CIAAW

0.1.0

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Chapter 1

CIAAW Fortran and C API

This is the documentation of the Fortran code.

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Module Documentation

5.1 ciaaw Module Reference

Main module for CIAAW.

5.1.1 Detailed Description

Main module for CIAAW.

5.2 ciaaw__saw Module Reference

Standard Atomic Weights - autogenerated.

Data Types

- type capi_element_t

    Object representing an element.
- type element_t

    Object representing an element.

Variables

- integer(int32), parameter, public **year** = 2021

    Publication year.
- integer(c_int), bind(C, name="ciaaw_saw_YEAR"), public, protected **capi_year** = YEAR

    C API Publication year.
- type(element_t), parameter, public **h** =element_t("hydrogen", "H", 1, 1.00784d0, 1.00811d0, 1.00798d0, 0.↩
00008d0, 1.0080d0, 0.0002d0)

    hydrogen.
- type(capi_element_t), bind(C, name="ciaaw_saw_H"), public, protected **capi_h** =capi_element_t(["h","y","d","r","o","g","e","n",c↩
_null_char, " "," "," "," "," "," "," "," "," "," "," "," "," "," "," "," "," "," "," "], ["H",c_null_char, " "," "," "," "," "," "," "], H%z,
H%saw_max, H%saw_min, H%saw, H%saw_u, H%asaw, H%asaw_u)

C API hydrogen.

- type([element_t](), parameter, public **he** =[element_t]("helium", "He", 2, nan, nan, 4.002602d0, 0.000002d0, 4.↩
0026d0, 0.0001d0)

    helium.

- type([capi_element_t](), bind(C, name="ciaaw_saw_He"), public, protected **capi_he** =[capi_element_t](["h","e","l","i","u","m",c↩
_null_char, " "," "," "," "," "," "," "," "," "," "," "," "," "," "," "," "," "," "," "," "], ["H","e",c_null_char, " "," "," "," "," "," "],
He%z, He%saw_max, He%saw_min, He%saw, He%saw_u, He%asaw, He%asaw_u)

    C API helium.

- type([element_t](), parameter, public **li** =[element_t]("lithium", "Li", 3, 6.938d0, 6.997d0, 6.97d0, 0.02d0, 6.94d0,
0.06d0)

    lithium.

- type([capi_element_t](), bind(C, name="ciaaw_saw_Li"), public, protected **capi_li** =[capi_element_t](["l","i","t","h","i","u","m",c↩
_null_char, " "," "," "," "," "," "," "," "," "," "," "," "," "," "," "," "," "," "," "], ["L","i",c_null_char, " "," "," "," "," "," "], Li%z,
Li%saw_max, Li%saw_min, Li%saw, Li%saw_u, Li%asaw, Li%asaw_u)

    C API lithium.

- type([element_t](), parameter, public **be** =[element_t]("beryllium", "Be", 4, nan, nan, 9.0121831d0, 0.0000005d0,
9.0122d0, 0.00001d0)

    beryllium.

- type([capi_element_t](), bind(C, name="ciaaw_saw_Be"), public, protected **capi_be** =[capi_element_t](["b","e","r","y","l","l","i","u","n
_null_char, " "," "," "," "," "," "," "," "," "," "," "," "," "," "," "," "," "," "," "], ["B","e",c_null_char, " "," "," "," "," "," "], Be%z,
Be%saw_max, Be%saw_min, Be%saw, Be%saw_u, Be%asaw, Be%asaw_u)

    C API beryllium.

- type([element_t](), parameter, public **b** =[element_t]("boron", "B", 5, 10.806d0, 10.821d0, 10.813d0, 0.005d0,
10.81d0, 0.02d0)

    boron.

- type([capi_element_t](), bind(C, name="ciaaw_saw_B"), public, protected **capi_b** =[capi_element_t](["b","o","r","o","n",c↩
_null_char, " "," "," "," "," "," "," "," "," "," "," "," "," "," "," "," "," "," "," "," "], ["B",c_null_char, " "," "," "," "," "," "," "],
B%z, B%saw_max, B%saw_min, B%saw, B%saw_u, B%asaw, B%asaw_u)

    C API boron.

- type([element_t](), parameter, public **c** =[element_t]("carbon", "C", 6, 12.0096d0, 12.0116d0, 12.0106d0, 0.↩
0006d0, 12.011d0, 0.002d0)

    carbon.

- type([capi_element_t](), bind(C, name="ciaaw_saw_C"), public, protected **capi_c** =[capi_element_t](["c","a","r","b","o","n",c↩
_null_char, " "," "," "," "," "," "," "," "," "," "," "," "," "," "," "," "," "," "," "," "], ["C",c_null_char, " "," "," "," "," "," "," "], C%z,
C%saw_max, C%saw_min, C%saw, C%saw_u, C%asaw, C%asaw_u)

    C API carbon.

- type([element_t](), parameter, public **n** =[element_t]("nitrogen", "N", 7, 14.00643d0, 14.00728d0, 14.0069d0,
0.0003d0, 14.007d0, 0.001d0)

    nitrogen.

- type([capi_element_t](), bind(C, name="ciaaw_saw_N"), public, protected **capi_n** =[capi_element_t](["n","i","t","r","o","g","e","n",c↩
_null_char, " "," "," "," "," "," "," "," "," "," "," "," "," "," "," "," "," "," "], ["N",c_null_char, " "," "," "," "," "," "," "], N%z,
N%saw_max, N%saw_min, N%saw, N%saw_u, N%asaw, N%asaw_u)

    C API nitrogen.

- type([element_t](), parameter, public **o** =[element_t]("oxygen", "O", 8, 15.99903d0, 15.99977d0, 15.9994d0, 0.↩
0003d0, 15.999d0, 0.001d0)

    oxygen.

- type([capi_element_t](), bind(C, name="ciaaw_saw_O"), public, protected **capi_o** =[capi_element_t](["o","x","y","g","e","n",c↩
_null_char, " "," "," "," "," "," "," "," "," "," "," "," "," "," "," "," "," "," "," "," "], ["O",c_null_char, " "," "," "," "," "," "," "],
O%z, O%saw_max, O%saw_min, O%saw, O%saw_u, O%asaw, O%asaw_u)

    C API oxygen.

- type([element_t](), parameter, public **f** =[element_t]("fluorine", "F", 9, nan, nan, 18.998403162d0, 0.↩
000000005d0, 18.998d0, 0.001d0)

    fluorine.

- type([capi_element_t](#)), bind(C, name="ciaaw_saw_F"), public, protected **capi_f** =[capi_element_t](#)(["f","l","u","o","r","i","n","e",c↩
  _null_char, " "," "," "," "," "," "," "," "," "," "," "," "," "," "," "," " "], ["F",c_null_char, " "," "," "," "," "," " "], F%z,
  F%saw_max, F%saw_min, F%saw, F%saw_u, F%asaw, F%asaw_u)

  C API fluorine.

- type([element_t](#)), parameter, public **ne** =[element_t](#)("neon", "Ne", 10, nan, nan, 20.1797d0, 0.0006d0, 20.↩
  180d0, 0.001d0)

  neon.

- type([capi_element_t](#)), bind(C, name="ciaaw_saw_Ne"), public, protected **capi_ne** =[capi_element_t](#)(["n","e","o","n",c↩
  _null_char, " "," "," "," "," "," "," "," "," "," "," "," "," "," "," "," "," "," "," " "], ["N","e",c_null_char, " "," "," "," "," " "],
  Ne%z, Ne%saw_max, Ne%saw_min, Ne%saw, Ne%saw_u, Ne%asaw, Ne%asaw_u)

  C API neon.

- type([element_t](#)), parameter, public **na** =[element_t](#)("sodium", "Na", 11, nan, nan, 22.98976928d0, 0.↩
  00000002d0, 22.990d0, 0.001d0)

  sodium.

- type([capi_element_t](#)), bind(C, name="ciaaw_saw_Na"), public, protected **capi_na** =[capi_element_t](#)(["s","o","d","i","u","m",c↩
  _null_char, " "," "," "," "," "," "," "," "," "," "," "," "," "," "," "," " "], ["N","a",c_null_char, " "," "," "," "," " "],
  Na%z, Na%saw_max, Na%saw_min, Na%saw, Na%saw_u, Na%asaw, Na%asaw_u)

  C API sodium.

- type([element_t](#)), parameter, public **mg** =[element_t](#)("magnesium", "Mg", 12, 24.304d0, 24.307d0, 24.3055d0,
  0.0009d0, 24.305d0, 0.002d0)

  magnesium.

- type([capi_element_t](#)), bind(C, name="ciaaw_saw_Mg"), public, protected **capi_mg** =[capi_element_t](#)(["m","a","g","n","e","s","i","u
  _null_char, " "," "," "," "," "," "," "," "," "," "," "," "," "," " "], ["M","g",c_null_char, " "," "," "," "," " "], Mg%z,
  Mg%saw_max, Mg%saw_min, Mg%saw, Mg%saw_u, Mg%asaw, Mg%asaw_u)

  C API magnesium.

- type([element_t](#)), parameter, public **al** =[element_t](#)("aluminium", "Al", 13, nan, nan, 26.9815384d0, 0.↩
  0000003d0, 26.982d0, 0.001d0)

  aluminium.

- type([capi_element_t](#)), bind(C, name="ciaaw_saw_Al"), public, protected **capi_al** =[capi_element_t](#)(["a","l","u","m","i","n","i","u","m
  _null_char, " "," "," "," "," "," "," "," "," "," "," "," "," "," " "], ["A","l",c_null_char, " "," "," "," "," " "], Al%z,
  Al%saw_max, Al%saw_min, Al%saw, Al%saw_u, Al%asaw, Al%asaw_u)

  C API aluminium.

- type([element_t](#)), parameter, public **si** =[element_t](#)("silicon", "Si", 14, 28.084d0, 28.086d0, 28.0850d0, 0.↩
  0006d0, 28.085d0, 0.001d0)

  silicon.

- type([capi_element_t](#)), bind(C, name="ciaaw_saw_Si"), public, protected **capi_si** =[capi_element_t](#)(["s","i","l","i","c","o","n",c↩
  _null_char, " "," "," "," "," "," "," "," "," "," "," "," "," "," "," "," " "], ["S","i",c_null_char, " "," "," "," "," " "], Si%z,
  Si%saw_max, Si%saw_min, Si%saw, Si%saw_u, Si%asaw, Si%asaw_u)

  C API silicon.

- type([element_t](#)), parameter, public **p** =[element_t](#)("phosphorous", "P", 15, nan, nan, 30.973761998d0, 0.↩
  000000005d0, 30.974d0, 0.001d0)

  phosphorous.

- type([capi_element_t](#)), bind(C, name="ciaaw_saw_P"), public, protected **capi_p** =[capi_element_t](#)(["p","h","o","s","p","h","o","r","o
  _null_char, " "," "," "," "," "," "," "," "," "," "," "," "," " "], ["P",c_null_char, " "," "," "," "," "," " "], P%z, P%saw_max,
  P%saw_min, P%saw, P%saw_u, P%asaw, P%asaw_u)

  C API phosphorous.

- type([element_t](#)), parameter, public **s** =[element_t](#)("sulfur", "S", 16, 32.059d0, 32.076d0, 32.067d0, 0.005d0,
  32.06d0, 0.02d0)

  sulfur.

- type([capi_element_t](#)), bind(C, name="ciaaw_saw_S"), public, protected **capi_s** =[capi_element_t](#)(["s","u","l","f","u","r",c↩
  _null_char, " "," "," "," "," "," "," "," "," "," "," "," "," "," "," "," "," "," " "], ["S",c_null_char, " "," "," "," "," "," " "], S%z,
  S%saw_max, S%saw_min, S%saw, S%saw_u, S%asaw, S%asaw_u)

  C API sulfur.

- type([element_t](#)), parameter, public **cl** =[element_t](#)("chlorine", "Cl", 17, 35.446d0, 35.457d0, 35.451d0, 0.↩ 004d0, 35.45d0, 0.01d0)

    chlorine.

- type([capi_element_t](#)), bind(C, name="ciaaw_saw_Cl"), public, protected **capi_cl** =[capi_element_t](#)(["c","h","l","o","r","i","n","e",c↩ _null_char, " "," "," "," "," "," "," "," "," "," "," "," "," "," "," "], ["C","l",c_null_char, " "," "," "," "," "," "], Cl%z, Cl%saw_max, Cl%saw_min, Cl%saw, Cl%saw_u, Cl%asaw, Cl%asaw_u)

    C API chlorine.

- type([element_t](#)), parameter, public **ar** =[element_t](#)("argon", "Ar", 18, 39.792d0, 39.963d0, 39.88d0, 0.05d0, 39.95d0, 0.16d0)

    argon.

- type([capi_element_t](#)), bind(C, name="ciaaw_saw_Ar"), public, protected **capi_ar** =[capi_element_t](#)(["a","r","g","o","n",c↩ _null_char, " "," "," "," "," "," "," "," "," "," "," "," "," "," "," "], ["A","r",c_null_char, " "," "," "," "," "," "], Ar%z, Ar%saw_max, Ar%saw_min, Ar%saw, Ar%saw_u, Ar%asaw, Ar%asaw_u)

    C API argon.

- type([element_t](#)), parameter, public **k** =[element_t](#)("potassium", "K", 19, nan, nan, 39.0983d0, 0.0001d0, 39.↩ 098d0, 0.001d0)

    potassium.

- type([capi_element_t](#)), bind(C, name="ciaaw_saw_K"), public, protected **capi_k** =[capi_element_t](#)(["p","o","t","a","s","s","i","u","m" _null_char, " "," "," "," "," "," "," "," "," "," "," "," "," "," "," "], ["K",c_null_char, " "," "," "," "," "," "," "], K%z, K%saw_max, K%saw_min, K%saw, K%saw_u, K%asaw, K%asaw_u)

    C API potassium.

- type([element_t](#)), parameter, public **ca** =[element_t](#)("calcium", "Ca", 20, nan, nan, 40.078d0, 0.004d0, 40.↩ 078d0, 0.004d0)

    calcium.

- type([capi_element_t](#)), bind(C, name="ciaaw_saw_Ca"), public, protected **capi_ca** =[capi_element_t](#)(["c","a","l","c","i","u","m",c↩ _null_char, " "," "," "," "," "," "," "," "," "," "," "," "," "," "," "], ["C","a",c_null_char, " "," "," "," "," "," "], Ca%z, Ca%saw_max, Ca%saw_min, Ca%saw, Ca%saw_u, Ca%asaw, Ca%asaw_u)

    C API calcium.

- type([element_t](#)), parameter, public **sc** =[element_t](#)("scandium", "Sc", 21, nan, nan, 44.955907d0, 0.000004d0, 44.956d0, 0.001d0)

    scandium.

- type([capi_element_t](#)), bind(C, name="ciaaw_saw_Sc"), public, protected **capi_sc** =[capi_element_t](#)(["s","c","a","n","d","i","u","m" _null_char, " "," "," "," "," "," "," "," "," "," "," "," "," "," "," "], ["S","c",c_null_char, " "," "," "," "," "," "], Sc%z, Sc%saw_max, Sc%saw_min, Sc%saw, Sc%saw_u, Sc%asaw, Sc%asaw_u)

    C API scandium.

- type([element_t](#)), parameter, public **ti** =[element_t](#)("titanium", "Ti", 22, nan, nan, 47.867d0, 0.001d0, 47.867d0, 0.001d0)

    titanium.

