATIO=0.00023e0 #
00308
00309 ELECTRON_NEUTRON_MASS_RATIO=5.4386734424e-4 #
00310 U_ELECTRON_NEUTRON_MASS_RATIO=0.0000000026e-4 #
00311
00312 ELECTRON_PROTON_MAG_MOM_RATIO=-658.21068789e0 #
00313 U_ELECTRON_PROTON_MAG_MOM_RATIO=0.00000020e0 #
00314
00315 ELECTRON_PROTON_MASS_RATIO=5.44617021487e-4 #
00316 U_ELECTRON_PROTON_MASS_RATIO=0.00000000033e-4 #
00317
00318 ELECTRON_RELATIVE_ATOMIC_MASS=5.48579909065e-4 #
00319 U_ELECTRON_RELATIVE_ATOMIC_MASS=0.00000000016e-4 #
00320
00321 ELECTRON_TAU_MASS_RATIO=2.87585e-4 #
00322 U_ELECTRON_TAU_MASS_RATIO=0.00019e-4 #
00323
00324 ELECTRON_TO_ALPHA_PARTICLE_MASS_RATIO=1.370933554787e-4 #
00325 U_ELECTRON_TO_ALPHA_PARTICLE_MASS_RATIO=0.00000000045e-4 #
00326
00327 ELECTRON_TO_SHIELDED_HELION_MAG_MOM_RATIO=864.058257e0 #
00328 U_ELECTRON_TO_SHIELDED_HELION_MAG_MOM_RATIO=0.000010e0 #
00329
00330 ELECTRON_TO_SHIELDED_PROTON_MAG_MOM_RATIO=-658.2275971e0 #
00331 U_ELECTRON_TO_SHIELDED_PROTON_MAG_MOM_RATIO=0.0000072e0 #
00332
00333 ELECTRON_TRITON_MASS_RATIO=1.819200062251e-4 #
00334 U_ELECTRON_TRITON_MASS_RATIO=0.00000000090e-4 #
00335
00336 ELECTRON_VOLT=1.602176634e-19 # J
00337 U_ELECTRON_VOLT=0.0e0 # J
00338
00339 ELECTRON_VOLT_ATOMIC_MASS_UNIT_RELATIONSHIP=1.07354410233e-9 # u
00340 U_ELECTRON_VOLT_ATOMIC_MASS_UNIT_RELATIONSHIP=0.00000000032e-9 # u
00341
00342 ELECTRON_VOLT_HARTREE_RELATIONSHIP=3.6749322175655e-2 # E_h
00343 U_ELECTRON_VOLT_HARTREE_RELATIONSHIP=0.000000000071e-2 # E_h
00344
00345 ELECTRON_VOLT_HERTZ_RELATIONSHIP=2.417989242e14 # Hz
00346 U_ELECTRON_VOLT_HERTZ_RELATIONSHIP=0.0e0 # Hz
00347
00348 ELECTRON_VOLT_INVERSE_METER_RELATIONSHIP=8.065543937e5 # m^-1
00349 U_ELECTRON_VOLT_INVERSE_METER_RELATIONSHIP=0.0e0 # m^-1
00350
00351 ELECTRON_VOLT_JOULE_RELATIONSHIP=1.602176634e-19 # J
00352 U_ELECTRON_VOLT_JOULE_RELATIONSHIP=0.0e0 # J
00353
00354 ELECTRON_VOLT_KELVIN_RELATIONSHIP=1.160451812e4 # K
00355 U_ELECTRON_VOLT_KELVIN_RELATIONSHIP=0.0e0 # K
00356
00357 ELECTRON_VOLT_KILOGRAM_RELATIONSHIP=1.782661921e-36 # kg
00358 U_ELECTRON_VOLT_KILOGRAM_RELATIONSHIP=0.0e0 # kg
00359
00360 ELEMENTARY_CHARGE=1.602176634e-19 # C
00361 U_ELEMENTARY_CHARGE=0.0e0 # C
00362
00363 ELEMENTARY_CHARGE_OVER_H_BAR=1.519267447e15 # A J^-1
00364 U_ELEMENTARY_CHARGE_OVER_H_BAR=0.0e0 # A J^-1
00365
00366 FARADAY_CONSTANT=96485.33212e0 # C mol^-1
00367 U_FARADAY_CONSTANT=0.0e0 # C mol^-1
00368
00369 FERMI_COUPLING_CONSTANT=1.1663787e-5 # GeV^-2
00370 U_FERMI_COUPLING_CONSTANT=0.0000006e-5 # GeV^-2
00371
00372 FINE_STRUCTURE_CONSTANT=7.2973525693e-3 #
00373 U_FINE_STRUCTURE_CONSTANT=0.0000000011e-3 #
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00374
00375 FIRST_RADIATION_CONSTANT=3.741771852e-16 # W m^2
00376 U_FIRST_RADIATION_CONSTANT=0.0e0 # W m^2
00377
00378 FIRST_RADIATION_CONSTANT_FOR_SPECTRAL_RADIANCE=1.191042972e-16 # W m^2 sr^-1
00379 U_FIRST_RADIATION_CONSTANT_FOR_SPECTRAL_RADIANCE=0.0e0 # W m^2 sr^-1
00380
00381 HARTREE_ATOMIC_MASS_UNIT_RELATIONSHIP=2.92126232205e-8 # u
00382 U_HARTREE_ATOMIC_MASS_UNIT_RELATIONSHIP=0.00000000088e-8 # u
00383
00384 HARTREE_ELECTRON_VOLT_RELATIONSHIP=27.211386245988e0 # eV
00385 U_HARTREE_ELECTRON_VOLT_RELATIONSHIP=0.00000000053e0 # eV
00386
00387 HARTREE_ENERGY=4.3597447222071e-18 # J
00388 U_HARTREE_ENERGY=0.000000000085e-18 # J
00389
00390 HARTREE_ENERGY_IN_EV=27.211386245988e0 # eV
00391 U_HARTREE_ENERGY_IN_EV=0.00000000053e0 # eV
00392
00393 HARTREE_HERTZ_RELATIONSHIP=6.579683920502e15 # Hz
00394 U_HARTREE_HERTZ_RELATIONSHIP=0.00000000013e15 # Hz
00395
00396 HARTREE_INVERSE_METER_RELATIONSHIP=2.1947463136320e7 # m^-1
00397 U_HARTREE_INVERSE_METER_RELATIONSHIP=0.00000000043e7 # m^-1
00398
00399 HARTREE_JOULE_RELATIONSHIP=4.3597447222071e-18 # J