- type([capi_element_t](#)), bind(C, name="ciaaw_saw_Ti"), public, protected **capi_ti** =[capi_element_t](#)(["t","i","t","a","n","i","u","m",c↩ _null_char, " "," "," "," "," "," "," "," "," "," "," "," "," "," "," "], ["T","i",c_null_char, " "," "," "," "," "," "], Ti%z, Ti%saw_max, Ti%saw_min, Ti%saw, Ti%saw_u, Ti%asaw, Ti%asaw_u)

    C API titanium.

- type([element_t](#)), parameter, public **v** =[element_t](#)("vanadium", "V", 23, nan, nan, 50.9415d0, 0.0001d0, 50.↩ 942d0, 0.001d0)

    vanadium.

- type([capi_element_t](#)), bind(C, name="ciaaw_saw_V"), public, protected **capi_v** =[capi_element_t](#)(["v","a","n","a","d","i","u","m",c↩ _null_char, " "," "," "," "," "," "," "," "," "," "," "," "," "," "," "], ["V",c_null_char, " "," "," "," "," "," "," "], V%z, V%saw_max, V%saw_min, V%saw, V%saw_u, V%asaw, V%asaw_u)

    C API vanadium.

- type([element_t](#)), parameter, public **cr** =[element_t](#)("chromium", "Cr", 24, nan, nan, 51.9961d0, 0.0006d0, 51.996d0, 0.001d0)

    chromium.

- type(capi_element_t), bind(C, name="ciaaw_saw_Cr"), public, protected **capi_cr** =capi_element_t(["c","h","r","o","m","i","u","m",
  _null_char, " "," "," "," "," "," "," "," "," "," "," "," "," "," "," "," "], ["C","r",c_null_char, " "," "," "," "," "," "], Cr%z,
  Cr%saw_max, Cr%saw_min, Cr%saw, Cr%saw_u, Cr%asaw, Cr%asaw_u)

  C API chromium.
- type(element_t), parameter, public **mn** =element_t("manganese", "Mn", 25, nan, nan, 54.938043d0, 0.↩
  000002d0, 54.938d0, 0.001d0)

  manganese.
- type(capi_element_t), bind(C, name="ciaaw_saw_Mn"), public, protected **capi_mn** =capi_element_t(["m","a","n","g","a","n","e",
  _null_char, " "," "," "," "," "," "," "," "," "," "," "," "," "," "," "," "], ["M","n",c_null_char, " "," "," "," "," "," "], Mn%z,
  Mn%saw_max, Mn%saw_min, Mn%saw, Mn%saw_u, Mn%asaw, Mn%asaw_u)

  C API manganese.
- type(element_t), parameter, public **fe** =element_t("iron", "Fe", 26, nan, nan, 55.845d0, 0.002d0, 55.845d0,
  0.002d0)

  iron.
- type(capi_element_t), bind(C, name="ciaaw_saw_Fe"), public, protected **capi_fe** =capi_element_t(["i","r","o","n",c↩
  _null_char, " "," "], ["F","e",c_null_char, " "," "," "," "," "," "],
  Fe%z, Fe%saw_max, Fe%saw_min, Fe%saw, Fe%saw_u, Fe%asaw, Fe%asaw_u)

  C API iron.
- type(element_t), parameter, public **co** =element_t("cobalt", "Co", 27, nan, nan, 58.933194d0, 0.000003d0,
  58.933d0, 0.001d0)

  cobalt.
- type(capi_element_t), bind(C, name="ciaaw_saw_Co"), public, protected **capi_co** =capi_element_t(["c","o","b","a","l","t",c↩
  _null_char, " "," "," "," "," "," "," "," "," "," "," "," "," "," "," "," "], ["C","o",c_null_char, " "," "," "," "," "," "],
  Co%z, Co%saw_max, Co%saw_min, Co%saw, Co%saw_u, Co%asaw, Co%asaw_u)

  C API cobalt.
- type(element_t), parameter, public **ni** =element_t("nickel", "Ni", 28, nan, nan, 58.6934d0, 0.0004d0, 58.↩
  693d0, 0.001d0)

  nickel.
- type(capi_element_t), bind(C, name="ciaaw_saw_Ni"), public, protected **capi_ni** =capi_element_t(["n","i","c","k","e","l",c↩
  _null_char, " "," "," "," "," "," "," "," "," "," "," "," "," "," "," "," "," "," "," "], ["N","i",c_null_char, " "," "," "," "," "," "], Ni%z,
  Ni%saw_max, Ni%saw_min, Ni%saw, Ni%saw_u, Ni%asaw, Ni%asaw_u)

  C API nickel.
- type(element_t), parameter, public **cu** =element_t("copper", "Cu", 29, nan, nan, 63.546d0, 0.003d0, 63.↩
  546d0, 0.003d0)

  copper.
- type(capi_element_t), bind(C, name="ciaaw_saw_Cu"), public, protected **capi_cu** =capi_element_t(["c","o","p","p","e","r",c↩
  _null_char, " "," "," "," "," "," "," "," "," "," "," "," "," "," "," "," "," "," "," "," "], ["C","u",c_null_char, " "," "," "," "," "," "],
  Cu%z, Cu%saw_max, Cu%saw_min, Cu%saw, Cu%saw_u, Cu%asaw, Cu%asaw_u)

  C API copper.
- type(element_t), parameter, public **zn** =element_t("zinc", "Zn", 30, nan, nan, 65.38d0, 0.02d0, 65.38d0, 0.↩
  02d0)

  zinc.
- type(capi_element_t), bind(C, name="ciaaw_saw_Zn"), public, protected **capi_zn** =capi_element_t(["z","i","n","c",c↩
  _null_char, " "," "," "," "," "," "," "," "," "," "," "," "," "," "," "," "," "," "," "," "], ["Z","n",c_null_char, " "," "," "," "," "," "],
  Zn%z, Zn%saw_max, Zn%saw_min, Zn%saw, Zn%saw_u, Zn%asaw, Zn%asaw_u)

  C API zinc.
- type(element_t), parameter, public **ga** =element_t("gallium", "Ga", 31, nan, nan, 69.723d0, 0.001d0, 69.↩
  723d0, 0.001d0)

  gallium.
- type(capi_element_t), bind(C, name="ciaaw_saw_Ga"), public, protected **capi_ga** =capi_element_t(["g","a","l","l","i","u","m",c↩
  _null_char, " "," "," "," "," "," "," "," "," "," "," "," "," "," "," "," "," "], ["G","a",c_null_char, " "," "," "," "," "," "], Ga%z,
  Ga%saw_max, Ga%saw_min, Ga%saw, Ga%saw_u, Ga%asaw, Ga%asaw_u)

  C API gallium.

- type(element_t), parameter, public **ge** =element_t("germanium", "Ge", 32, nan, nan, 72.630d0, 0.008d0, 72.630d0, 0.008d0)

    germanium.
- type(capi_element_t), bind(C, name="ciaaw_saw_Ge"), public, protected **capi_ge** =capi_element_t(["g","e","r","m","a","n","i","u" _null_char, " "," "," "," "," "," "," "," "," "," "," "," "," "," "," " "], ["G","e",c_null_char, " "," "," "," "," "," " "], Ge%z, Ge%saw_max, Ge%saw_min, Ge%saw, Ge%saw_u, Ge%asaw, Ge%asaw_u)

    C API germanium.
- type(element_t), parameter, public **as** =element_t("arsenic", "As", 33, nan, nan, 74.921595d0, 0.000006d0, 74.922d0, 0.001d0)

    arsenic.
- type(capi_element_t), bind(C, name="ciaaw_saw_As"), public, protected **capi_as** =capi_element_t(["a","r","s","e","n","i","c",c←↩ _null_char, " "," "," "," "," "," "," "," "," "," "," "," "," "," "," " "], ["A","s",c_null_char, " "," "," "," "," "," " "], As%z, As%saw_max, As%saw_min, As%saw, As%saw_u, As%asaw, As%asaw_u)

    C API arsenic.
- type(element_t), parameter, public **se** =element_t("selenium", "Se", 34, nan, nan, 78.971d0, 0.008d0, 78.←↩ 971d0, 0.008d0)

    selenium.
- type(capi_element_t), bind(C, name="ciaaw_saw_Se"), public, protected **capi_se** =capi_element_t(["s","e","l","e","n","i","u","m", _null_char, " "," "," "," "," "," "," "," "," "," "," "," "," "," "," " "], ["S","e",c_null_char, " "," "," "," "," "," " "], Se%z, Se%saw_max, Se%saw_min, Se%saw, Se%saw_u, Se%asaw, Se%asaw_u)

    C API selenium.
- type(element_t), parameter, public **br** =element_t("bromine", "Br", 35, 79.901d0, 79.907d0, 79.904d0, 0.←↩ 002d0, 79.904d0, 0.003d0)

    bromine.
- type(capi_element_t), bind(C, name="ciaaw_saw_Br"), public, protected **capi_br** =capi_element_t(["b","r","o","m","i","n","e",c←↩ _null_char, " "," "," "," "," "," "," "," "," "," "," "," "," "," "," " "], ["B","r",c_null_char, " "," "," "," "," "," " "], Br%z, Br%saw_max, Br%saw_min, Br%saw, Br%saw_u, Br%asaw, Br%asaw_u)

    C API bromine.
- type(element_t), parameter, public **kr** =element_t("krypton", "Kr", 36, nan, nan, 83.798d0, 0.002d0, 83.798d0, 0.002d0)

    krypton.
- type(capi_element_t), bind(C, name="ciaaw_saw_Kr"), public, protected **capi_kr** =capi_element_t(["k","r","y","p","t","o","n",c←↩ _null_char, " "," "," "," "," "," "," "," "," "," "," "," "," "," "," " "], ["K","r",c_null_char, " "," "," "," "," "," " "], Kr%z, Kr%saw_max, Kr%saw_min, Kr%saw, Kr%saw_u, Kr%asaw, Kr%asaw_u)

    C API krypton.
- type(element_t), parameter, public **rb** =element_t("rubidium", "Rb", 37, nan, nan, 85.4678d0, 0.0003d0, 85.←↩ 468d0, 0.001d0)

    rubidium.
- type(capi_element_t), bind(C, name="ciaaw_saw_Rb"), public, protected **capi_rb** =capi_element_t(["r","u","b","i","d","i","u","m",c←↩ _null_char, " "," "," "," "," "," "," "," "," "," "," "," "," "," "," " "], ["R","b",c_null_char, " "," "," "," "," "," " "], Rb%z, Rb%saw_max, Rb%saw_min, Rb%saw, Rb%saw_u, Rb%asaw, Rb%asaw_u)

    C API rubidium.
- type(element_t), parameter, public **sr** =element_t("strontium", "Sr", 38, nan, nan, 87.62d0, 0.01d0, 87.62d0, 0.01d0)

    strontium.
- type(capi_element_t), bind(C, name="ciaaw_saw_Sr"), public, protected **capi_sr** =capi_element_t(["s","t","r","o","n","t","i","u","m _null_char, " "," "," "," "," "," "," "," "," "," "," "," "," "," "," " "], ["S","r",c_null_char, " "," "," "," "," "," " "], Sr%z, Sr%saw_max, Sr%saw_min, Sr%saw, Sr%saw_u, Sr%asaw, Sr%asaw_u)

    C API strontium.
- type(element_t), parameter, public **y** =element_t("yttrium", "Y", 39, nan, nan, 88.905838d0, 0.000002d0, 88.906d0, 0.001d0)

    yttrium.

- type(capi_element_t), bind(C, name="ciaaw_saw_Y"), public, protected **capi_y** =capi_element_t(["y","t","t","r","i","u","m",c↵
  _null_char, " "," "," "," "," "," "," "," "," "," "," "," "," "," "," "," "," "," "," "], ["Y",c_null_char, " "," "," "," "," "," "], Y%z,
  Y%saw_max, Y%saw_min, Y%saw, Y%saw_u, Y%asaw, Y%asaw_u)

    C API yttrium.
- type(element_t), parameter, public **zr** =element_t("zirconium", "Zr", 40, nan, nan, 91.224d0, 0.002d0, 91.↵
  224d0, 0.002d0)

    zirconium.
- type(capi_element_t), bind(C, name="ciaaw_saw_Zr"), public, protected **capi_zr** =capi_element_t(["z","i","r","c","o","n","i","u","m
  _null_char, " "," "," "," "," "," "," "," "," "," "," "," "," "," "," "], ["Z","r",c_null_char, " "," "," "," "," "], Zr%z,
  Zr%saw_max, Zr%saw_min, Zr%saw, Zr%saw_u, Zr%asaw, Zr%asaw_u)

    C API zirconium.
- type(element_t), parameter, public **nb** =element_t("nobium", "Nb", 41, nan, nan, 92.90637d0, 0.00001d0,
  92.906d0, 0.001d0)

    nobium.
- type(capi_element_t), bind(C, name="ciaaw_saw_Nb"), public, protected **capi_nb** =capi_element_t(["n","o","b","i","u","m",c↵
  _null_char, " "," "," "," "," "," "," "," "," "," "," "," "," "," "," "," "," "], ["N","b",c_null_char, " "," "," "," "," "," "],
  Nb%z, Nb%saw_max, Nb%saw_min, Nb%saw, Nb%saw_u, Nb%asaw, Nb%asaw_u)

    C API nobium.
- type(element_t), parameter, public **mo** =element_t("molybdenum", "Mo", 42, nan, nan, 95.95d0, 0.01d0,
  95.95d0, 0.01d0)

    molybdenum.
- type(capi_element_t), bind(C, name="ciaaw_saw_Mo"), public, protected **capi_mo** =capi_element_t(["m","o","l","y","b","d","e","r
  _null_char, " "," "," "," "," "," "," "," "," "," "," "," "," "," "," "], ["M","o",c_null_char, " "," "," "," "," "], Mo%z,
  Mo%saw_max, Mo%saw_min, Mo%saw, Mo%saw_u, Mo%asaw, Mo%asaw_u)

    C API molybdenum.
- type(element_t), parameter, public **tc** =element_t("technetium", "Tc", 43, nan, nan, nan, nan, nan, nan)

    technetium.
- type(capi_element_t), bind(C, name="ciaaw_saw_Tc"), public, protected **capi_tc** =capi_element_t(["t","e","c","h","n","e","t","i","u
  _null_char, " "," "," "," "," "," "," "," "," "," "," "," "," "," "], ["T","c",c_null_char, " "," "," "," "," "], Tc%z,
  Tc%saw_max, Tc%saw_min, Tc%saw, Tc%saw_u, Tc%asaw, Tc%asaw_u)

    C API technetium.
- type(element_t), parameter, public **ru** =element_t("ruthenium", "Ru", 44, nan, nan, 101.07d0, 0.02d0, 101.↵
  07d0, 0.02d0)

    ruthenium.
- type(capi_element_t), bind(C, name="ciaaw_saw_Ru"), public, protected **capi_ru** =capi_element_t(["r","u","t","h","e","n","i","u","
  _null_char, " "," "," "," "," "," "," "," "," "," "," "," "," "," "," "], ["R","u",c_null_char, " "," "," "," "," "], Ru%z,
  Ru%saw_max, Ru%saw_min, Ru%saw, Ru%saw_u, Ru%asaw, Ru%asaw_u)

    C API ruthenium.
- type(element_t), parameter, public **rh** =element_t("rhodium", "Rh", 45, nan, nan, 102.90549d0, 0.00002d0,
  102.91d0, 0.01d0)

    rhodium.
- type(capi_element_t), bind(C, name="ciaaw_saw_Rh"), public, protected **capi_rh** =capi_element_t(["r","h","o","d","i","u","m",c↵
  _null_char, " "," "," "," "," "," "," "," "," "," "," "," "," "," "," "," "," "," "," "], ["R","h",c_null_char, " "," "," "," "," "," "],
  Rh%z, Rh%saw_max, Rh%saw_min, Rh%saw, Rh%saw_u, Rh%asaw, Rh%asaw_u)

    C API rhodium.
- type(element_t), parameter, public **pd** =element_t("palladium", "Pd", 46, nan, nan, 106.42d0, 0.01d0, 106.↵
  42d0, 0.01d0)

    palladium.
- type(capi_element_t), bind(C, name="ciaaw_saw_Pd"), public, protected **capi_pd** =capi_element_t(["p","a","l","l","a","d","i","u","
  _null_char, " "," "," "," "," "," "," "," "," "," "," "," "," "," "," "], ["P","d",c_null_char, " "," "," "," "," "," "], Pd%z,
  Pd%saw_max, Pd%saw_min, Pd%saw, Pd%saw_u, Pd%asaw, Pd%asaw_u)

    C API palladium.
- type(element_t), parameter, public **ag** =element_t("silver", "Ag", 47, nan, nan, 107.8682d0, 0.0002d0, 107.↵
  87d0, 0.01d0)

silver.

- type(capi_element_t), bind(C, name="ciaaw_saw_Ag"), public, protected **capi_ag** =capi_element_t(["s","i","l","v","e","r",c↩
_null_char, " "," "," "," "," "," "," "," "," "," "," "," "," "," "," "," "," "," "], ["A","g",c_null_char, " "," "," "," "," "," "],
Ag%z, Ag%saw_max, Ag%saw_min, Ag%saw, Ag%saw_u, Ag%asaw, Ag%asaw_u)

  C API silver.

- type(element_t), parameter, public **cd** =element_t("cadmium", "Cd", 48, nan, nan, 112.414d0, 0.004d0,
112.41d0, 0.01d0)

  cadmium.

- type(capi_element_t), bind(C, name="ciaaw_saw_Cd"), public, protected **capi_cd** =capi_element_t(["c","a","d","m","i","u","m",c↩
_null_char, " "," "," "," "," "," "," "," "," "," "," "," "," "," "," "," "," "," "], ["C","d",c_null_char, " "," "," "," "," "," "], Cd%z,
Cd%saw_max, Cd%saw_min, Cd%saw, Cd%saw_u, Cd%asaw, Cd%asaw_u)

  C API cadmium.

- type(element_t), parameter, public **in** =element_t("indium", "In", 49, nan, nan, 114.818d0, 0.001d0, 114.82d0,
0.01d0)

  indium.

- type(capi_element_t), bind(C, name="ciaaw_saw_In"), public, protected **capi_in** =capi_element_t(["i","n","d","i","u","m",c↩
_null_char, " "," "," "," "," "," "," "," "," "," "," "," "," "," "," "," "," "," "], ["I","n",c_null_char, " "," "," "," "," "," "], In%z,
In%saw_max, In%saw_min, In%saw, In%saw_u, In%asaw, In%asaw_u)

  C API indium.

- type(element_t), parameter, public **sn** =element_t("tin", "Sn", 50, nan, nan, 118.70d0, 0.007d0, 118.71d0,
0.01d0)

  tin.

- type(capi_element_t), bind(C, name="ciaaw_saw_Sn"), public, protected **capi_sn** =capi_element_t(["t","i","n",c↩
_null_char, " "," "], ["S","n",c_null_char, " "," "," "," "," "," "
"], Sn%z, Sn%saw_max, Sn%saw_min, Sn%saw, Sn%saw_u, Sn%asaw, Sn%asaw_u)

  C API tin.

- type(element_t), parameter, public **sb** =element_t("antimony", "Sb", 51, nan, nan, 121.760d0, 0.001d0,
121.76d0, 0.01d0)

  antimony.

- type(capi_element_t), bind(C, name="ciaaw_saw_Sb"), public, protected **capi_sb** =capi_element_t(["a","n","t","i","m","o","n","y",
_null_char, " "," "," "," "," "," "," "," "," "," "," "," "," "," "," "," "," "," "], ["S","b",c_null_char, " "," "," "," "," "," "], Sb%z,
Sb%saw_max, Sb%saw_min, Sb%saw, Sb%saw_u, Sb%asaw, Sb%asaw_u)

  C API antimony.

- type(element_t), parameter, public **te** =element_t("tellurium", "Te", 52, nan, nan, 127.60d0, 0.03d0, 127.60d0,
0.03d0)

  tellurium.

- type(capi_element_t), bind(C, name="ciaaw_saw_Te"), public, protected **capi_te** =capi_element_t(["t","e","l","l","u","r","i","u","m"
_null_char, " "," "," "," "," "," "," "," "," "," "," "," "," "," "," "," "," "], ["T","e",c_null_char, " "," "," "," "," "," "], Te%z,
Te%saw_max, Te%saw_min, Te%saw, Te%saw_u, Te%asaw, Te%asaw_u)

  C API tellurium.

- type(element_t), parameter, public **i** =element_t("iodine", "I", 53, nan, nan, 126.90447d0, 0.00003d0, 126.↩
90d0, 0.01d0)

  iodine.

- type(capi_element_t), bind(C, name="ciaaw_saw_I"), public, protected **capi_i** =capi_element_t(["i","o","d","i","n","e",c↩
_null_char, " "," "," "," "," "," "," "," "," "," "," "," "," "," "," "," "," "," "], ["I",c_null_char, " "," "," "," "," "," "," "], I%z,
I%saw_max, I%saw_min, I%saw, I%saw_u, I%asaw, I%asaw_u)

  C API iodine.

- type(element_t), parameter, public **xe** =element_t("xenon", "Xe", 54, nan, nan, 131.293d0, 0.006d0, 131.↩
29d0, 0.01d0)

  xenon.

- type(capi_element_t), bind(C, name="ciaaw_saw_Xe"), public, protected **capi_xe** =capi_element_t(["x","e","n","o","n",c↩
_null_char, " "," "," "," "," "," "," "," "," "," "," "," "," "," "," "," "," "," "], ["X","e",c_null_char, " "," "," "," "," "," "],
Xe%z, Xe%saw_max, Xe%saw_min, Xe%saw, Xe%saw_u, Xe%asaw, Xe%asaw_u)

  C API xenon.

- type(element_t), parameter, public **cs** =element_t("caesium", "Cs", 55, nan, nan, 132.90545196d0, 0.↩
  00000006d0, 132.91d0, 0.01d0)

  caesium.
- type(capi_element_t), bind(C, name="ciaaw_saw_Cs"), public, protected **capi_cs** =capi_element_t(["c","a","e","s","i","u","m",c↩
  _null_char, " "," " "], ["C","s",c_null_char, " "," "," "," "," "," "], Cs%z,
  Cs%saw_max, Cs%saw_min, Cs%saw, Cs%saw_u, Cs%asaw, Cs%asaw_u)

  C API caesium.
- type(element_t), parameter, public **ba** =element_t("barium", "Ba", 56, nan, nan, 137.327d0, 0.007d0, 137.↩
  33d0, 0.01d0)

  barium.
- type(capi_element_t), bind(C, name="ciaaw_saw_Ba"), public, protected **capi_ba** =capi_element_t(["b","a","r","i","u","m",c↩
  _null_char, " "," " "], ["B","a",c_null_char, " "," "," "," "," "," "],
  Ba%z, Ba%saw_max, Ba%saw_min, Ba%saw, Ba%saw_u, Ba%asaw, Ba%asaw_u)

  C API barium.
- type(element_t), parameter, public **la** =element_t("lanthanum", "La", 57, nan, nan, 138.90547d0, 0.00007d0,
  138.91d0, 0.01d0)

  lanthanum.
- type(capi_element_t), bind(C, name="ciaaw_saw_La"), public, protected **capi_la** =capi_element_t(["l","a","n","t","h","a","n","u","↩
  _null_char, " "," "," "," "," "," "," "," "," "," "," "," "," "," "," "," " "], ["L","a",c_null_char, " "," "," "," "," "," "], La%z,
  La%saw_max, La%saw_min, La%saw, La%saw_u, La%asaw, La%asaw_u)

  C API lanthanum.
- type(element_t), parameter, public **ce** =element_t("cerium", "Ce", 58, nan, nan, 140.116d0, 0.001d0, 140.↩
  12d0, 0.01d0)

  cerium.
- type(capi_element_t), bind(C, name="ciaaw_saw_Ce"), public, protected **capi_ce** =capi_element_t(["c","e","r","i","u","m",c↩
  _null_char, " "," " "], ["C","e",c_null_char, " "," "," "," "," "," "],
  Ce%z, Ce%saw_max, Ce%saw_min, Ce%saw, Ce%saw_u, Ce%asaw, Ce%asaw_u)

  C API cerium.
- type(element_t), parameter, public **pr** =element_t("praseodymium", "Pr", 59, nan, nan, 140.90766d0, 0.↩
  00001d0, 140.91d0, 0.01d0)

  praseodymium.
- type(capi_element_t), bind(C, name="ciaaw_saw_Pr"), public, protected **capi_pr** =capi_element_t(["p","r","a","s","e","o","d","y",
  _null_char, " "," "," "," "," "," "," "," "," "," "," "," "," "," "," " "], ["P","r",c_null_char, " "," "," "," "," "," "], Pr%z, Pr%saw_max,
  Pr%saw_min, Pr%saw, Pr%saw_u, Pr%asaw, Pr%asaw_u)

  C API praseodymium.
- type(element_t), parameter, public **nd** =element_t("neodymium", "Nd", 60, nan, nan, 144.242d0, 0.003d0,
  144.24d0, 0.01d0)

  neodymium.
- type(capi_element_t), bind(C, name="ciaaw_saw_Nd"), public, protected **capi_nd** =capi_element_t(["n","e","o","d","y","m","i","u",
  _null_char, " "," "," "," "," "," "," "," "," "," "," "," "," "," "," " "], ["N","d",c_null_char, " "," "," "," "," "," "], Nd%z,
  Nd%saw_max, Nd%saw_min, Nd%saw, Nd%saw_u, Nd%asaw, Nd%asaw_u)

  C API neodymium.
- type(element_t), parameter, public **pm** =element_t("promethium", "Pm", 61, nan, nan, nan, nan, nan, nan)

  promethium.
- type(capi_element_t), bind(C, name="ciaaw_saw_Pm"), public, protected **capi_pm** =capi_element_t(["p","r","o","m","e","t","h","i
  _null_char, " "," "," "," "," "," "," "," "," "," "," "," "," "," " "], ["P","m",c_null_char, " "," "," "," "," "," "], Pm%z,
  Pm%saw_max, Pm%saw_min, Pm%saw, Pm%saw_u, Pm%asaw, Pm%asaw_u)

  C API promethium.
- type(element_t), parameter, public **sm** =element_t("samarium", "Sm", 62, nan, nan, 150.36d0, 0.02d0, 150.↩
  36d0, 0.02d0)

  samarium.
- type(capi_element_t), bind(C, name="ciaaw_saw_Sm"), public, protected **capi_sm** =capi_element_t(["s","a","m","a","r","i","u","
  _null_char, " "," "," "," "," "," "," "," "," "," "," "," "," "," "," " "], ["S","m",c_null_char, " "," "," "," "," "," "], Sm%z,
  Sm%saw_max, Sm%saw_min, Sm%saw, Sm%saw_u, Sm%asaw, Sm%asaw_u)

C API samarium.

- type([element_t](#)), parameter, public **eu** =[element_t](#)("europium", "Eu", 63, nan, nan, 151.964d0, 0.001d0, 151.96d0, 0.01d0)

    europium.

- type([capi_element_t](#)), bind(C, name="ciaaw_saw_Eu"), public, protected **capi_eu** =[capi_element_t](#)(["e","u","r","o","p","i","u","m" _null_char, " "," "," "," "," "," "," "," "," "," "," "," "," "," "," "," "," "," "], ["E","u",c_null_char, " "," "," "," "," "," "], Eu%z, Eu%saw_max, Eu%saw_min, Eu%saw, Eu%saw_u, Eu%asaw, Eu%asaw_u)

    C API europium.

- type([element_t](#)), parameter, public **gd** =[element_t](#)("gadolinium", "Gd", 64, nan, nan, 157.25d0, 0.03d0, 157.↵ 25d0, 0.03d0)

    gadolinium.

- type([capi_element_t](#)), bind(C, name="ciaaw_saw_Gd"), public, protected **capi_gd** =[capi_element_t](#)(["g","a","d","o","l","i","n","i"," _null_char, " "," "," "," "," "," "," "," "," "," "," "," "," "," "], ["G","d",c_null_char, " "," "," "," "," "," "], Gd%z, Gd%saw_max, Gd%saw_min, Gd%saw, Gd%saw_u, Gd%asaw, Gd%asaw_u)

    C API gadolinium.

- type([element_t](#)), parameter, public **tb** =[element_t](#)("terbium", "Tb", 65, nan, nan, 158.925354d0, 0.000007d0, 158.93d0, 0.01d0)

    terbium.

- type([capi_element_t](#)), bind(C, name="ciaaw_saw_Tb"), public, protected **capi_tb** =[capi_element_t](#)(["t","e","r","b","i","u","m",c↵ _null_char, " "," "," "," "," "," "," "," "," "," "," "," "," "," "," "," "," "], ["T","b",c_null_char, " "," "," "," "," "," "], Tb%z, Tb%saw_max, Tb%saw_min, Tb%saw, Tb%saw_u, Tb%asaw, Tb%asaw_u)

    C API terbium.

- type([element_t](#)), parameter, public **dy** =[element_t](#)("dysprosium", "Dy", 66, nan, nan, 162.500d0, 0.001d0, 162.50d0, 0.01d0)

    dysprosium.

- type([capi_element_t](#)), bind(C, name="ciaaw_saw_Dy"), public, protected **capi_dy** =[capi_element_t](#)(["d","y","s","p","r","o","s","i"," _null_char, " "," "," "," "," "," "," "," "," "," "," "," "," "," "], ["D","y",c_null_char, " "," "," "," "," "," "], Dy%z, Dy%saw_max, Dy%saw_min, Dy%saw, Dy%saw_u, Dy%asaw, Dy%asaw_u)

    C API dysprosium.

- type([element_t](#)), parameter, public **ho** =[element_t](#)("holmium", "Ho", 67, nan, nan, 164.930329d0, 0.↵ 000005d0, 164.93d0, 0.01d0)

    holmium.

- type([capi_element_t](#)), bind(C, name="ciaaw_saw_Ho"), public, protected **capi_ho** =[capi_element_t](#)(["h","o","l","m","i","u","m",c↵ _null_char, " "," "," "," "," "," "," "," "," "," "," "," "," "," "," "," "," "], ["H","o",c_null_char, " "," "," "," "," "," "], Ho%z, Ho%saw_max, Ho%saw_min, Ho%saw, Ho%saw_u, Ho%asaw, Ho%asaw_u)

    C API holmium.