00400 U_HARTREE_JOULE_RELATIONSHIP=0.000000000085e-18 # J
00401
00402 HARTREE_KELVIN_RELATIONSHIP=3.1577502480407e5 # K
00403 U_HARTREE_KELVIN_RELATIONSHIP=0.000000000061e5 # K
00404
00405 HARTREE_KILOGRAM_RELATIONSHIP=4.8508702095432e-35 # kg
00406 U_HARTREE_KILOGRAM_RELATIONSHIP=0.000000000094e-35 # kg
00407
00408 HELION_ELECTRON_MASS_RATIO=5495.88528007e0 #
00409 U_HELION_ELECTRON_MASS_RATIO=0.00000024e0 #
00410
00411 HELION_G_FACTOR=-4.255250615e0 #
00412 U_HELION_G_FACTOR=0.000000050e0 #
00413
00414 HELION_MAG__MOM=-1.074617532e-26 # J T^-1
00415 U_HELION_MAG__MOM=0.00000013e-26 # J T^-1
00416
00417 HELION_MAG__MOM__TO_BOHR_MAGNETON_RATIO=-1.158740958e-3 #
00418 U_HELION_MAG__MOM__TO_BOHR_MAGNETON_RATIO=0.00000014e-3 #
00419
00420 HELION_MAG__MOM__TO_NUCLEAR_MAGNETON_RATIO=-2.127625307e0 #
00421 U_HELION_MAG__MOM__TO_NUCLEAR_MAGNETON_RATIO=0.00000025e0 #
00422
00423 HELION_MASS=5.0064127796e-27 # kg
00424 U_HELION_MASS=0.0000000015e-27 # kg
00425
00426 HELION_MASS_ENERGY_EQUIVALENT=4.4995394125e-10 # J
00427 U_HELION_MASS_ENERGY_EQUIVALENT=0.0000000014e-10 # J
00428
00429 HELION_MASS_ENERGY_EQUIVALENT_IN_MEV=2808.39160743e0 # MeV
00430 U_HELION_MASS_ENERGY_EQUIVALENT_IN_MEV=0.00000085e0 # MeV
00431
00432 HELION_MASS_IN_U=3.014932247175e0 # u
00433 U_HELION_MASS_IN_U=0.00000000097e0 # u
00434
00435 HELION_MOLAR_MASS=3.01493224613e-3 # kg mol^-1
00436 U_HELION_MOLAR_MASS=0.0000000091e-3 # kg mol^-1
00437
00438 HELION_PROTON_MASS_RATIO=2.99315267167e0 #
00439 U_HELION_PROTON_MASS_RATIO=0.0000000013e0 #
00440
00441 HELION_RELATIVE_ATOMIC_MASS=3.014932247175e0 #
00442 U_HELION_RELATIVE_ATOMIC_MASS=0.00000000097e0 #
00443
00444 HELION_SHIELDING_SHIFT=5.996743e-5 #
00445 U_HELION_SHIELDING_SHIFT=0.000010e-5 #
00446
00447 HERTZ_ATOMIC_MASS_UNIT_RELATIONSHIP=4.4398216652e-24 # u
00448 U_HERTZ_ATOMIC_MASS_UNIT_RELATIONSHIP=0.000000013e-24 # u
00449
00450 HERTZ_ELECTRON_VOLT_RELATIONSHIP=4.135667696e-15 # eV
00451 U_HERTZ_ELECTRON_VOLT_RELATIONSHIP=0.0e0 # eV
00452
00453 HERTZ_HARTREE_RELATIONSHIP=1.5198298460570e-16 # E_h
00454 U_HERTZ_HARTREE_RELATIONSHIP=0.00000000029e-16 # E_h
00455
00456 HERTZ_INVERSE_METER_RELATIONSHIP=3.335640951e-9 # m^-1
00457 U_HERTZ_INVERSE_METER_RELATIONSHIP=0.0e0 # m^-1
00458
00459 HERTZ_JOULE_RELATIONSHIP=6.62607015e-34 # J
00460 U_HERTZ_JOULE_RELATIONSHIP=0.0e0 # J
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00461
00462 HERTZ_KELVIN_RELATIONSHIP=4.799243073e-11 # K
00463 U_HERTZ_KELVIN_RELATIONSHIP=0.0e0 # K
00464
00465 HERTZ_KILOGRAM_RELATIONSHIP=7.372497323e-51 # kg
00466 U_HERTZ_KILOGRAM_RELATIONSHIP=0.0e0 # kg
00467
00468 HYPERFINE_TRANSITION_FREQUENCY_OF_CS_133=9192631770.0e0 # Hz
00469 U_HYPERFINE_TRANSITION_FREQUENCY_OF_CS_133=0.0e0 # Hz
00470
00471 INVERSE_FINE_STRUCTURE_CONSTANT=137.035999084e0 #
00472 U_INVERSE_FINE_STRUCTURE_CONSTANT=0.000000021e0 #
00473
00474 INVERSE_METER_ATOMIC_MASS_UNIT_RELATIONSHIP=1.33102505010e-15 # u
00475 U_INVERSE_METER_ATOMIC_MASS_UNIT_RELATIONSHIP=0.00000000040e-15 # u
00476
00477 INVERSE_METER_ELECTRON_VOLT_RELATIONSHIP=1.239841984e-6 # eV
00478 U_INVERSE_METER_ELECTRON_VOLT_RELATIONSHIP=0.0e0 # eV
00479
00480 INVERSE_METER_HARTREE_RELATIONSHIP=4.5563352529120e-8 # E_h
00481 U_INVERSE_METER_HARTREE_RELATIONSHIP=0.000000000088e-8 # E_h
00482
00483 INVERSE_METER_HERTZ_RELATIONSHIP=299792458.0e0 # Hz
00484 U_INVERSE_METER_HERTZ_RELATIONSHIP=0.0e0 # Hz
00485
00486 INVERSE_METER_JOULE_RELATIONSHIP=1.986445857e-25 # J
00487 U_INVERSE_METER_JOULE_RELATIONSHIP=0.0e0 # J
00488
00489 INVERSE_METER_KELVIN_RELATIONSHIP=1.438776877e-2 # K
00490 U_INVERSE_METER_KELVIN_RELATIONSHIP=0.0e0 # K
00491
00492 INVERSE_METER_KILOGRAM_RELATIONSHIP=2.210219094e-42 # kg
00493 U_INVERSE_METER_KILOGRAM_RELATIONSHIP=0.0e0 # kg
00494
00495 INVERSE_OF_CONDUCTANCE_QUANTUM=12906.40372e0 # ohm
00496 U_INVERSE_OF_CONDUCTANCE_QUANTUM=0.0e0 # ohm
00497
00498 JOSEPHSON_CONSTANT=483597.8484e9 # Hz V^-1
00499 U_JOSEPHSON_CONSTANT=0.0e0 # Hz V^-1
00500
00501 JOULE_ATOMIC_MASS_UNIT_RELATIONSHIP=6.7005352565e9 # u
00502 U_JOULE_ATOMIC_MASS_UNIT_RELATIONSHIP=0.0000000020e9 # u
00503
00504 JOULE_ELECTRON_VOLT_RELATIONSHIP=6.241509074e18 # eV
00505 U_JOULE_ELECTRON_VOLT_RELATIONSHIP=0.0e0 # eV
00506
00507 JOULE_HARTREE_RELATIONSHIP=2.2937122783963e17 # E_h
00508 U_JOULE_HARTREE_RELATIONSHIP=0.0000000000045e17 # E_h
00509
00510 JOULE_HERTZ_RELATIONSHIP=1.509190179e33 # Hz
00511 U_JOULE_HERTZ_RELATIONSHIP=0.0e0 # Hz
00512
00513 JOULE_INVERSE_METER_RELATIONSHIP=5.034116567e24 # m^-1
00514 U_JOULE_INVERSE_METER_RELATIONSHIP=0.0e0 # m^-1
00515
00516 JOULE_KELVIN_RELATIONSHIP=7.242970516e22 # K
00517 U_JOULE_KELVIN_RELATIONSHIP=0.0e0 # K
00518
00519 JOULE_KILOGRAM_RELATIONSHIP=1.112650056e-17 # kg
00520 U_JOULE_KILOGRAM_RELATIONSHIP=0.0e0 # kg
00521
00522 KELVIN_ATOMIC_MASS_UNIT_RELATIONSHIP=9.2510873014e-14 # u
00523 U_KELVIN_ATOMIC_MASS_UNIT_RELATIONSHIP=0.0000000028e-14 # u
00524
00525 KELVIN_ELECTRON_VOLT_RELATIONSHIP=8.617333262e-5 # eV
00526 U_KELVIN_ELECTRON_VOLT_RELATIONSHIP=0.0e0 # eV
00527
00528 KELVIN_HARTREE_RELATIONSHIP=3.1668115634556e-6 # E_h
00529 U_KELVIN_HARTREE_RELATIONSHIP=0.0000000000061e-6 # E_h
00530
00531 KELVIN_HERTZ_RELATIONSHIP=2.083661912e10 # Hz
00532 U_KELVIN_HERTZ_RELATIONSHIP=0.0e0 # Hz
00533
00534 KELVIN_INVERSE_METER_RELATIONSHIP=69.50348004e0 # m^-1
00535 U_KELVIN_INVERSE_METER_RELATIONSHIP=0.0e0 # m^-1
00536
00537 KELVIN_JOULE_RELATIONSHIP=1.380649e-23 # J
00538 U_KELVIN_JOULE_RELATIONSHIP=0.0e0 # J
00539
00540 KELVIN_KILOGRAM_RELATIONSHIP=1.536179187e-40 # kg
00541 U_KELVIN_KILOGRAM_RELATIONSHIP=0.0e0 # kg
00542
00543 KILOGRAM_ATOMIC_MASS_UNIT_RELATIONSHIP=6.0221407621e26 # u
00544 U_KILOGRAM_ATOMIC_MASS_UNIT_RELATIONSHIP=0.0000000018e26 # u
00545
00546 KILOGRAM_ELECTRON_VOLT_RELATIONSHIP=5.609588603e35 # eV
00547 U_KILOGRAM_ELECTRON_VOLT_RELATIONSHIP=0.0e0 # eV
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00548
00549 KILOGRAM_HARTREE_RELATIONSHIP=2.0614857887409e34 # E_h
00550 U_KILOGRAM_HARTREE_RELATIONSHIP=0.0000000000040e34 # E_h
00551
00552 KILOGRAM_HERTZ_RELATIONSHIP=1.356392489e50 # Hz
00553 U_KILOGRAM_HERTZ_RELATIONSHIP=0.0e0 # Hz
00554
00555 KILOGRAM_INVERSE_METER_RELATIONSHIP=4.524438335e41 # m^-1
00556 U_KILOGRAM_INVERSE_METER_RELATIONSHIP=0.0e0 # m^-1
00557
00558 KILOGRAM_JOULE_RELATIONSHIP=8.987551787e16 # J
00559 U_KILOGRAM_JOULE_RELATIONSHIP=0.0e0 # J
00560
00561 KILOGRAM_KELVIN_RELATIONSHIP=6.509657260e39 # K
00562 U_KILOGRAM_KELVIN_RELATIONSHIP=0.0e0 # K
00563
00564 LATTICE_PARAMETER_OF_SILICON=5.431020511e-10 # m
00565 U_LATTICE_PARAMETER_OF_SILICON=0.000000089e-10 # m
00566
00567 LATTICE_SPACING_OF_IDEAL_SI__220=1.920155716e-10 # m
00568 U_LATTICE_SPACING_OF_IDEAL_SI__220=0.000000032e-10 # m
00569
00570 LOSCHMIDT_CONSTANT__273_15_K_100_KPA=2.651645804e25 # m^-3
00571 U_LOSCHMIDT_CONSTANT__273_15_K_100_KPA=0.0e0 # m^-3
00572
00573 LOSCHMIDT_CONSTANT__273_15_K_101_325_KPA=2.686780111e25 # m^-3
00574 U_LOSCHMIDT_CONSTANT__273_15_K_101_325_KPA=0.0e0 # m^-3
00575
00576 LUMINOUS EFFICACY=683.0e0 # lm W^-1
00577 U_LUMINOUS EFFICACY=0.0e0 # lm W^-1
00578
00579 MAG__FLUX_QUANTUM=2.067833848e-15 # Wb
00580 U_MAG__FLUX_QUANTUM=0.0e0 # Wb
00581
00582 MOLAR_GAS_CONSTANT=8.314462618e0 # J mol^-1 K^-1
00583 U_MOLAR_GAS_CONSTANT=0.0e0 # J mol^-1 K^-1
00584
00585 MOLAR_MASS_CONSTANT=0.9999999965e-3 # kg mol^-1
00586 U_MOLAR_MASS_CONSTANT=0.00000000030e-3 # kg mol^-1
00587
00588 MOLAR_MASS_OF_CARBON_12=11.9999999958e-3 # kg mol^-1