- type([element_t](#)), parameter, public **er** =[element_t](#)("erbium", "Er", 68, nan, nan, 167.259d0, 0.003d0, 167.↵ 26d0, 0.01d0)

    erbium.

- type([capi_element_t](#)), bind(C, name="ciaaw_saw_Er"), public, protected **capi_er** =[capi_element_t](#)(["e","r","b","i","u","m",c↵ _null_char, " "," "," "," "," "," "," "," "," "," "," "," "," "," "," "," "," "], ["E","r",c_null_char, " "," "," "," "," "," "], Er%z, Er%saw_max, Er%saw_min, Er%saw, Er%saw_u, Er%asaw, Er%asaw_u)

    C API erbium.

- type([element_t](#)), parameter, public **tm** =[element_t](#)("thulium", "Tm", 69, nan, nan, 168.934219d0, 0.000005d0, 168.93d0, 0.01d0)

    thulium.

- type([capi_element_t](#)), bind(C, name="ciaaw_saw_Tm"), public, protected **capi_tm** =[capi_element_t](#)(["t","h","u","l","i","u","m",c↵ _null_char, " "," "," "," "," "," "," "," "," "," "," "," "," "," "," "," "," "], ["T","m",c_null_char, " "," "," "," "," "," "], Tm%z, Tm%saw_max, Tm%saw_min, Tm%saw, Tm%saw_u, Tm%asaw, Tm%asaw_u)

    C API thulium.

- type([element_t](#)), parameter, public **yb** =[element_t](#)("ytterbium", "Yb", 70, nan, nan, 173.045d0, 0.010d0, 173.05d0, 0.02d0)

    ytterbium.

- type(capi_element_t), bind(C, name="ciaaw_saw_Yb"), public, protected **capi_yb** =capi_element_t(["y","t","t","e","r","b","i","u","n", _null_char, " "," "," "," "," "," "," "," "," "," "," "," "," "," "], ["Y","b",c_null_char, " "," "," "," "," "," "], Yb%z, Yb%saw_max, Yb%saw_min, Yb%saw, Yb%saw_u, Yb%asaw, Yb%asaw_u)

    C API ytterbium.

- type(element_t), parameter, public **lu** =element_t("lutetium", "Lu", 71, nan, nan, 174.9668d0, 0.0001d0, 174.97d0, 0.01d0)

    lutetium.

- type(capi_element_t), bind(C, name="ciaaw_saw_Lu"), public, protected **capi_lu** =capi_element_t(["l","u","t","e","t","i","u","m",c, _null_char, " "," "," "," "," "," "," "," "," "," "," "," "," "," "], ["L","u",c_null_char, " "," "," "," "," "," "], Lu%z, Lu%saw_max, Lu%saw_min, Lu%saw, Lu%saw_u, Lu%asaw, Lu%asaw_u)

    C API lutetium.

- type(element_t), parameter, public **hf** =element_t("hafnium", "Hf", 72, nan, nan, 178.486d0, 0.006d0, 178.↩
49d0, 0.01d0)

    hafnium.

- type(capi_element_t), bind(C, name="ciaaw_saw_Hf"), public, protected **capi_hf** =capi_element_t(["h","a","f","n","i","u","m",c↩ _null_char, " "," "," "," "," "," "," "," "," "," "," "," "," "," "], ["H","f",c_null_char, " "," "," "," "," "," "], Hf%z, Hf%saw_max, Hf%saw_min, Hf%saw, Hf%saw_u, Hf%asaw, Hf%asaw_u)

    C API hafnium.

- type(element_t), parameter, public **ta** =element_t("tantalum", "Ta", 73, nan, nan, 180.94788d0, 0.00002d0, 180.95d0, 0.01d0)

    tantalum.

- type(capi_element_t), bind(C, name="ciaaw_saw_Ta"), public, protected **capi_ta** =capi_element_t(["t","a","n","t","a","l","u","m",c, _null_char, " "," "," "," "," "," "," "," "," "," "," "," "," "," "], ["T","a",c_null_char, " "," "," "," "," "," "], Ta%z, Ta%saw_max, Ta%saw_min, Ta%saw, Ta%saw_u, Ta%asaw, Ta%asaw_u)

    C API tantalum.

- type(element_t), parameter, public **w** =element_t("tungsten", "W", 74, nan, nan, 183.84d0, 0.01d0, 183.84d0, 0.01d0)

    tungsten.

- type(capi_element_t), bind(C, name="ciaaw_saw_W"), public, protected **capi_w** =capi_element_t(["t","u","n","g","s","t","e","n",c↩ _null_char, " "," "," "," "," "," "," "," "," "," "," "," "," "," "], ["W",c_null_char, " "," "," "," "," "," "," "], W%z, W%saw_max, W%saw_min, W%saw, W%saw_u, W%asaw, W%asaw_u)

    C API tungsten.

- type(element_t), parameter, public **re** =element_t("rhenium", "Re", 75, nan, nan, 186.207d0, 0.001d0, 186.↩
21d0, 0.01d0)

    rhenium.

- type(capi_element_t), bind(C, name="ciaaw_saw_Re"), public, protected **capi_re** =capi_element_t(["r","h","e","n","i","u","m",c↩ _null_char, " "," "," "," "," "," "," "," "," "," "," "," "," "," "], ["R","e",c_null_char, " "," "," "," "," "," "], Re%z, Re%saw_max, Re%saw_min, Re%saw, Re%saw_u, Re%asaw, Re%asaw_u)

    C API rhenium.

- type(element_t), parameter, public **os** =element_t("osmium", "Os", 76, nan, nan, 190.23d0, 0.03d0, 190.↩
23d0, 0.03d0)

    osmium.

- type(capi_element_t), bind(C, name="ciaaw_saw_Os"), public, protected **capi_os** =capi_element_t(["o","s","m","i","u","m",c↩ _null_char, " "," "," "," "," "," "," "," "," "," "," "," "," "," "], ["O","s",c_null_char, " "," "," "," "," "," "], Os%z, Os%saw_max, Os%saw_min, Os%saw, Os%saw_u, Os%asaw, Os%asaw_u)

    C API osmium.

- type(element_t), parameter, public **ir** =element_t("iridium", "Ir", 77, nan, nan, 192.217d0, 0.002d0, 192.22d0, 0.01d0)

    iridium.

- type(capi_element_t), bind(C, name="ciaaw_saw_Ir"), public, protected **capi_ir** =capi_element_t(["i","r","i","d","i","u","m",c↩ _null_char, " "," "," "," "," "," "," "," "," "," "," "," "," "," "], ["I","r",c_null_char, " "," "," "," "," "," "], Ir%z, Ir%saw_max, Ir%saw_min, Ir%saw, Ir%saw_u, Ir%asaw, Ir%asaw_u)

    C API iridium.

- type(element_t), parameter, public **pt** =element_t("platinum", "Pt", 78, nan, nan, 195.084d0, 0.009d0, 195.↩
  08d0, 0.02d0)

  platinum.
- type(capi_element_t), bind(C, name="ciaaw_saw_Pt"), public, protected **capi_pt** =capi_element_t(["p","l","a","t","i","n","u","m",c↩
  _null_char, " "," "," "," "," "," "," "," "," "," "," "," "," "," "," " "], ["P","t",c_null_char, " "," "," "," "," "," " "], Pt%z,
  Pt%saw_max, Pt%saw_min, Pt%saw, Pt%saw_u, Pt%asaw, Pt%asaw_u)

  C API platinum.
- type(element_t), parameter, public **au** =element_t("gold", "Au", 79, nan, nan, 196.966570d0, 0.000004d0,
  196.97d0, 0.01d0)

  gold.
- type(capi_element_t), bind(C, name="ciaaw_saw_Au"), public, protected **capi_au** =capi_element_t(["g","o","l","d",c↩
  _null_char, " "," "," "," "," "," "," "," "," "," "," "," "," "," "," "," "," "," "," "," " "], ["A","u",c_null_char, " "," "," "," "," " "],
  Au%z, Au%saw_max, Au%saw_min, Au%saw, Au%saw_u, Au%asaw, Au%asaw_u)

  C API gold.
- type(element_t), parameter, public **hg** =element_t("mercury", "Hg", 80, nan, nan, 200.592d0, 0.003d0, 200.↩
  59d0, 0.01d0)

  mercury.
- type(capi_element_t), bind(C, name="ciaaw_saw_Hg"), public, protected **capi_hg** =capi_element_t(["m","e","r","c","u","r","y",c↩
  _null_char, " "," "," "," "," "," "," "," "," "," "," "," "," "," "," "," "," " "], ["H","g",c_null_char, " "," "," "," "," " "], Hg%z,
  Hg%saw_max, Hg%saw_min, Hg%saw, Hg%saw_u, Hg%asaw, Hg%asaw_u)

  C API mercury.
- type(element_t), parameter, public **tl** =element_t("thallium", "Tl", 81, 204.382d0, 204.385d0, 204.3835d0,
  0.0009d0, 204.38d0, 0.01d0)

  thallium.
- type(capi_element_t), bind(C, name="ciaaw_saw_Tl"), public, protected **capi_tl** =capi_element_t(["t","h","a","l","l","i","u","m",c↩
  _null_char, " "," "," "," "," "," "," "," "," "," "," "," "," "," "," " "], ["T","l",c_null_char, " "," "," "," "," " "], Tl%z,
  Tl%saw_max, Tl%saw_min, Tl%saw, Tl%saw_u, Tl%asaw, Tl%asaw_u)

  C API thallium.
- type(element_t), parameter, public **pb** =element_t("lead", "Pb", 82, 206.14d0, 207.94d0, 207.0d0, 0.6d0,
  207.2d0, 1.1d0)

  lead.
- type(capi_element_t), bind(C, name="ciaaw_saw_Pb"), public, protected **capi_pb** =capi_element_t(["l","e","a","d",c↩
  _null_char, " "," "," "," "," "," "," "," "," "," "," "," "," "," "," "," "," "," "," "," " "], ["P","b",c_null_char, " "," "," "," "," " "],
  Pb%z, Pb%saw_max, Pb%saw_min, Pb%saw, Pb%saw_u, Pb%asaw, Pb%asaw_u)

  C API lead.
- type(element_t), parameter, public **bi** =element_t("bismuth", "Bi", 83, nan, nan, 208.98040d0, 0.00001d0,
  208.98d0, 0.01d0)

  bismuth.
- type(capi_element_t), bind(C, name="ciaaw_saw_Bi"), public, protected **capi_bi** =capi_element_t(["b","i","s","m","u","t","h",c↩
  _null_char, " "," "," "," "," "," "," "," "," "," "," "," "," "," "," "," "," " "], ["B","i",c_null_char, " "," "," "," "," " "], Bi%z,
  Bi%saw_max, Bi%saw_min, Bi%saw, Bi%saw_u, Bi%asaw, Bi%asaw_u)

  C API bismuth.
- type(element_t), parameter, public **po** =element_t("polonium", "Po", 84, nan, nan, nan, nan, nan, nan)

  polonium.
- type(capi_element_t), bind(C, name="ciaaw_saw_Po"), public, protected **capi_po** =capi_element_t(["p","o","l","o","n","i","u","m",
  _null_char, " "," "," "," "," "," "," "," "," "," "," "," "," "," "," " "], ["P","o",c_null_char, " "," "," "," "," " "], Po%z,
  Po%saw_max, Po%saw_min, Po%saw, Po%saw_u, Po%asaw, Po%asaw_u)

  C API polonium.
- type(element_t), parameter, public **at** =element_t("astatine", "At", 85, nan, nan, nan, nan, nan, nan)

  astatine.
- type(capi_element_t), bind(C, name="ciaaw_saw_At"), public, protected **capi_at** =capi_element_t(["a","s","t","a","t","i","n","e",c↩
  _null_char, " "," "," "," "," "," "," "," "," "," "," "," "," "," "," " "], ["A","t",c_null_char, " "," "," "," "," " "], At%z,
  At%saw_max, At%saw_min, At%saw, At%saw_u, At%asaw, At%asaw_u)

    C API astatine.

- type(element_t), parameter, public **rn** =element_t("radon", "Rn", 86, nan, nan, nan, nan, nan, nan)

    radon.

- type(capi_element_t), bind(C, name="ciaaw_saw_Rn"), public, protected **capi_rn** =capi_element_t(["r","a","d","o","n",c↩
_null_char, " "," "], ["R","n",c_null_char, " "," "," "," "," "," "],
Rn%z, Rn%saw_max, Rn%saw_min, Rn%saw, Rn%saw_u, Rn%asaw, Rn%asaw_u)

    C API radon.

- type(element_t), parameter, public **fr** =element_t("francium", "Fr", 87, nan, nan, nan, nan, nan, nan)

    francium.

- type(capi_element_t), bind(C, name="ciaaw_saw_Fr"), public, protected **capi_fr** =capi_element_t(["f","r","a","n","c","i","u","m",c↩
_null_char, " "," "," "," "," "," "," "," "," "," "," "," "," "," "," "," "," "," "," "," "], ["F","r",c_null_char, " "," "," "," "," "," "], Fr%z,
Fr%saw_max, Fr%saw_min, Fr%saw, Fr%saw_u, Fr%asaw, Fr%asaw_u)

    C API francium.

- type(element_t), parameter, public **ra** =element_t("radium", "Ra", 88, nan, nan, nan, nan, nan, nan)

    radium.

- type(capi_element_t), bind(C, name="ciaaw_saw_Ra"), public, protected **capi_ra** =capi_element_t(["r","a","d","i","u","m",c↩
_null_char, " "," "], ["R","a",c_null_char, " "," "," "," "," "," "],
Ra%z, Ra%saw_max, Ra%saw_min, Ra%saw, Ra%saw_u, Ra%asaw, Ra%asaw_u)

    C API radium.

- type(element_t), parameter, public **ac** =element_t("actinium", "Ac", 89, nan, nan, nan, nan, nan, nan)

    actinium.

- type(capi_element_t), bind(C, name="ciaaw_saw_Ac"), public, protected **capi_ac** =capi_element_t(["a","c","t","i","n","i","u","m",c
_null_char, " "," "," "," "," "," "," "," "," "," "," "," "," "," "," "," "," "," "," "], ["A","c",c_null_char, " "," "," "," "," "," "], Ac%z,
Ac%saw_max, Ac%saw_min, Ac%saw, Ac%saw_u, Ac%asaw, Ac%asaw_u)

    C API actinium.

- type(element_t), parameter, public **th** =element_t("thorium", "Th", 90, nan, nan, 232.0377d0, 0.0004d0,
232.04d0, 0.01d0)

    thorium.

- type(capi_element_t), bind(C, name="ciaaw_saw_Th"), public, protected **capi_th** =capi_element_t(["t","h","o","r","i","u","m",c↩
_null_char, " "," "," "," "," "," "," "," "," "," "," "," "," "," "," "," "," "," "," "," "], ["T","h",c_null_char, " "," "," "," "," "," "], Th%z,
Th%saw_max, Th%saw_min, Th%saw, Th%saw_u, Th%asaw, Th%asaw_u)

    C API thorium.

- type(element_t), parameter, public **pa** =element_t("protactinium", "Pa", 91, nan, nan, 231.03588d0, 0.↩
00001d0, 231.04d0, 0.01d0)

    protactinium.

- type(capi_element_t), bind(C, name="ciaaw_saw_Pa"), public, protected **capi_pa** =capi_element_t(["p","r","o","t","a","c","t","i","r
_null_char, " "," "," "," "," "," "," "," "," "," "," "," "," "," "," "], ["P","a",c_null_char, " "," "," "," "," "," "], Pa%z, Pa%saw_max,
Pa%saw_min, Pa%saw, Pa%saw_u, Pa%asaw, Pa%asaw_u)

    C API protactinium.

- type(element_t), parameter, public **u** =element_t("uranium", "U", 92, nan, nan, 238.02891d0, 0.00003d0,
238.03d0, 0.01d0)

    uranium.

- type(capi_element_t), bind(C, name="ciaaw_saw_U"), public, protected **capi_u** =capi_element_t(["u","r","a","n","i","u","m",c↩
_null_char, " "," "," "," "," "," "," "," "," "," "," "," "," "," "," "," "," "," "," "," "], ["U",c_null_char, " "," "," "," "," "," "," "], U%z,
U%saw_max, U%saw_min, U%saw, U%saw_u, U%asaw, U%asaw_u)

    C API uranium.

- type(element_t), parameter, public **np** =element_t("neptunium", "Np", 93, nan, nan, nan, nan, nan, nan)

    neptunium.

- type(capi_element_t), bind(C, name="ciaaw_saw_Np"), public, protected **capi_np** =capi_element_t(["n","e","p","t","u","n","i","u",
_null_char, " "," "," "," "," "," "," "," "," "," "," "," "," "," "," "], ["N","p",c_null_char, " "," "," "," "," "," "], Np%z,
Np%saw_max, Np%saw_min, Np%saw, Np%saw_u, Np%asaw, Np%asaw_u)

    C API neptunium.

- type(element_t), parameter, public **pu** =element_t("plutonium", "Pu", 94, nan, nan, nan, nan, nan, nan)

> *plutonium.*

- type(capi_element_t), bind(C, name="ciaaw_saw_Pu"), public, protected **capi_pu** =capi_element_t(["p","l","u","t","o","n","i","u","
  _null_char, " "," "," "," "," "," "," "," "," "," "," "," "," "," "," "], ["P","u",c_null_char, " "," "," "," "," "," "], Pu%z,
  Pu%saw_max, Pu%saw_min, Pu%saw, Pu%saw_u, Pu%asaw, Pu%asaw_u)

  > *C API plutonium.*

- type(element_t), parameter, public **am** =element_t("americium", "Am", 95, nan, nan, nan, nan, nan, nan)

  > *americium.*

- type(capi_element_t), bind(C, name="ciaaw_saw_Am"), public, protected **capi_am** =capi_element_t(["a","m","e","r","i","c","i","u"
  _null_char, " "," "," "," "," "," "," "," "," "," "," "," "," "," "," "], ["A","m",c_null_char, " "," "," "," "," "," "], Am%z,
  Am%saw_max, Am%saw_min, Am%saw, Am%saw_u, Am%asaw, Am%asaw_u)

  > *C API americium.*

- type(element_t), parameter, public **cm** =element_t("curium", "Cm", 96, nan, nan, nan, nan, nan, nan)

  > *curium.*

- type(capi_element_t), bind(C, name="ciaaw_saw_Cm"), public, protected **capi_cm** =capi_element_t(["c","u","r","i","u","m",c←
  _null_char, " "," "," "," "," "," "," "," "," "," "," "," "," "," "," "], ["C","m",c_null_char, " "," "," "," "," "," "],
  Cm%z, Cm%saw_max, Cm%saw_min, Cm%saw, Cm%saw_u, Cm%asaw, Cm%asaw_u)

  > *C API curium.*

- type(element_t), parameter, public **bk** =element_t("berkelium", "Bk", 97, nan, nan, nan, nan, nan, nan)

  > *berkelium.*

- type(capi_element_t), bind(C, name="ciaaw_saw_Bk"), public, protected **capi_bk** =capi_element_t(["b","e","r","k","e","l","i","u","
  _null_char, " "," "," "," "," "," "," "," "," "," "," "," "," "," "," "], ["B","k",c_null_char, " "," "," "," "," "," "], Bk%z,
  Bk%saw_max, Bk%saw_min, Bk%saw, Bk%saw_u, Bk%asaw, Bk%asaw_u)

  > *C API berkelium.*

- type(element_t), parameter, public **cf** =element_t("californium", "Cf", 98, nan, nan, nan, nan, nan, nan)

  > *californium.*

- type(capi_element_t), bind(C, name="ciaaw_saw_Cf"), public, protected **capi_cf** =capi_element_t(["c","a","l","i","f","o","r","n","i",
  _null_char, " "," "," "," "," "," "," "," "," "," "," "," "," "," "," "], ["C","f",c_null_char, " "," "," "," "," "," "], Cf%z, Cf%saw_max,
  Cf%saw_min, Cf%saw, Cf%saw_u, Cf%asaw, Cf%asaw_u)

  > *C API californium.*

- type(element_t), parameter, public **es** =element_t("einsteinium", "Es", 99, nan, nan, nan, nan, nan, nan)

  > *einsteinium.*

- type(capi_element_t), bind(C, name="ciaaw_saw_Es"), public, protected **capi_es** =capi_element_t(["e","i","n","s","t","e","i","n","i
  _null_char, " "," "," "," "," "," "," "," "," "," "," "," "," "," "," "], ["E","s",c_null_char, " "," "," "," "," "," "], Es%z, Es%saw_max,
  Es%saw_min, Es%saw, Es%saw_u, Es%asaw, Es%asaw_u)

  > *C API einsteinium.*

- type(element_t), parameter, public **fm** =element_t("fermium", "Fm", 100, nan, nan, nan, nan, nan, nan)

  > *fermium.*

- type(capi_element_t), bind(C, name="ciaaw_saw_Fm"), public, protected **capi_fm** =capi_element_t(["f","e","r","m","i","u","m",c←
  _null_char, " "," "," "," "," "," "," "," "," "," "," "," "," "," "," "], ["F","m",c_null_char, " "," "," "," "," "," "], Fm%z,
  Fm%saw_max, Fm%saw_min, Fm%saw, Fm%saw_u, Fm%asaw, Fm%asaw_u)

  > *C API fermium.*

- type(element_t), parameter, public **md** =element_t("mendelevium", "Md", 101, nan, nan, nan, nan, nan, nan)

  > *mendelevium.*

- type(capi_element_t), bind(C, name="ciaaw_saw_Md"), public, protected **capi_md** =capi_element_t(["m","e","n","d","e","l","e","v
  _null_char, " "," "," "," "," "," "," "," "," "," "," "," "," "," "," "], ["M","d",c_null_char, " "," "," "," "," "," "], Md%z, Md%saw←
  _max, Md%saw_min, Md%saw, Md%saw_u, Md%asaw, Md%asaw_u)

  > *C API mendelevium.*

- type(element_t), parameter, public **no** =element_t("nobelium", "No", 102, nan, nan, nan, nan, nan, nan)

  > *nobelium.*

- type(capi_element_t), bind(C, name="ciaaw_saw_No"), public, protected **capi_no** =capi_element_t(["n","o","b","e","l","i","u","m"
  _null_char, " "," "," "," "," "," "," "," "," "," "," "," "," "," "," "], ["N","o",c_null_char, " "," "," "," "," "," "], No%z,
  No%saw_max, No%saw_min, No%saw, No%saw_u, No%asaw, No%asaw_u)

  > *C API nobelium.*

- type(element_t), parameter, public **lr** =element_t("lawrencium", "Lr", 103, nan, nan, nan, nan, nan, nan)

  lawrencium.
- type(capi_element_t), bind(C, name="ciaaw_saw_Lr"), public, protected **capi_lr** =capi_element_t(["l","a","w","r","e","n","c","i","u"
  _null_char, " "," "," "," "," "," "," "," "," "," "," "," "," "," "," "," "," " "], ["L","r",c_null_char, " "," "," "," "," "," " "], Lr%z, Lr%saw_max,
  Lr%saw_min, Lr%saw, Lr%saw_u, Lr%asaw, Lr%asaw_u)

  C API lawrencium.
- type(element_t), parameter, public **rf** =element_t("rutherfordium", "Rf", 104, nan, nan, nan, nan, nan, nan)

  rutherfordium.
- type(capi_element_t), bind(C, name="ciaaw_saw_Rf"), public, protected **capi_rf** =capi_element_t(["r","u","t","h","e","r","f","o","r"
  _null_char, " "," "," "," "," "," "," "," "," "," "," " "], ["R","f",c_null_char, " "," "," "," "," "," " "], Rf%z, Rf%saw_max,
  Rf%saw_min, Rf%saw, Rf%saw_u, Rf%asaw, Rf%asaw_u)

  C API rutherfordium.
- type(element_t), parameter, public **db** =element_t("dubnium", "Db", 105, nan, nan, nan, nan, nan, nan)

  dubnium.
- type(capi_element_t), bind(C, name="ciaaw_saw_Db"), public, protected **capi_db** =capi_element_t(["d","u","b","n","i","u","m",c←
  _null_char, " "," "," "," "," "," "," "," "," "," "," "," "," "," "," "," " "], ["D","b",c_null_char, " "," "," "," "," "," " "], Db%z,
  Db%saw_max, Db%saw_min, Db%saw, Db%saw_u, Db%asaw, Db%asaw_u)

  C API dubnium.
- type(element_t), parameter, public **sg** =element_t("seaborgium", "Sg", 106, nan, nan, nan, nan, nan, nan)

  seaborgium.
- type(capi_element_t), bind(C, name="ciaaw_saw_Sg"), public, protected **capi_sg** =capi_element_t(["s","e","a","b","o","r","g","i",
  _null_char, " "," "," "," "," "," "," "," "," "," "," "," "," "," " "], ["S","g",c_null_char, " "," "," "," "," "," " "], Sg%z,
  Sg%saw_max, Sg%saw_min, Sg%saw, Sg%saw_u, Sg%asaw, Sg%asaw_u)

  C API seaborgium.
- type(element_t), parameter, public **bh** =element_t("bohrium", "Bh", 107, nan, nan, nan, nan, nan, nan)

  bohrium.
- type(capi_element_t), bind(C, name="ciaaw_saw_Bh"), public, protected **capi_bh** =capi_element_t(["b","o","h","r","i","u","m",c←
  _null_char, " "," "," "," "," "," "," "," "," "," "," "," "," "," "," "," " "], ["B","h",c_null_char, " "," "," "," "," "," " "], Bh%z,
  Bh%saw_max, Bh%saw_min, Bh%saw, Bh%saw_u, Bh%asaw, Bh%asaw_u)

  C API bohrium.
- type(element_t), parameter, public **hs** =element_t("hassium", "Hs", 108, nan, nan, nan, nan, nan, nan)

  hassium.
- type(capi_element_t), bind(C, name="ciaaw_saw_Hs"), public, protected **capi_hs** =capi_element_t(["h","a","s","s","i","u","m",c←
  _null_char, " "," "," "," "," "," "," "," "," "," "," "," "," "," "," "," " "], ["H","s",c_null_char, " "," "," "," "," "," " "], Hs%z,
  Hs%saw_max, Hs%saw_min, Hs%saw, Hs%saw_u, Hs%asaw, Hs%asaw_u)

  C API hassium.
- type(element_t), parameter, public **mt** =element_t("meitnerium", "Mt", 109, nan, nan, nan, nan, nan, nan)

  meitnerium.
- type(capi_element_t), bind(C, name="ciaaw_saw_Mt"), public, protected **capi_mt** =capi_element_t(["m","e","i","t","n","e","r","i","u
  _null_char, " "," "," "," "," "," "," "," "," "," "," "," "," " "], ["M","t",c_null_char, " "," "," "," "," "," " "], Mt%z,
  Mt%saw_max, Mt%saw_min, Mt%saw, Mt%saw_u, Mt%asaw, Mt%asaw_u)

  C API meitnerium.
- type(element_t), parameter, public **ds** =element_t("darmstadtium", "Ds", 110, nan, nan, nan, nan, nan, nan)

  darmstadtium.
- type(capi_element_t), bind(C, name="ciaaw_saw_Ds"), public, protected **capi_ds** =capi_element_t(["d","a","r","m","s","t","a","d"
  _null_char, " "," "," "," "," "," "," "," "," "," "," "," " "], ["D","s",c_null_char, " "," "," "," "," "," " "], Ds%z, Ds%saw_max,
  Ds%saw_min, Ds%saw, Ds%saw_u, Ds%asaw, Ds%asaw_u)

  C API darmstadtium.
- type(element_t), parameter, public **rg** =element_t("roentgenium", "Rg", 111, nan, nan, nan, nan, nan, nan)

  roentgenium.
- type(capi_element_t), bind(C, name="ciaaw_saw_Rg"), public, protected **capi_rg** =capi_element_t(["r","o","e","n","t","g","e","n","
  _null_char, " "," "," "," "," "," "," "," "," "," "," "," "," "," "," "," " "], ["R","g",c_null_char, " "," "," "," "," "," " "], Rg%z, Rg%saw_max,
  Rg%saw_min, Rg%saw, Rg%saw_u, Rg%asaw, Rg%asaw_u)

C API roentgenium.

- type([element_t](#)), parameter, public **cn** =[element_t](#)("copernicium", "Cn", 112, nan, nan, nan, nan, nan, nan)

    copernicium.

- type([capi_element_t](#)), bind(C, name="ciaaw_saw_Cn"), public, protected **capi_cn** =[capi_element_t](#)(["c","o","p","e","r","n","i","c",
    _null_char, " "," "," "," "," "," "," "," "," "," "," "," "," "," "], ["C","n",c_null_char, " "," "," "," "," "," "], Cn%z, Cn%saw_max,
    Cn%saw_min, Cn%saw, Cn%saw_u, Cn%asaw, Cn%asaw_u)

    C API copernicium.

- type([element_t](#)), parameter, public **nh** =[element_t](#)("nihonium", "Nh", 113, nan, nan, nan, nan, nan, nan)

    nihonium.

- type([capi_element_t](#)), bind(C, name="ciaaw_saw_Nh"), public, protected **capi_nh** =[capi_element_t](#)(["n","i","h","o","n","i","u","m",
    _null_char, " "," "," "," "," "," "," "," "," "," "," "," "," "," "], ["N","h",c_null_char, " "," "," "," "," "," "], Nh%z,
    Nh%saw_max, Nh%saw_min, Nh%saw, Nh%saw_u, Nh%asaw, Nh%asaw_u)

    C API nihonium.

- type([element_t](#)), parameter, public **fl** =[element_t](#)("flerovium", "Fl", 114, nan, nan, nan, nan, nan, nan)

    flerovium.

- type([capi_element_t](#)), bind(C, name="ciaaw_saw_Fl"), public, protected **capi_fl** =[capi_element_t](#)(["f","l","e","r","o","v","i","u","m",
    _null_char, " "," "," "," "," "," "," "," "," "," "," "," "," "," "], ["F","l",c_null_char, " "," "," "," "," "," "], Fl%z,
    Fl%saw_max, Fl%saw_min, Fl%saw, Fl%saw_u, Fl%asaw, Fl%asaw_u)

    C API flerovium.

- type([element_t](#)), parameter, public **mc** =[element_t](#)("moscovium", "Mc", 115, nan, nan, nan, nan, nan, nan)

    moscovium.