00589 U_MOLAR_MASS_OF_CARBON_12=0.0000000036e-3 # kg mol^-1
00590
00591 MOLAR_PLANCK_CONSTANT=3.990312712e-10 # J Hz^-1 mol^-1
00592 U_MOLAR_PLANCK_CONSTANT=0.0e0 # J Hz^-1 mol^-1
00593
00594 MOLAR_VOLUME_OF_IDEAL_GAS__273_15_K_100_KPA=22.71095464e-3 # m^3 mol^-1
00595 U_MOLAR_VOLUME_OF_IDEAL_GAS__273_15_K_100_KPA=0.0e0 # m^3 mol^-1
00596
00597 MOLAR_VOLUME_OF_IDEAL_GAS__273_15_K_101_325_KPA=22.41396954e-3 # m^3 mol^-1
00598 U_MOLAR_VOLUME_OF_IDEAL_GAS__273_15_K_101_325_KPA=0.0e0 # m^3 mol^-1
00599
00600 MOLAR_VOLUME_OF_SILICON=1.205883199e-5 # m^3 mol^-1
00601 U_MOLAR_VOLUME_OF_SILICON=0.000000060e-5 # m^3 mol^-1
00602
00603 MOLYBDENUM_X_UNIT=1.00209952e-13 # m
00604 U_MOLYBDENUM_X_UNIT=0.00000053e-13 # m
00605
00606 MUON_COMPTON_WAVELENGTH=1.173444110e-14 # m
00607 U_MUON_COMPTON_WAVELENGTH=0.000000026e-14 # m
00608
00609 MUON_ELECTRON_MASS_RATIO=206.7682830e0 #
00610 U_MUON_ELECTRON_MASS_RATIO=0.0000046e0 #
00611
00612 MUON_G_FACTOR=-2.0023318418e0 #
00613 U_MUON_G_FACTOR=0.000000013e0 #
00614
00615 MUON_MAG__MOM=-4.49044830e-26 # J T^-1
00616 U_MUON_MAG__MOM=0.00000010e-26 # J T^-1
00617
00618 MUON_MAG__MOM__ANOMALY=1.16592089e-3 #
00619 U_MUON_MAG__MOM__ANOMALY=0.00000063e-3 #
00620
00621 MUON_MAG__MOM__TO_BOHR_MAGNETON_RATIO=-4.84197047e-3 #
00622 U_MUON_MAG__MOM__TO_BOHR_MAGNETON_RATIO=0.00000011e-3 #
00623
00624 MUON_MAG__MOM__TO_NUCLEAR_MAGNETON_RATIO=-8.89059703e0 #
00625 U_MUON_MAG__MOM__TO_NUCLEAR_MAGNETON_RATIO=0.00000020e0 #
00626
00627 MUON_MASS=1.883531627e-28 # kg
00628 U_MUON_MASS=0.00000042e-28 # kg
00629
00630 MUON_MASS_ENERGY_EQUIVALENT=1.692833804e-11 # J
00631 U_MUON_MASS_ENERGY_EQUIVALENT=0.000000038e-11 # J
00632
00633 MUON_MASS_ENERGY_EQUIVALENT_IN_MEV=105.6583755e0 # MeV
00634 U_MUON_MASS_ENERGY_EQUIVALENT_IN_MEV=0.0000023e0 # MeV
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00635
00636 MUON_MASS_IN_U=0.1134289259e0 # u
00637 U_MUON_MASS_IN_U=0.0000000025e0 # u
00638
00639 MUON_MOLAR_MASS=1.134289259e-4 # kg mol^-1
00640 U_MUON_MOLAR_MASS=0.000000025e-4 # kg mol^-1
00641
00642 MUON_NEUTRON_MASS_RATIO=0.1124545170e0 #
00643 U_MUON_NEUTRON_MASS_RATIO=0.0000000025e0 #
00644
00645 MUON_PROTON_MAG__MOM__RATIO=-3.183345142e0 #
00646 U_MUON_PROTON_MAG__MOM__RATIO=0.000000071e0 #
00647
00648 MUON_PROTON_MASS_RATIO=0.1126095264e0 #
00649 U_MUON_PROTON_MASS_RATIO=0.0000000025e0 #
00650
00651 MUON_TAU_MASS_RATIO=5.94635e-2 #
00652 U_MUON_TAU_MASS_RATIO=0.00040e-2 #
00653
00654 NATURAL_UNIT_OF_ACTION=1.054571817e-34 # J s
00655 U_NATURAL_UNIT_OF_ACTION=0.0e0 # J s
00656
00657 NATURAL_UNIT_OF_ACTION_IN_EV_S=6.582119569e-16 # eV s
00658 U_NATURAL_UNIT_OF_ACTION_IN_EV_S=0.0e0 # eV s
00659
00660 NATURAL_UNIT_OF_ENERGY=8.1871057769e-14 # J
00661 U_NATURAL_UNIT_OF_ENERGY=0.0000000025e-14 # J
00662
00663 NATURAL_UNIT_OF_ENERGY_IN_MEV=0.51099895000e0 # MeV
00664 U_NATURAL_UNIT_OF_ENERGY_IN_MEV=0.0000000015e0 # MeV
00665
00666 NATURAL_UNIT_OF_LENGTH=3.8615926796e-13 # m
00667 U_NATURAL_UNIT_OF_LENGTH=0.0000000012e-13 # m
00668
00669 NATURAL_UNIT_OF_MASS=9.1093837015e-31 # kg
00670 U_NATURAL_UNIT_OF_MASS=0.0000000028e-31 # kg
00671
00672 NATURAL_UNIT_OF_MOMENTUM=2.73092453075e-22 # kg m s^-1
00673 U_NATURAL_UNIT_OF_MOMENTUM=0.00000000082e-22 # kg m s^-1
00674
00675 NATURAL_UNIT_OF_MOMENTUM_IN_MEV_C=0.51099895000e0 # MeV/c
00676 U_NATURAL_UNIT_OF_MOMENTUM_IN_MEV_C=0.0000000015e0 # MeV/c
00677
00678 NATURAL_UNIT_OF_TIME=1.28808866819e-21 # s
00679 U_NATURAL_UNIT_OF_TIME=0.00000000039e-21 # s
00680
00681 NATURAL_UNIT_OF_VELOCITY=299792458.0e0 # m s^-1
00682 U_NATURAL_UNIT_OF_VELOCITY=0.0e0 # m s^-1
00683
00684 NEUTRON_COMPTON_WAVELENGTH=1.31959090581e-15 # m
00685 U_NEUTRON_COMPTON_WAVELENGTH=0.00000000075e-15 # m
00686