- type([capi_element_t](#)), bind(C, name="ciaaw_saw_Mc"), public, protected **capi_mc** =[capi_element_t](#)(["m","o","s","c","o","v","i","u",
    _null_char, " "," "," "," "," "," "," "," "," "," "," "," "," "," "], ["M","c",c_null_char, " "," "," "," "," "," "], Mc%z,
    Mc%saw_max, Mc%saw_min, Mc%saw, Mc%saw_u, Mc%asaw, Mc%asaw_u)

    C API moscovium.

- type([element_t](#)), parameter, public **lv** =[element_t](#)("livermorium", "Lv", 116, nan, nan, nan, nan, nan, nan)

    livermorium.

- type([capi_element_t](#)), bind(C, name="ciaaw_saw_Lv"), public, protected **capi_lv** =[capi_element_t](#)(["l","i","v","e","r","m","o","r","i",
    _null_char, " "," "," "," "," "," "," "," "," "," "," "," "," "," "], ["L","v",c_null_char, " "," "," "," "," "," "], Lv%z, Lv%saw_max,
    Lv%saw_min, Lv%saw, Lv%saw_u, Lv%asaw, Lv%asaw_u)

    C API livermorium.

- type([element_t](#)), parameter, public **ts** =[element_t](#)("tennesine", "Ts", 117, nan, nan, nan, nan, nan, nan)

    tennesine.

- type([capi_element_t](#)), bind(C, name="ciaaw_saw_Ts"), public, protected **capi_ts** =[capi_element_t](#)(["t","e","n","n","e","s","i","n","e",
    _null_char, " "," "," "," "," "," "," "," "," "," "," "," "," "," "], ["T","s",c_null_char, " "," "," "," "," "," "], Ts%z,
    Ts%saw_max, Ts%saw_min, Ts%saw, Ts%saw_u, Ts%asaw, Ts%asaw_u)

    C API tennesine.

- type([element_t](#)), parameter, public **og** =[element_t](#)("organesson", "Og", 118, nan, nan, nan, nan, nan, nan)

    organesson.

- type([capi_element_t](#)), bind(C, name="ciaaw_saw_Og"), public, protected **capi_og** =[capi_element_t](#)(["o","r","g","a","n","e","s","s",
    _null_char, " "," "," "," "," "," "," "," "," "," "," "," "," "," "], ["O","g",c_null_char, " "," "," "," "," "," "], Og%z,
    Og%saw_max, Og%saw_min, Og%saw, Og%saw_u, Og%asaw, Og%asaw_u)

    C API organesson.

5.2.1 Detailed Description

Standard Atomic Weights - autogenerated.

5.3 ciaaw__version Module Reference

Version module.

Functions/Subroutines

- character(len=:) function, pointer, public [get_version]() ()

    Get the version.

5.3.1 Detailed Description

Version module.

5.3.2 Function/Subroutine Documentation

5.3.2.1 get_version()

```
character(len=:)  function, pointer, public ciaaw__version::get_version
```

Get the version.

Returns

fptr Pointer to the version string.

Chapter 6

Data Type Documentation

6.1 ciaaw__saw::capi_element_t Type Reference

Object representing an element.

Data Fields

- character(kind=c_char), dimension(25) **element**

  Element name.
- character(kind=c_char), dimension(9) **symbol**

  Element symbol.
- integer(c_int) **z**

  Element atomic number.
- real(c_double) **saw_min**

  Min standard atomic weight.
- real(c_double) **saw_max**

  Max standard atomic weight.
- real(c_double) **saw**

  Value standard atomic weight.
- real(c_double) **saw_u**

  Uncertainty standard atomic weight.
- real(c_double) **asaw**

  Abridged value standard atomic weight.
- real(c_double) **asaw_u**

  Abridged uncertainty standard atomic weight.

6.1.1 Detailed Description

Object representing an element.

The documentation for this type was generated from the following file:

- ciaaw_saw.f90

6.2 ciaaw_saw_element_t Struct Reference

C API Object representing an element.

```
#include <ciaaw_saw.h>
```

Data Fields

- char element [25]
- char symbol [9]
- int z
- double saw_min
- double saw_max
- double saw
- double saw_u
- double asaw
- double asaw_u

6.2.1 Detailed Description

C API Object representing an element.

6.2.2 Field Documentation

6.2.2.1 asaw

```
double ciaaw_saw_element_t::asaw
```

Abridged value standard atomic weight.

6.2.2.2 asaw_u

```
double ciaaw_saw_element_t::asaw_u
```

Abridged uncertainty standard atomic weight.

6.2.2.3 element

```
char ciaaw_saw_element_t::element[25]
```

Element name.

6.2.2.4 saw

```
double ciaaw_saw_element_t::saw
```

Value standard atomic weight.

6.2.2.5 saw_max

```
double ciaaw_saw_element_t::saw_max
```

Max standard atomic weight.

6.2.2.6 saw_min

```
double ciaaw_saw_element_t::saw_min
```

Min standard atomic weight.

6.2.2.7 saw_u

```
double ciaaw_saw_element_t::saw_u
```

Uncertainty standard atomic weight.

6.2.2.8 symbol

```
char ciaaw_saw_element_t::symbol[9]
```

Element symbol.

6.2.2.9 z

```
int ciaaw_saw_element_t::z
```

Element atomic number.

The documentation for this struct was generated from the following file:

- ciaaw_saw.h

6.3 ciaaw__saw::element_t Type Reference

Object representing an element.

Data Fields

- character(len=24) **element**

  Element name.
- character(len=8) **symbol**

  Element symbol.
- integer(int32) **z**

  Element atomic number.
- real(real64) **saw_min**

  Min standard atomic weight.
- real(real64) **saw_max**

  Max standard atomic weight.
- real(real64) **saw**

  Value standard atomic weight.
- real(real64) **saw_u**

  Uncertainty standard atomic weight.
- real(real64) **asaw**

  Abridged value standard atomic weight.
- real(real64) **asaw_u**

  Abridged uncertainty standard atomic weight.

6.3.1 Detailed Description

Object representing an element.

The documentation for this type was generated from the following file:

- ciaaw_saw.f90

Chapter 7

File Documentation

7.1 ciaaw.h File Reference

Main C header for the CIAAW library.

```
#include "ciaaw_version.h"
#include "ciaaw_saw.h"
```
Include dependency graph for ciaaw.h:
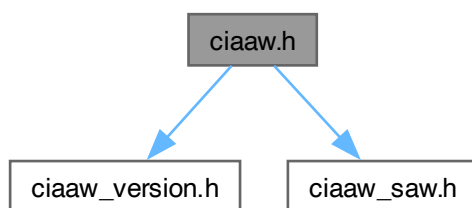
7.1.1 Detailed Description

Main C header for the CIAAW library.

7.2 ciaaw.h

Go to the documentation of this file.
```
00001
00005 #ifndef CIAAW_H
00006 #define CIAAW_H
00007
00008 #include "ciaaw_version.h"
00009 #include "ciaaw_saw.h"
00010
00011 #endif
```

7.3 ciaaw_saw.h File Reference

C API Standard Atomic Weights - autogenerated.

This graph shows which files directly or indirectly include this file:
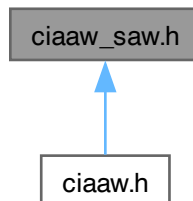
ciaaw_saw.h

ciaaw.h

Data Structures

- struct ciaaw_saw_element_t

    C API Object representing an element.

Variables

- ADD_IMPORT const int ciaaw_saw_YEAR
- ADD_IMPORT const struct ciaaw_saw_element_t ciaaw_saw_H
- ADD_IMPORT const struct ciaaw_saw_element_t ciaaw_saw_He
- ADD_IMPORT const struct ciaaw_saw_element_t ciaaw_saw_Li
- ADD_IMPORT const struct ciaaw_saw_element_t ciaaw_saw_Be
- ADD_IMPORT const struct ciaaw_saw_element_t ciaaw_saw_B
- ADD_IMPORT const struct ciaaw_saw_element_t ciaaw_saw_C
- ADD_IMPORT const struct ciaaw_saw_element_t ciaaw_saw_N
- ADD_IMPORT const struct ciaaw_saw_element_t ciaaw_saw_O
- ADD_IMPORT const struct ciaaw_saw_element_t ciaaw_saw_F
- ADD_IMPORT const struct ciaaw_saw_element_t ciaaw_saw_Ne
- ADD_IMPORT const struct ciaaw_saw_element_t ciaaw_saw_Na
- ADD_IMPORT const struct ciaaw_saw_element_t ciaaw_saw_Mg
- ADD_IMPORT const struct ciaaw_saw_element_t ciaaw_saw_Al
- ADD_IMPORT const struct ciaaw_saw_element_t ciaaw_saw_Si
- ADD_IMPORT const struct ciaaw_saw_element_t ciaaw_saw_P
- ADD_IMPORT const struct ciaaw_saw_element_t ciaaw_saw_S
- ADD_IMPORT const struct ciaaw_saw_element_t ciaaw_saw_Cl
- ADD_IMPORT const struct ciaaw_saw_element_t ciaaw_saw_Ar
- ADD_IMPORT const struct ciaaw_saw_element_t ciaaw_saw_K
- ADD_IMPORT const struct ciaaw_saw_element_t ciaaw_saw_Ca
- ADD_IMPORT const struct ciaaw_saw_element_t ciaaw_saw_Sc
- ADD_IMPORT const struct ciaaw_saw_element_t ciaaw_saw_Ti
- ADD_IMPORT const struct ciaaw_saw_element_t ciaaw_saw_V
- ADD_IMPORT const struct ciaaw_saw_element_t ciaaw_saw_Cr

- ADD_IMPORT const struct ciaaw_saw_element_t ciaaw_saw_Mn
- ADD_IMPORT const struct ciaaw_saw_element_t ciaaw_saw_Fe
- ADD_IMPORT const struct ciaaw_saw_element_t ciaaw_saw_Co
- ADD_IMPORT const struct ciaaw_saw_element_t ciaaw_saw_Ni
- ADD_IMPORT const struct ciaaw_saw_element_t ciaaw_saw_Cu
- ADD_IMPORT const struct ciaaw_saw_element_t ciaaw_saw_Zn
- ADD_IMPORT const struct ciaaw_saw_element_t ciaaw_saw_Ga
- ADD_IMPORT const struct ciaaw_saw_element_t ciaaw_saw_Ge
- ADD_IMPORT const struct ciaaw_saw_element_t ciaaw_saw_As
- ADD_IMPORT const struct ciaaw_saw_element_t ciaaw_saw_Se
- ADD_IMPORT const struct ciaaw_saw_element_t ciaaw_saw_Br
- ADD_IMPORT const struct ciaaw_saw_element_t ciaaw_saw_Kr
- ADD_IMPORT const struct ciaaw_saw_element_t ciaaw_saw_Rb
- ADD_IMPORT const struct ciaaw_saw_element_t ciaaw_saw_Sr
- ADD_IMPORT const struct ciaaw_saw_element_t ciaaw_saw_Y
- ADD_IMPORT const struct ciaaw_saw_element_t ciaaw_saw_Zr
- ADD_IMPORT const struct ciaaw_saw_element_t ciaaw_saw_Nb
- ADD_IMPORT const struct ciaaw_saw_element_t ciaaw_saw_Mo
- ADD_IMPORT const struct ciaaw_saw_element_t ciaaw_saw_Tc
- ADD_IMPORT const struct ciaaw_saw_element_t ciaaw_saw_Ru
- ADD_IMPORT const struct ciaaw_saw_element_t ciaaw_saw_Rh
- ADD_IMPORT const struct ciaaw_saw_element_t ciaaw_saw_Pd
- ADD_IMPORT const struct ciaaw_saw_element_t ciaaw_saw_Ag
- ADD_IMPORT const struct ciaaw_saw_element_t ciaaw_saw_Cd
- ADD_IMPORT const struct ciaaw_saw_element_t ciaaw_saw_In
- ADD_IMPORT const struct ciaaw_saw_element_t ciaaw_saw_Sn
- ADD_IMPORT const struct ciaaw_saw_element_t ciaaw_saw_Sb
- ADD_IMPORT const struct ciaaw_saw_element_t ciaaw_saw_Te
- ADD_IMPORT const struct ciaaw_saw_element_t ciaaw_saw_I
- ADD_IMPORT const struct ciaaw_saw_element_t ciaaw_saw_Xe
- ADD_IMPORT const struct ciaaw_saw_element_t ciaaw_saw_Cs
- ADD_IMPORT const struct ciaaw_saw_element_t ciaaw_saw_Ba
- ADD_IMPORT const struct ciaaw_saw_element_t ciaaw_saw_La
- ADD_IMPORT const struct ciaaw_saw_element_t ciaaw_saw_Ce
- ADD_IMPORT const struct ciaaw_saw_element_t ciaaw_saw_Pr
- ADD_IMPORT const struct ciaaw_saw_element_t ciaaw_saw_Nd
- ADD_IMPORT const struct ciaaw_saw_element_t ciaaw_saw_Pm
- ADD_IMPORT const struct ciaaw_saw_element_t ciaaw_saw_Sm
- ADD_IMPORT const struct ciaaw_saw_element_t ciaaw_saw_Eu
- ADD_IMPORT const struct ciaaw_saw_element_t ciaaw_saw_Gd
- ADD_IMPORT const struct ciaaw_saw_element_t ciaaw_saw_Tb
- ADD_IMPORT const struct ciaaw_saw_element_t ciaaw_saw_Dy
- ADD_IMPORT const struct ciaaw_saw_element_t ciaaw_saw_Ho
- ADD_IMPORT const struct ciaaw_saw_element_t ciaaw_saw_Er
- ADD_IMPORT const struct ciaaw_saw_element_t ciaaw_saw_Tm
- ADD_IMPORT const struct ciaaw_saw_element_t ciaaw_saw_Yb
- ADD_IMPORT const struct ciaaw_saw_element_t ciaaw_saw_Lu
- ADD_IMPORT const struct ciaaw_saw_element_t ciaaw_saw_Hf
- ADD_IMPORT const struct ciaaw_saw_element_t ciaaw_saw_Ta
- ADD_IMPORT const struct ciaaw_saw_element_t ciaaw_saw_W
- ADD_IMPORT const struct ciaaw_saw_element_t ciaaw_saw_Re
- ADD_IMPORT const struct ciaaw_saw_element_t ciaaw_saw_Os
- ADD_IMPORT const struct ciaaw_saw_element_t ciaaw_saw_Ir
- ADD_IMPORT const struct ciaaw_saw_element_t ciaaw_saw_Pt
- ADD_IMPORT const struct ciaaw_saw_element_t ciaaw_saw_Au

- ADD_IMPORT const struct [ciaaw_saw_element_t](#) ciaaw_saw_Hg
- ADD_IMPORT const struct [ciaaw_saw_element_t](#) ciaaw_saw_Tl
- ADD_IMPORT const struct [ciaaw_saw_element_t](#) ciaaw_saw_Pb
- ADD_IMPORT const struct [ciaaw_saw_element_t](#) ciaaw_saw_Bi
- ADD_IMPORT const struct [ciaaw_saw_element_t](#) ciaaw_saw_Po
- ADD_IMPORT const struct [ciaaw_saw_element_t](#) ciaaw_saw_At
- ADD_IMPORT const struct [ciaaw_saw_element_t](#) ciaaw_saw_Rn
- ADD_IMPORT const struct [ciaaw_saw_element_t](#) ciaaw_saw_Fr
- ADD_IMPORT const struct [ciaaw_saw_element_t](#) ciaaw_saw_Ra
- ADD_IMPORT const struct [ciaaw_saw_element_t](#) ciaaw_saw_Ac
- ADD_IMPORT const struct [ciaaw_saw_element_t](#) ciaaw_saw_Th
- ADD_IMPORT const struct [ciaaw_saw_element_t](#) ciaaw_saw_Pa
- ADD_IMPORT const struct [ciaaw_saw_element_t](#) ciaaw_saw_U
- ADD_IMPORT const struct [ciaaw_saw_element_t](#) ciaaw_saw_Np
- ADD_IMPORT const struct [ciaaw_saw_element_t](#) ciaaw_saw_Pu
- ADD_IMPORT const struct [ciaaw_saw_element_t](#) ciaaw_saw_Am
- ADD_IMPORT const struct [ciaaw_saw_element_t](#) ciaaw_saw_Cm
- ADD_IMPORT const struct [ciaaw_saw_element_t](#) ciaaw_saw_Bk
- ADD_IMPORT const struct [ciaaw_saw_element_t](#) ciaaw_saw_Cf
- ADD_IMPORT const struct [ciaaw_saw_element_t](#) ciaaw_saw_Es
- ADD_IMPORT const struct [ciaaw_saw_element_t](#) ciaaw_saw_Fm
- ADD_IMPORT const struct [ciaaw_saw_element_t](#) ciaaw_saw_Md
- ADD_IMPORT const struct [ciaaw_saw_element_t](#) ciaaw_saw_No
- ADD_IMPORT const struct [ciaaw_saw_element_t](#) ciaaw_saw_Lr
- ADD_IMPORT const struct [ciaaw_saw_element_t](#) ciaaw_saw_Rf
- ADD_IMPORT const struct [ciaaw_saw_element_t](#) ciaaw_saw_Db
- ADD_IMPORT const struct [ciaaw_saw_element_t](#) ciaaw_saw_Sg
- ADD_IMPORT const struct [ciaaw_saw_element_t](#) ciaaw_saw_Bh
- ADD_IMPORT const struct [ciaaw_saw_element_t](#) ciaaw_saw_Hs
- ADD_IMPORT const struct [ciaaw_saw_element_t](#) ciaaw_saw_Mt
- ADD_IMPORT const struct [ciaaw_saw_element_t](#) ciaaw_saw_Ds
- ADD_IMPORT const struct [ciaaw_saw_element_t](#) ciaaw_saw_Rg
- ADD_IMPORT const struct [ciaaw_saw_element_t](#) ciaaw_saw_Cn
- ADD_IMPORT const struct [ciaaw_saw_element_t](#) ciaaw_saw_Nh
- ADD_IMPORT const struct [ciaaw_saw_element_t](#) ciaaw_saw_Fl
- ADD_IMPORT const struct [ciaaw_saw_element_t](#) ciaaw_saw_Mc
- ADD_IMPORT const struct [ciaaw_saw_element_t](#) ciaaw_saw_Lv
- ADD_IMPORT const struct [ciaaw_saw_element_t](#) ciaaw_saw_Ts
- ADD_IMPORT const struct [ciaaw_saw_element_t](#) ciaaw_saw_Og

7.3.1 Detailed Description

C API Standard Atomic Weights - autogenerated.

7.3.2 Variable Documentation

7.3.2.1 ciaaw_saw_Ac

ADD_IMPORT const struct [ciaaw_saw_element_t](#) ciaaw_saw_Ac [extern]

C API Ac.

7.3.2.2 ciaaw_saw_Ag

ADD_IMPORT const struct ciaaw_saw_element_t ciaaw_saw_Ag [extern]

C API Ag.

7.3.2.3 ciaaw_saw_Al

ADD_IMPORT const struct ciaaw_saw_element_t ciaaw_saw_Al [extern]

C API Al.

7.3.2.4 ciaaw_saw_Am

ADD_IMPORT const struct ciaaw_saw_element_t ciaaw_saw_Am [extern]

C API Am.

7.3.2.5 ciaaw_saw_Ar

ADD_IMPORT const struct ciaaw_saw_element_t ciaaw_saw_Ar [extern]

C API Ar.

7.3.2.6 ciaaw_saw_As

ADD_IMPORT const struct ciaaw_saw_element_t ciaaw_saw_As [extern]

C API As.

7.3.2.7 ciaaw_saw_At

ADD_IMPORT const struct ciaaw_saw_element_t ciaaw_saw_At [extern]

C API At.

7.3.2.8 ciaaw_saw_Au

ADD_IMPORT const struct ciaaw_saw_element_t ciaaw_saw_Au [extern]

C API Au.

7.3.2.9 ciaaw_saw_B

ADD_IMPORT const struct ciaaw_saw_element_t ciaaw_saw_B [extern]

C API B.

7.3.2.10 ciaaw_saw_Ba

ADD_IMPORT const struct ciaaw_saw_element_t ciaaw_saw_Ba [extern]

C API Ba.

7.3.2.11 ciaaw_saw_Be

ADD_IMPORT const struct ciaaw_saw_element_t ciaaw_saw_Be [extern]

C API Be.

7.3.2.12 ciaaw_saw_Bh

ADD_IMPORT const struct ciaaw_saw_element_t ciaaw_saw_Bh [extern]

C API Bh.

7.3.2.13 ciaaw_saw_Bi

ADD_IMPORT const struct ciaaw_saw_element_t ciaaw_saw_Bi [extern]

C API Bi.

7.3.2.14 ciaaw_saw_Bk

ADD_IMPORT const struct ciaaw_saw_element_t ciaaw_saw_Bk [extern]

C API Bk.

7.3.2.15 ciaaw_saw_Br

ADD_IMPORT const struct ciaaw_saw_element_t ciaaw_saw_Br [extern]

C API Br.

7.3.2.16 ciaaw_saw_C

ADD_IMPORT const struct ciaaw_saw_element_t ciaaw_saw_C [extern]

C API C.

7.3.2.17 ciaaw_saw_Ca

ADD_IMPORT const struct ciaaw_saw_element_t ciaaw_saw_Ca [extern]

C API Ca.

7.3.2.18 ciaaw_saw_Cd

ADD_IMPORT const struct ciaaw_saw_element_t ciaaw_saw_Cd [extern]

C API Cd.

7.3.2.19 ciaaw_saw_Ce

ADD_IMPORT const struct ciaaw_saw_element_t ciaaw_saw_Ce [extern]

C API Ce.

7.3.2.20 ciaaw_saw_Cf

ADD_IMPORT const struct ciaaw_saw_element_t ciaaw_saw_Cf [extern]

C API Cf.

7.3.2.21 ciaaw_saw_Cl

ADD_IMPORT const struct ciaaw_saw_element_t ciaaw_saw_Cl [extern]

C API Cl.

7.3.2.22 ciaaw_saw_Cm

ADD_IMPORT const struct ciaaw_saw_element_t ciaaw_saw_Cm [extern]

C API Cm.

7.3.2.23 ciaaw_saw_Cn

ADD_IMPORT const struct ciaaw_saw_element_t ciaaw_saw_Cn [extern]

C API Cn.

7.3.2.24 ciaaw_saw_Co

ADD_IMPORT const struct ciaaw_saw_element_t ciaaw_saw_Co [extern]

C API Co.

7.3.2.25 ciaaw_saw_Cr

ADD_IMPORT const struct ciaaw_saw_element_t ciaaw_saw_Cr [extern]

C API Cr.

7.3.2.26 ciaaw_saw_Cs

ADD_IMPORT const struct [ciaaw_saw_element_t](#) ciaaw_saw_Cs [extern]

C API Cs.

7.3.2.27 ciaaw_saw_Cu

ADD_IMPORT const struct [ciaaw_saw_element_t](#) ciaaw_saw_Cu [extern]

C API Cu.

7.3.2.28 ciaaw_saw_Db

ADD_IMPORT const struct [ciaaw_saw_element_t](#) ciaaw_saw_Db [extern]

C API Db.

7.3.2.29 ciaaw_saw_Ds

ADD_IMPORT const struct [ciaaw_saw_element_t](#) ciaaw_saw_Ds [extern]

C API Ds.

7.3.2.30 ciaaw_saw_Dy

ADD_IMPORT const struct [ciaaw_saw_element_t](#) ciaaw_saw_Dy [extern]

C API Dy.

7.3.2.31 ciaaw_saw_Er

ADD_IMPORT const struct [ciaaw_saw_element_t](#) ciaaw_saw_Er [extern]

C API Er.

7.3.2.32 ciaaw_saw_Es

ADD_IMPORT const struct [ciaaw_saw_element_t](#) ciaaw_saw_Es [extern]

C API Es.

7.3.2.33 ciaaw_saw_Eu

ADD_IMPORT const struct [ciaaw_saw_element_t](#) ciaaw_saw_Eu [extern]

C API Eu.

7.3.2.34 ciaaw_saw_F

ADD_IMPORT const struct ciaaw_saw_element_t ciaaw_saw_F [extern]

C API F.

7.3.2.35 ciaaw_saw_Fe

ADD_IMPORT const struct ciaaw_saw_element_t ciaaw_saw_Fe [extern]

C API Fe.

7.3.2.36 ciaaw_saw_Fl

ADD_IMPORT const struct ciaaw_saw_element_t ciaaw_saw_Fl [extern]

C API Fl.

7.3.2.37 ciaaw_saw_Fm

ADD_IMPORT const struct ciaaw_saw_element_t ciaaw_saw_Fm [extern]

C API Fm.

7.3.2.38 ciaaw_saw_Fr

ADD_IMPORT const struct ciaaw_saw_element_t ciaaw_saw_Fr [extern]

C API Fr.

7.3.2.39 ciaaw_saw_Ga

ADD_IMPORT const struct ciaaw_saw_element_t ciaaw_saw_Ga [extern]

C API Ga.

7.3.2.40 ciaaw_saw_Gd

ADD_IMPORT const struct ciaaw_saw_element_t ciaaw_saw_Gd [extern]

C API Gd.

7.3.2.41 ciaaw_saw_Ge

ADD_IMPORT const struct ciaaw_saw_element_t ciaaw_saw_Ge [extern]

C API Ge.

7.3.2.42 ciaaw_saw_H

ADD_IMPORT const struct [ciaaw_saw_element_t](#) ciaaw_saw_H [extern]

C API H.

7.3.2.43 ciaaw_saw_He

ADD_IMPORT const struct [ciaaw_saw_element_t](#) ciaaw_saw_He [extern]

C API He.

7.3.2.44 ciaaw_saw_Hf

ADD_IMPORT const struct [ciaaw_saw_element_t](#) ciaaw_saw_Hf [extern]

C API Hf.

7.3.2.45 ciaaw_saw_Hg

ADD_IMPORT const struct [ciaaw_saw_element_t](#) ciaaw_saw_Hg [extern]

C API Hg.

7.3.2.46 ciaaw_saw_Ho

ADD_IMPORT const struct [ciaaw_saw_element_t](#) ciaaw_saw_Ho [extern]

C API Ho.

7.3.2.47 ciaaw_saw_Hs

ADD_IMPORT const struct [ciaaw_saw_element_t](#) ciaaw_saw_Hs [extern]

C API Hs.

7.3.2.48 ciaaw_saw_I

ADD_IMPORT const struct [ciaaw_saw_element_t](#) ciaaw_saw_I [extern]

C API I.

7.3.2.49 ciaaw_saw_In

ADD_IMPORT const struct [ciaaw_saw_element_t](#) ciaaw_saw_In [extern]

C API In.

7.3.2.50 ciaaw_saw_Ir

ADD_IMPORT const struct ciaaw_saw_element_t ciaaw_saw_Ir [extern]

C API Ir.

7.3.2.51 ciaaw_saw_K

ADD_IMPORT const struct ciaaw_saw_element_t ciaaw_saw_K [extern]

C API K.

7.3.2.52 ciaaw_saw_Kr

ADD_IMPORT const struct ciaaw_saw_element_t ciaaw_saw_Kr [extern]

C API Kr.

7.3.2.53 ciaaw_saw_La

ADD_IMPORT const struct ciaaw_saw_element_t ciaaw_saw_La [extern]

C API La.

7.3.2.54 ciaaw_saw_Li

ADD_IMPORT const struct ciaaw_saw_element_t ciaaw_saw_Li [extern]

C API Li.

7.3.2.55 ciaaw_saw_Lr

ADD_IMPORT const struct ciaaw_saw_element_t ciaaw_saw_Lr [extern]

C API Lr.

7.3.2.56 ciaaw_saw_Lu

ADD_IMPORT const struct ciaaw_saw_element_t ciaaw_saw_Lu [extern]

C API Lu.

7.3.2.57 ciaaw_saw_Lv

ADD_IMPORT const struct ciaaw_saw_element_t ciaaw_saw_Lv [extern]

C API Lv.

7.3.2.58 ciaaw_saw_Mc

ADD_IMPORT const struct ciaaw_saw_element_t ciaaw_saw_Mc [extern]

C API Mc.

7.3.2.59 ciaaw_saw_Md

ADD_IMPORT const struct ciaaw_saw_element_t ciaaw_saw_Md [extern]

C API Md.

7.3.2.60 ciaaw_saw_Mg

ADD_IMPORT const struct ciaaw_saw_element_t ciaaw_saw_Mg [extern]

C API Mg.

7.3.2.61 ciaaw_saw_Mn

ADD_IMPORT const struct ciaaw_saw_element_t ciaaw_saw_Mn [extern]

C API Mn.

7.3.2.62 ciaaw_saw_Mo

ADD_IMPORT const struct ciaaw_saw_element_t ciaaw_saw_Mo [extern]

C API Mo.

7.3.2.63 ciaaw_saw_Mt

ADD_IMPORT const struct ciaaw_saw_element_t ciaaw_saw_Mt [extern]

C API Mt.

7.3.2.64 ciaaw_saw_N

ADD_IMPORT const struct ciaaw_saw_element_t ciaaw_saw_N [extern]

C API N.

7.3.2.65 ciaaw_saw_Na

ADD_IMPORT const struct ciaaw_saw_element_t ciaaw_saw_Na [extern]

C API Na.

7.3.2.66 ciaaw_saw_Nb

ADD_IMPORT const struct ciaaw_saw_element_t ciaaw_saw_Nb [extern]

C API Nb.

7.3.2.67 ciaaw_saw_Nd

ADD_IMPORT const struct ciaaw_saw_element_t ciaaw_saw_Nd [extern]

C API Nd.

7.3.2.68 ciaaw_saw_Ne

ADD_IMPORT const struct ciaaw_saw_element_t ciaaw_saw_Ne [extern]

C API Ne.

7.3.2.69 ciaaw_saw_Nh

ADD_IMPORT const struct ciaaw_saw_element_t ciaaw_saw_Nh [extern]

C API Nh.

7.3.2.70 ciaaw_saw_Ni

ADD_IMPORT const struct ciaaw_saw_element_t ciaaw_saw_Ni [extern]

C API Ni.

7.3.2.71 ciaaw_saw_No

ADD_IMPORT const struct ciaaw_saw_element_t ciaaw_saw_No [extern]

C API No.

7.3.2.72 ciaaw_saw_Np

ADD_IMPORT const struct ciaaw_saw_element_t ciaaw_saw_Np [extern]

C API Np.