00687 NEUTRON_ELECTRON_MAG__MOM__RATIO=1.04066882e-3 #
00688 U_NEUTRON_ELECTRON_MAG__MOM__RATIO=0.000000025e-3 #
00689
00690 NEUTRON_ELECTRON_MASS_RATIO=1838.68366173e0 #
00691 U_NEUTRON_ELECTRON_MASS_RATIO=0.00000089e0 #
00692
00693 NEUTRON_G_FACTOR=-3.82608545e0 #
00694 U_NEUTRON_G_FACTOR=0.00000090e0 #
00695
00696 NEUTRON_GYROMAG__RATIO=1.83247171e8 # s^-1 T^-1
00697 U_NEUTRON_GYROMAG__RATIO=0.00000043e8 # s^-1 T^-1
00698
00699 NEUTRON_GYROMAG__RATIO_IN_MHZ_T=29.1646931e0 # MHz T^-1
00700 U_NEUTRON_GYROMAG__RATIO_IN_MHZ_T=0.0000069e0 # MHz T^-1
00701
00702 NEUTRON_MAG__MOM=-9.6623651e-27 # J T^-1
00703 U_NEUTRON_MAG__MOM=0.0000023e-27 # J T^-1
00704
00705 NEUTRON_MAG__MOM__TO_BOHR_MAGNETON_RATIO=-1.04187563e-3 #
00706 U_NEUTRON_MAG__MOM__TO_BOHR_MAGNETON_RATIO=0.00000025e-3 #
00707
00708 NEUTRON_MAG__MOM__TO_NUCLEAR_MAGNETON_RATIO=-1.91304273e0 #
00709 U_NEUTRON_MAG__MOM__TO_NUCLEAR_MAGNETON_RATIO=0.00000045e0 #
00710
00711 NEUTRON_MASS=1.67492749804e-27 # kg
00712 U_NEUTRON_MASS=0.00000000095e-27 # kg
00713
00714 NEUTRON_MASS_ENERGY_EQUIVALENT=1.50534976287e-10 # J
00715 U_NEUTRON_MASS_ENERGY_EQUIVALENT=0.00000000086e-10 # J
00716
00717 NEUTRON_MASS_ENERGY_EQUIVALENT_IN_MEV=939.56542052e0 # MeV
00718 U_NEUTRON_MASS_ENERGY_EQUIVALENT_IN_MEV=0.00000054e0 # MeV
00719
00720 NEUTRON_MASS_IN_U=1.00866491595e0 # u
00721 U_NEUTRON_MASS_IN_U=0.00000000049e0 # u
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00722
00723 NEUTRON_MOLAR_MASS=1.00866491560e-3 # kg mol^-1
00724 U_NEUTRON_MOLAR_MASS=0.00000000057e-3 # kg mol^-1
00725
00726 NEUTRON_MUON_MASS_RATIO=8.89248406e0 #
00727 U_NEUTRON_MUON_MASS_RATIO=0.00000020e0 #
00728
00729 NEUTRON_PROTON_MAG_MOM_RATIO=-0.68497934e0 #
00730 U_NEUTRON_PROTON_MAG_MOM_RATIO=0.00000016e0 #
00731
00732 NEUTRON_PROTON_MASS_DIFFERENCE=2.30557435e-30 # kg
00733 U_NEUTRON_PROTON_MASS_DIFFERENCE=0.00000082e-30 # kg
00734
00735 NEUTRON_PROTON_MASS_DIFFERENCE_ENERGY_EQUIVALENT=2.07214689e-13 # J
00736 U_NEUTRON_PROTON_MASS_DIFFERENCE_ENERGY_EQUIVALENT=0.00000074e-13 # J
00737
00738 NEUTRON_PROTON_MASS_DIFFERENCE_ENERGY_EQUIVALENT_IN_MEV=1.29333236e0 # MeV
00739 U_NEUTRON_PROTON_MASS_DIFFERENCE_ENERGY_EQUIVALENT_IN_MEV=0.00000046e0 # MeV
00740
00741 NEUTRON_PROTON_MASS_DIFFERENCE_IN_U=1.38844933e-3 # u
00742 U_NEUTRON_PROTON_MASS_DIFFERENCE_IN_U=0.00000049e-3 # u
00743
00744 NEUTRON_PROTON_MASS_RATIO=1.00137841931e0 #
00745 U_NEUTRON_PROTON_MASS_RATIO=0.00000000049e0 #
00746
00747 NEUTRON_RELATIVE_ATOMIC_MASS=1.00866491595e0 #
00748 U_NEUTRON_RELATIVE_ATOMIC_MASS=0.00000000049e0 #
00749
00750 NEUTRON_TAU_MASS_RATIO=0.528779e0 #
00751 U_NEUTRON_TAU_MASS_RATIO=0.000036e0 #
00752
00753 NEUTRON_TO_SHIELDED_PROTON_MAG_MOM_RATIO=-0.68499694e0 #
00754 U_NEUTRON_TO_SHIELDED_PROTON_MAG_MOM_RATIO=0.00000016e0 #
00755
00756 NEWTONIAN_CONSTANT_OF_GRAVITATION=6.67430e-11 # m^3 kg^-1 s^-2
00757 U_NEWTONIAN_CONSTANT_OF_GRAVITATION=0.00015e-11 # m^3 kg^-1 s^-2
00758
00759 NEWTONIAN_CONSTANT_OF_GRAVITATION_OVER_H_BAR_C=6.70883e-39 # (GeV/c^2)^-2
00760 U_NEWTONIAN_CONSTANT_OF_GRAVITATION_OVER_H_BAR_C=0.00015e-39 # (GeV/c^2)^-2
00761
00762 NUCLEAR_MAGNETON=5.0507837461e-27 # J T^-1
00763 U_NUCLEAR_MAGNETON=0.0000000015e-27 # J T^-1
00764
00765 NUCLEAR_MAGNETON_IN_EV_T=3.15245125844e-8 # eV T^-1
00766 U_NUCLEAR_MAGNETON_IN_EV_T=0.00000000096e-8 # eV T^-1
00767
00768 NUCLEAR_MAGNETON_IN_INVERSE_METER_PER_TESLA=2.54262341353e-2 # m^-1 T^-1
00769 U_NUCLEAR_MAGNETON_IN_INVERSE_METER_PER_TESLA=0.00000000078e-2 # m^-1 T^-1
00770
00771 NUCLEAR_MAGNETON_IN_K_T=3.6582677756e-4 # K T^-1
00772 U_NUCLEAR_MAGNETON_IN_K_T=0.0000000011e-4 # K T^-1
00773
00774 NUCLEAR_MAGNETON_IN_MHZ_T=7.6225932291e0 # MHz T^-1
00775 U_NUCLEAR_MAGNETON_IN_MHZ_T=0.0000000023e0 # MHz T^-1
00776
00777 PLANCK_CONSTANT=6.62607015e-34 # J Hz^-1
00778 U_PLANCK_CONSTANT=0.0e0 # J Hz^-1
00779
00780 PLANCK_CONSTANT_IN_EV_HZ=4.135667696e-15 # eV Hz^-1
00781 U_PLANCK_CONSTANT_IN_EV_HZ=0.0e0 # eV Hz^-1
00782
00783 PLANCK_LENGTH=1.616255e-35 # m
00784 U_PLANCK_LENGTH=0.000018e-35 # m
00785
00786 PLANCK_MASS=2.176434e-8 # kg
00787 U_PLANCK_MASS=0.000024e-8 # kg
00788
00789 PLANCK_MASS_ENERGY_EQUIVALENT_IN_GEV=1.220890e19 # GeV
00790 U_PLANCK_MASS_ENERGY_EQUIVALENT_IN_GEV=0.000014e19 # GeV
00791
00792 PLANCK_TEMPERATURE=1.416784e32 # K
00793 U_PLANCK_TEMPERATURE=0.000016e32 # K
00794
00795 PLANCK_TIME=5.391247e-44 # s
00796 U_PLANCK_TIME=0.000060e-44 # s
00797
00798 PROTON_CHARGE_TO_MASS_QUOTIENT=9.5788331560e7 # C kg^-1
00799 U_PROTON_CHARGE_TO_MASS_QUOTIENT=0.0000000029e7 # C kg^-1
00800
00801 PROTON_COMPTON_WAVELENGTH=1.32140985539e-15 # m
00802 U_PROTON_COMPTON_WAVELENGTH=0.00000000040e-15 # m
00803
00804 PROTON_ELECTRON_MASS_RATIO=1836.15267343e0 #
00805 U_PROTON_ELECTRON_MASS_RATIO=0.00000011e0 #
00806
00807 PROTON_G_FACTOR=5.5856946893e0 #
00808 U_PROTON_G_FACTOR=0.0000000016e0 #
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00809
00810 PROTON_GYROMAG_RATIO=2.6752218744e8 # s^-1 T^-1
00811 U_PROTON_GYROMAG_RATIO=0.000000011e8 # s^-1 T^-1
00812
00813 PROTON_GYROMAG_RATIO_IN_MHZ_T=42.577478518e0 # MHz T^-1
00814 U_PROTON_GYROMAG_RATIO_IN_MHZ_T=0.00000018e0 # MHz T^-1
00815
00816 PROTON_MAG_MOM=1.41060679736e-26 # J T^-1
00817 U_PROTON_MAG_MOM=0.0000000060e-26 # J T^-1
00818
00819 PROTON_MAG_MOM_TO_BOHR_MAGNETON_RATIO=1.52103220230e-3 #
00820 U_PROTON_MAG_MOM_TO_BOHR_MAGNETON_RATIO=0.0000000046e-3 #
00821
00822 PROTON_MAG_MOM_TO_NUCLEAR_MAGNETON_RATIO=2.79284734463e0 #
00823 U_PROTON_MAG_MOM_TO_NUCLEAR_MAGNETON_RATIO=0.0000000082e0 #
00824
00825 PROTON_MAG_SHIELDING_CORRECTION=2.5689e-5 #
00826 U_PROTON_MAG_SHIELDING_CORRECTION=0.0011e-5 #
00827
00828 PROTON_MASS=1.67262192369e-27 # kg
00829 U_PROTON_MASS=0.0000000051e-27 # kg
00830
00831 PROTON_MASS_ENERGY_EQUIVALENT=1.50327761598e-10 # J
00832 U_PROTON_MASS_ENERGY_EQUIVALENT=0.0000000046e-10 # J
00833
00834 PROTON_MASS_ENERGY_EQUIVALENT_IN_MEV=938.27208816e0 # MeV
00835 U_PROTON_MASS_ENERGY_EQUIVALENT_IN_MEV=0.00000029e0 # MeV
00836
00837 PROTON_MASS_IN_U=1.007276466621e0 # u
00838 U_PROTON_MASS_IN_U=0.00000000053e0 # u
00839
00840 PROTON_MOLAR_MASS=1.00727646627e-3 # kg mol^-1
00841 U_PROTON_MOLAR_MASS=0.0000000031e-3 # kg mol^-1
00842
00843 PROTON_MUON_MASS_RATIO=8.88024337e0 #
00844 U_PROTON_MUON_MASS_RATIO=0.00000020e0 #
00845
00846 PROTON_NEUTRON_MAG_MOM_RATIO=-1.45989805e0 #
00847 U_PROTON_NEUTRON_MAG_MOM_RATIO=0.00000034e0 #
00848
00849 PROTON_NEUTRON_MASS_RATIO=0.99862347812e0 #
00850 U_PROTON_NEUTRON_MASS_RATIO=0.0000000049e0 #
00851
00852 PROTON_RELATIVE_ATOMIC_MASS=1.007276466621e0 #
00853 U_PROTON_RELATIVE_ATOMIC_MASS=0.00000000053e0 #
00854
00855 PROTON_RMS_CHARGE_RADIUS=8.414e-16 # m
00856 U_PROTON_RMS_CHARGE_RADIUS=0.019e-16 # m
00857
00858 PROTON_TAU_MASS_RATIO=0.528051e0 #
00859 U_PROTON_TAU_MASS_RATIO=0.000036e0 #
00860
00861 QUANTUM_OF_CIRCULATION=3.6369475516e-4 # m^2 s^-1
00862 U_QUANTUM_OF_CIRCULATION=0.000000011e-4 # m^2 s^-1
00863
00864 QUANTUM_OF_CIRCULATION_TIMES_2=7.2738951032e-4 # m^2 s^-1
00865 U_QUANTUM_OF_CIRCULATION_TIMES_2=0.000000022e-4 # m^2 s^-1
00866
00867 REDUCED_COMPTON_WAVELENGTH=3.8615926796e-13 # m
00868 U_REDUCED_COMPTON_WAVELENGTH=0.000000012e-13 # m
00869
00870 REDUCED_MUON_COMPTON_WAVELENGTH=1.867594306e-15 # m
00871 U_REDUCED_MUON_COMPTON_WAVELENGTH=0.000000042e-15 # m
00872
00873 REDUCED_NEUTRON_COMPTON_WAVELENGTH=2.1001941552e-16 # m
00874 U_REDUCED_NEUTRON_COMPTON_WAVELENGTH=0.000000012e-16 # m
00875
00876 REDUCED_PLANCK_CONSTANT=1.054571817e-34 # J s
00877 U_REDUCED_PLANCK_CONSTANT=0.0e0 # J s
00878
00879 REDUCED_PLANCK_CONSTANT_IN_EV_S=6.582119569e-16 # eV s
00880 U_REDUCED_PLANCK_CONSTANT_IN_EV_S=0.0e0 # eV s
00881
00882 REDUCED_PLANCK_CONSTANT_TIMES_C_IN_MEV_FM=197.3269804e0 # MeV fm
00883 U_REDUCED_PLANCK_CONSTANT_TIMES_C_IN_MEV_FM=0.0e0 # MeV fm
00884
00885 REDUCED_PROTON_COMPTON_WAVELENGTH=2.10308910336e-16 # m
00886 U_REDUCED_PROTON_COMPTON_WAVELENGTH=0.0000000064e-16 # m
00887
00888 REDUCED_TAU_COMPTON_WAVELENGTH=1.110538e-16 # m
00889 U_REDUCED_TAU_COMPTON_WAVELENGTH=0.000075e-16 # m
00890
00891 RYDBERG_CONSTANT=10973731.568160e0 # m^-1
00892 U_RYDBERG_CONSTANT=0.000021e0 # m^-1
00893
00894 RYDBERG_CONSTANT_TIMES_C_IN_HZ=3.2898419602508e15 # Hz
00895 U_RYDBERG_CONSTANT_TIMES_C_IN_HZ=0.00000000064e15 # Hz
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00896
00897 RYDBERG_CONSTANT_TIMES_HC_IN_EV=13.605693122994e0 # eV
00898 U_RYDBERG_CONSTANT_TIMES_HC_IN_EV=0.00000000026e0 # eV
00899
00900 RYDBERG_CONSTANT_TIMES_HC_IN_J=2.1798723611035e-18 # J
00901 U_RYDBERG_CONSTANT_TIMES_HC_IN_J=0.000000000042e-18 # J
00902
00903 SACKUR_TETRODE_CONSTANT__1_K__100_KPA=-1.15170753706e0 #
00904 U_SACKUR_TETRODE_CONSTANT__1_K__100_KPA=0.00000000045e0 #
00905
00906 SACKUR_TETRODE_CONSTANT__1_K__101_325_KPA=-1.16487052358e0 #
00907 U_SACKUR_TETRODE_CONSTANT__1_K__101_325_KPA=0.00000000045e0 #
00908
00909 SECOND_RADIATION_CONSTANT=1.438776877e-2 # m K
00910 U_SECOND_RADIATION_CONSTANT=0.0e0 # m K
00911
00912 SHIELDED_HELION_GYROMAG__RATIO=2.037894569e8 # s^-1 T^-1
00913 U_SHIELDED_HELION_GYROMAG__RATIO=0.000000024e8 # s^-1 T^-1
00914
00915 SHIELDED_HELION_GYROMAG__RATIO_IN_MHZ_T=32.43409942e0 # MHz T^-1
00916 U_SHIELDED_HELION_GYROMAG__RATIO_IN_MHZ_T=0.00000038e0 # MHz T^-1
00917
00918 SHIELDED_HELION_MAG__MOM=-1.074553090e-26 # J T^-1
00919 U_SHIELDED_HELION_MAG__MOM=0.000000013e-26 # J T^-1
00920
00921 SHIELDED_HELION_MAG__MOM__TO_BOHR_MAGNETON_RATIO=-1.158671471e-3 #
00922 U_SHIELDED_HELION_MAG__MOM__TO_BOHR_MAGNETON_RATIO=0.000000014e-3 #
00923
00924 SHIELDED_HELION_MAG__MOM__TO_NUCLEAR_MAGNETON_RATIO=-2.127497719e0 #
00925 U_SHIELDED_HELION_MAG__MOM__TO_NUCLEAR_MAGNETON_RATIO=0.000000025e0 #
00926
00927 SHIELDED_HELION_TO_PROTON_MAG__MOM__RATIO=-0.7617665618e0 #
00928 U_SHIELDED_HELION_TO_PROTON_MAG__MOM__RATIO=0.0000000089e0 #
00929
00930 SHIELDED_HELION_TO_SHIELDED_PROTON_MAG__MOM__RATIO=-0.7617861313e0 #
00931 U_SHIELDED_HELION_TO_SHIELDED_PROTON_MAG__MOM__RATIO=0.0000000033e0 #
00932
00933 SHIELDED_PROTON_GYROMAG__RATIO=2.675153151e8 # s^-1 T^-1
00934 U_SHIELDED_PROTON_GYROMAG__RATIO=0.000000029e8 # s^-1 T^-1
00935
00936 SHIELDED_PROTON_GYROMAG__RATIO_IN_MHZ_T=42.57638474e0 # MHz T^-1
00937 U_SHIELDED_PROTON_GYROMAG__RATIO_IN_MHZ_T=0.00000046e0 # MHz T^-1
00938
00939 SHIELDED_PROTON_MAG__MOM=1.410570560e-26 # J T^-1
00940 U_SHIELDED_PROTON_MAG__MOM=0.000000015e-26 # J T^-1
00941
00942 SHIELDED_PROTON_MAG__MOM__TO_BOHR_MAGNETON_RATIO=1.520993128e-3 #
00943 U_SHIELDED_PROTON_MAG__MOM__TO_BOHR_MAGNETON_RATIO=0.000000017e-3 #
00944
00945 SHIELDED_PROTON_MAG__MOM__TO_NUCLEAR_MAGNETON_RATIO=2.792775599e0 #
00946 U_SHIELDED_PROTON_MAG__MOM__TO_NUCLEAR_MAGNETON_RATIO=0.000000030e0 #
00947
00948 SHIELDING_DIFFERENCE_OF_D_AND_P_IN_HD=2.0200e-8 #
00949 U_SHIELDING_DIFFERENCE_OF_D_AND_P_IN_HD=0.0020e-8 #
00950
00951 SHIELDING_DIFFERENCE_OF_T_AND_P_IN_HT=2.4140e-8 #
00952 U_SHIELDING_DIFFERENCE_OF_T_AND_P_IN_HT=0.0020e-8 #
00953
00954 SPEED_OF_LIGHT_IN_VACUUM=299792458.0e0 # m s^-1
00955 U_SPEED_OF_LIGHT_IN_VACUUM=0.0e0 # m s^-1
00956
00957 STANDARD_ACCELERATION_OF_GRAVITY=9.80665e0 # m s^-2
00958 U_STANDARD_ACCELERATION_OF_GRAVITY=0.0e0 # m s^-2
00959
00960 STANDARD_ATMOSPHERE=101325.0e0 # Pa
00961 U_STANDARD_ATMOSPHERE=0.0e0 # Pa
00962
00963 STANDARD_STATE_PRESSURE=100000.0e0 # Pa
00964 U_STANDARD_STATE_PRESSURE=0.0e0 # Pa
00965
00966 STEFAN_BOLTZMANN_CONSTANT=5.670374419e-8 # W m^-2 K^-4
00967 U_STEFAN_BOLTZMANN_CONSTANT=0.0e0 # W m^-2 K^-4
00968
00969 TAU_COMPTON_WAVELENGTH=6.97771e-16 # m
00970 U_TAU_COMPTON_WAVELENGTH=0.00047e-16 # m
00971
00972 TAU_ELECTRON_MASS_RATIO=3477.23e0 #
00973 U_TAU_ELECTRON_MASS_RATIO=0.23e0 #
00974
00975 TAU_ENERGY_EQUIVALENT=1776.86e0 # MeV
00976 U_TAU_ENERGY_EQUIVALENT=0.12e0 # MeV
00977
00978 TAU_MASS=3.16754e-27 # kg
00979 U_TAU_MASS=0.00021e-27 # kg
00980
00981 TAU_MASS_ENERGY_EQUIVALENT=2.84684e-10 # J
00982 U_TAU_MASS_ENERGY_EQUIVALENT=0.00019e-10 # J

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00983
00984 TAU_MASS_IN_U=1.90754e0 # u
00985 U_TAU_MASS_IN_U=0.00013e0 # u
00986
00987 TAU_MOLAR_MASS=1.90754e-3 # kg mol^-1
00988 U_TAU_MOLAR_MASS=0.00013e-3 # kg mol^-1
00989
00990 TAU_MUON_MASS_RATIO=16.8170e0 #
00991 U_TAU_MUON_MASS_RATIO=0.0011e0 #
00992
00993 TAU_NEUTRON_MASS_RATIO=1.89115e0 #
00994 U_TAU_NEUTRON_MASS_RATIO=0.00013e0 #
00995
00996 TAU_PROTON_MASS_RATIO=1.89376e0 #
00997 U_TAU_PROTON_MASS_RATIO=0.00013e0 #
00998
00999 THOMSON_CROSS_SECTION=6.6524587321e-29 # m^2
1000 U_THOMSON_CROSS_SECTION=0.0000000060e-29 # m^2
1001
1002 TRITON_ELECTRON_MASS_RATIO=5496.92153573e0 #
1003 U_TRITON_ELECTRON_MASS_RATIO=0.00000027e0 #
1004
1005 TRITON_G_FACTOR=5.957924931e0 #
1006 U_TRITON_G_FACTOR=0.000000012e0 #
1007
1008 TRITON_MAG__MOM=1.5046095202e-26 # J T^-1
1009 U_TRITON_MAG__MOM=0.0000000030e-26 # J T^-1
1010
1011 TRITON_MAG__MOM__TO_BOHR_MAGNETON_RATIO=1.6223936651e-3 #
1012 U_TRITON_MAG__MOM__TO_BOHR_MAGNETON_RATIO=0.0000000032e-3 #
1013
1014 TRITON_MAG__MOM__TO_NUCLEAR_MAGNETON_RATIO=2.9789624656e0 #
1015 U_TRITON_MAG__MOM__TO_NUCLEAR_MAGNETON_RATIO=0.0000000059e0 #
1016
1017 TRITON_MASS=5.0073567446e-27 # kg
1018 U_TRITON_MASS=0.0000000015e-27 # kg
1019
1020 TRITON_MASS_ENERGY_EQUIVALENT=4.5003878060e-10 # J
1021 U_TRITON_MASS_ENERGY_EQUIVALENT=0.0000000014e-10 # J
1022
1023 TRITON_MASS_ENERGY_EQUIVALENT_IN_MEV=2808.92113298e0 # MeV
1024 U_TRITON_MASS_ENERGY_EQUIVALENT_IN_MEV=0.00000085e0 # MeV
1025
1026 TRITON_MASS_IN_U=3.01550071621e0 # u
1027 U_TRITON_MASS_IN_U=0.00000000012e0 # u
1028
1029 TRITON_MOLAR_MASS=3.01550071517e-3 # kg mol^-1
1030 U_TRITON_MOLAR_MASS=0.00000000092e-3 # kg mol^-1
1031
1032 TRITON_PROTON_MASS_RATIO=2.99371703414e0 #
1033 U_TRITON_PROTON_MASS_RATIO=0.00000000015e0 #
1034
1035 TRITON_RELATIVE_ATOMIC_MASS=3.01550071621e0 #
1036 U_TRITON_RELATIVE_ATOMIC_MASS=0.00000000012e0 #
1037
1038 TRITON_TO_PROTON_MAG__MOM__RATIO=1.0666399191e0 #
1039 U_TRITON_TO_PROTON_MAG__MOM__RATIO=0.0000000021e0 #
1040
1041 UNIFIED_ATOMIC_MASS_UNIT=1.66053906660e-27 # kg
1042 U_UNIFIED_ATOMIC_MASS_UNIT=0.00000000050e-27 # kg
1043
1044 VACUUM_ELECTRIC_PERMITTIVITY=8.8541878128e-12 # F m^-1
1045 U_VACUUM_ELECTRIC_PERMITTIVITY=0.0000000013e-12 # F m^-1
1046
1047 VACUUM_MAG__PERMEABILITY=1.25663706212e-6 # N A^-2
1048 U_VACUUM_MAG__PERMEABILITY=0.00000000019e-6 # N A^-2
1049
1050 VON_KLITZING_CONSTANT=25812.80745e0 # ohm
1051 U_VON_KLITZING_CONSTANT=0.0e0 # ohm
1052
1053 WEAK_MIXING_ANGLE=0.22290e0 #
1054 U_WEAK_MIXING_ANGLE=0.00030e0 #
1055
1056 WIEN_FREQUENCY_DISPLACEMENT_LAW_CONSTANT=5.878925757e10 # Hz K^-1
1057 U_WIEN_FREQUENCY_DISPLACEMENT_LAW_CONSTANT=0.0e0 # Hz K^-1
1058
1059 WIEN_WAVELENGTH_DISPLACEMENT_LAW_CONSTANT=2.897771955e-3 # m K
1060 U_WIEN_WAVELENGTH_DISPLACEMENT_LAW_CONSTANT=0.0e0 # m K
1061
1062 W_TO_Z_MASS_RATIO=0.88153e0 #
1063 U_W_TO_Z_MASS_RATIO=0.00017e0 #
1064
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