7.3.2.73 ciaaw_saw_O

ADD_IMPORT const struct ciaaw_saw_element_t ciaaw_saw_O [extern]

C API O.

7.3.2.74 ciaaw_saw_Og

ADD_IMPORT const struct [ciaaw_saw_element_t](#) ciaaw_saw_Og [extern]

C API Og.

7.3.2.75 ciaaw_saw_Os

ADD_IMPORT const struct [ciaaw_saw_element_t](#) ciaaw_saw_Os [extern]

C API Os.

7.3.2.76 ciaaw_saw_P

ADD_IMPORT const struct [ciaaw_saw_element_t](#) ciaaw_saw_P [extern]

C API P.

7.3.2.77 ciaaw_saw_Pa

ADD_IMPORT const struct [ciaaw_saw_element_t](#) ciaaw_saw_Pa [extern]

C API Pa.

7.3.2.78 ciaaw_saw_Pb

ADD_IMPORT const struct [ciaaw_saw_element_t](#) ciaaw_saw_Pb [extern]

C API Pb.

7.3.2.79 ciaaw_saw_Pd

ADD_IMPORT const struct [ciaaw_saw_element_t](#) ciaaw_saw_Pd [extern]

C API Pd.

7.3.2.80 ciaaw_saw_Pm

ADD_IMPORT const struct [ciaaw_saw_element_t](#) ciaaw_saw_Pm [extern]

C API Pm.

7.3.2.81 ciaaw_saw_Po

ADD_IMPORT const struct [ciaaw_saw_element_t](#) ciaaw_saw_Po [extern]

C API Po.

7.3.2.82 ciaaw_saw_Pr

ADD_IMPORT const struct ciaaw_saw_element_t ciaaw_saw_Pr [extern]

C API Pr.

7.3.2.83 ciaaw_saw_Pt

ADD_IMPORT const struct ciaaw_saw_element_t ciaaw_saw_Pt [extern]

C API Pt.

7.3.2.84 ciaaw_saw_Pu

ADD_IMPORT const struct ciaaw_saw_element_t ciaaw_saw_Pu [extern]

C API Pu.

7.3.2.85 ciaaw_saw_Ra

ADD_IMPORT const struct ciaaw_saw_element_t ciaaw_saw_Ra [extern]

C API Ra.

7.3.2.86 ciaaw_saw_Rb

ADD_IMPORT const struct ciaaw_saw_element_t ciaaw_saw_Rb [extern]

C API Rb.

7.3.2.87 ciaaw_saw_Re

ADD_IMPORT const struct ciaaw_saw_element_t ciaaw_saw_Re [extern]

C API Re.

7.3.2.88 ciaaw_saw_Rf

ADD_IMPORT const struct ciaaw_saw_element_t ciaaw_saw_Rf [extern]

C API Rf.

7.3.2.89 ciaaw_saw_Rg

ADD_IMPORT const struct ciaaw_saw_element_t ciaaw_saw_Rg [extern]

C API Rg.

7.3.2.90 ciaaw_saw_Rh

ADD_IMPORT const struct ciaaw_saw_element_t ciaaw_saw_Rh [extern]

C API Rh.

7.3.2.91 ciaaw_saw_Rn

ADD_IMPORT const struct ciaaw_saw_element_t ciaaw_saw_Rn [extern]

C API Rn.

7.3.2.92 ciaaw_saw_Ru

ADD_IMPORT const struct ciaaw_saw_element_t ciaaw_saw_Ru [extern]

C API Ru.

7.3.2.93 ciaaw_saw_S

ADD_IMPORT const struct ciaaw_saw_element_t ciaaw_saw_S [extern]

C API S.

7.3.2.94 ciaaw_saw_Sb

ADD_IMPORT const struct ciaaw_saw_element_t ciaaw_saw_Sb [extern]

C API Sb.

7.3.2.95 ciaaw_saw_Sc

ADD_IMPORT const struct ciaaw_saw_element_t ciaaw_saw_Sc [extern]

C API Sc.

7.3.2.96 ciaaw_saw_Se

ADD_IMPORT const struct ciaaw_saw_element_t ciaaw_saw_Se [extern]

C API Se.

7.3.2.97 ciaaw_saw_Sg

ADD_IMPORT const struct ciaaw_saw_element_t ciaaw_saw_Sg [extern]

C API Sg.

7.3.2.98 ciaaw_saw_Si

ADD_IMPORT const struct ciaaw_saw_element_t ciaaw_saw_Si [extern]

C API Si.

7.3.2.99 ciaaw_saw_Sm

ADD_IMPORT const struct ciaaw_saw_element_t ciaaw_saw_Sm [extern]

C API Sm.

7.3.2.100 ciaaw_saw_Sn

ADD_IMPORT const struct ciaaw_saw_element_t ciaaw_saw_Sn [extern]

C API Sn.

7.3.2.101 ciaaw_saw_Sr

ADD_IMPORT const struct ciaaw_saw_element_t ciaaw_saw_Sr [extern]

C API Sr.

7.3.2.102 ciaaw_saw_Ta

ADD_IMPORT const struct ciaaw_saw_element_t ciaaw_saw_Ta [extern]

C API Ta.

7.3.2.103 ciaaw_saw_Tb

ADD_IMPORT const struct ciaaw_saw_element_t ciaaw_saw_Tb [extern]

C API Tb.

7.3.2.104 ciaaw_saw_Tc

ADD_IMPORT const struct ciaaw_saw_element_t ciaaw_saw_Tc [extern]

C API Tc.

7.3.2.105 ciaaw_saw_Te

ADD_IMPORT const struct ciaaw_saw_element_t ciaaw_saw_Te [extern]

C API Te.

7.3.2.106 ciaaw_saw_Th

ADD_IMPORT const struct ciaaw_saw_element_t ciaaw_saw_Th [extern]

C API Th.

7.3.2.107 ciaaw_saw_Ti

ADD_IMPORT const struct ciaaw_saw_element_t ciaaw_saw_Ti [extern]

C API Ti.

7.3.2.108 ciaaw_saw_Tl

ADD_IMPORT const struct ciaaw_saw_element_t ciaaw_saw_Tl [extern]

C API Tl.

7.3.2.109 ciaaw_saw_Tm

ADD_IMPORT const struct ciaaw_saw_element_t ciaaw_saw_Tm [extern]

C API Tm.

7.3.2.110 ciaaw_saw_Ts

ADD_IMPORT const struct ciaaw_saw_element_t ciaaw_saw_Ts [extern]

C API Ts.

7.3.2.111 ciaaw_saw_U

ADD_IMPORT const struct ciaaw_saw_element_t ciaaw_saw_U [extern]

C API U.

7.3.2.112 ciaaw_saw_V

ADD_IMPORT const struct ciaaw_saw_element_t ciaaw_saw_V [extern]

C API V.

7.3.2.113 ciaaw_saw_W

ADD_IMPORT const struct ciaaw_saw_element_t ciaaw_saw_W [extern]

C API W.

7.3.2.114 ciaaw_saw_Xe

ADD_IMPORT const struct [ciaaw_saw_element_t](#) ciaaw_saw_Xe [extern]

C API Xe.

7.3.2.115 ciaaw_saw_Y

ADD_IMPORT const struct [ciaaw_saw_element_t](#) ciaaw_saw_Y [extern]

C API Y.

7.3.2.116 ciaaw_saw_Yb

ADD_IMPORT const struct [ciaaw_saw_element_t](#) ciaaw_saw_Yb [extern]

C API Yb.

7.3.2.117 ciaaw_saw_YEAR

ADD_IMPORT const int ciaaw_saw_YEAR [extern]

C API Publication year.

7.3.2.118 ciaaw_saw_Zn

ADD_IMPORT const struct [ciaaw_saw_element_t](#) ciaaw_saw_Zn [extern]

C API Zn.

7.3.2.119 ciaaw_saw_Zr

ADD_IMPORT const struct [ciaaw_saw_element_t](#) ciaaw_saw_Zr [extern]

C API Zr.

## 7.4 ciaaw_saw.h

Go to the documentation of this file.
```
00001
00006 #ifndef CIAAW_SAW_H
00007 #define CIAAW_SAW_H
00008 #if _MSC_VER
00009 #define ADD_IMPORT __declspec(dllimport)
00010 #else
00011 #define ADD_IMPORT
00012 #endif
00014 struct ciaaw_saw_element_t{
00015     char element[25];
00016     char symbol[9];
00017     int z;
00018     double saw_min;
00019     double saw_max;
00020     double saw;
00021     double saw_u;
00022     double asaw;
00023     double asaw_u;
00024 };
00025 ADD_IMPORT extern const int ciaaw_saw_YEAR;
00027 ADD_IMPORT extern const struct ciaaw_saw_element_t ciaaw_saw_H;
00028 ADD_IMPORT extern const struct ciaaw_saw_element_t ciaaw_saw_He;
00029 ADD_IMPORT extern const struct ciaaw_saw_element_t ciaaw_saw_Li;
00030 ADD_IMPORT extern const struct ciaaw_saw_element_t ciaaw_saw_Be;
00031 ADD_IMPORT extern const struct ciaaw_saw_element_t ciaaw_saw_B;
00032 ADD_IMPORT extern const struct ciaaw_saw_element_t ciaaw_saw_C;
00033 ADD_IMPORT extern const struct ciaaw_saw_element_t ciaaw_saw_N;
00034 ADD_IMPORT extern const struct ciaaw_saw_element_t ciaaw_saw_O;
00035 ADD_IMPORT extern const struct ciaaw_saw_element_t ciaaw_saw_F;
00036 ADD_IMPORT extern const struct ciaaw_saw_element_t ciaaw_saw_Ne;
00037 ADD_IMPORT extern const struct ciaaw_saw_element_t ciaaw_saw_Na;
00038 ADD_IMPORT extern const struct ciaaw_saw_element_t ciaaw_saw_Mg;
00039 ADD_IMPORT extern const struct ciaaw_saw_element_t ciaaw_saw_Al;
00040 ADD_IMPORT extern const struct ciaaw_saw_element_t ciaaw_saw_Si;
00041 ADD_IMPORT extern const struct ciaaw_saw_element_t ciaaw_saw_P;
00042 ADD_IMPORT extern const struct ciaaw_saw_element_t ciaaw_saw_S;
00043 ADD_IMPORT extern const struct ciaaw_saw_element_t ciaaw_saw_Cl;
00044 ADD_IMPORT extern const struct ciaaw_saw_element_t ciaaw_saw_Ar;
00045 ADD_IMPORT extern const struct ciaaw_saw_element_t ciaaw_saw_K;
00046 ADD_IMPORT extern const struct ciaaw_saw_element_t ciaaw_saw_Ca;
00047 ADD_IMPORT extern const struct ciaaw_saw_element_t ciaaw_saw_Sc;
00048 ADD_IMPORT extern const struct ciaaw_saw_element_t ciaaw_saw_Ti;
00049 ADD_IMPORT extern const struct ciaaw_saw_element_t ciaaw_saw_V;
00050 ADD_IMPORT extern const struct ciaaw_saw_element_t ciaaw_saw_Cr;
00051 ADD_IMPORT extern const struct ciaaw_saw_element_t ciaaw_saw_Mn;
00052 ADD_IMPORT extern const struct ciaaw_saw_element_t ciaaw_saw_Fe;
00053 ADD_IMPORT extern const struct ciaaw_saw_element_t ciaaw_saw_Co;
00054 ADD_IMPORT extern const struct ciaaw_saw_element_t ciaaw_saw_Ni;
00055 ADD_IMPORT extern const struct ciaaw_saw_element_t ciaaw_saw_Cu;
00056 ADD_IMPORT extern const struct ciaaw_saw_element_t ciaaw_saw_Zn;
00057 ADD_IMPORT extern const struct ciaaw_saw_element_t ciaaw_saw_Ga;
00058 ADD_IMPORT extern const struct ciaaw_saw_element_t ciaaw_saw_Ge;
00059 ADD_IMPORT extern const struct ciaaw_saw_element_t ciaaw_saw_As;
00060 ADD_IMPORT extern const struct ciaaw_saw_element_t ciaaw_saw_Se;
00061 ADD_IMPORT extern const struct ciaaw_saw_element_t ciaaw_saw_Br;
00062 ADD_IMPORT extern const struct ciaaw_saw_element_t ciaaw_saw_Kr;
00063 ADD_IMPORT extern const struct ciaaw_saw_element_t ciaaw_saw_Rb;
00064 ADD_IMPORT extern const struct ciaaw_saw_element_t ciaaw_saw_Sr;
00065 ADD_IMPORT extern const struct ciaaw_saw_element_t ciaaw_saw_Y;
00066 ADD_IMPORT extern const struct ciaaw_saw_element_t ciaaw_saw_Zr;
00067 ADD_IMPORT extern const struct ciaaw_saw_element_t ciaaw_saw_Nb;
00068 ADD_IMPORT extern const struct ciaaw_saw_element_t ciaaw_saw_Mo;
00069 ADD_IMPORT extern const struct ciaaw_saw_element_t ciaaw_saw_Tc;
00070 ADD_IMPORT extern const struct ciaaw_saw_element_t ciaaw_saw_Ru;
00071 ADD_IMPORT extern const struct ciaaw_saw_element_t ciaaw_saw_Rh;
00072 ADD_IMPORT extern const struct ciaaw_saw_element_t ciaaw_saw_Pd;
00073 ADD_IMPORT extern const struct ciaaw_saw_element_t ciaaw_saw_Ag;
00074 ADD_IMPORT extern const struct ciaaw_saw_element_t ciaaw_saw_Cd;
00075 ADD_IMPORT extern const struct ciaaw_saw_element_t ciaaw_saw_In;
00076 ADD_IMPORT extern const struct ciaaw_saw_element_t ciaaw_saw_Sn;
00077 ADD_IMPORT extern const struct ciaaw_saw_element_t ciaaw_saw_Sb;
00078 ADD_IMPORT extern const struct ciaaw_saw_element_t ciaaw_saw_Te;
00079 ADD_IMPORT extern const struct ciaaw_saw_element_t ciaaw_saw_I;
00080 ADD_IMPORT extern const struct ciaaw_saw_element_t ciaaw_saw_Xe;
00081 ADD_IMPORT extern const struct ciaaw_saw_element_t ciaaw_saw_Cs;
00082 ADD_IMPORT extern const struct ciaaw_saw_element_t ciaaw_saw_Ba;
00083 ADD_IMPORT extern const struct ciaaw_saw_element_t ciaaw_saw_La;
00084 ADD_IMPORT extern const struct ciaaw_saw_element_t ciaaw_saw_Ce;
00085 ADD_IMPORT extern const struct ciaaw_saw_element_t ciaaw_saw_Pr;
00086 ADD_IMPORT extern const struct ciaaw_saw_element_t ciaaw_saw_Nd;
00087 ADD_IMPORT extern const struct ciaaw_saw_element_t ciaaw_saw_Pm;
00088 ADD_IMPORT extern const struct ciaaw_saw_element_t ciaaw_saw_Sm;
```

```
00089 ADD_IMPORT extern const struct ciaaw_saw_element_t ciaaw_saw_Eu;
00090 ADD_IMPORT extern const struct ciaaw_saw_element_t ciaaw_saw_Gd;
00091 ADD_IMPORT extern const struct ciaaw_saw_element_t ciaaw_saw_Tb;
00092 ADD_IMPORT extern const struct ciaaw_saw_element_t ciaaw_saw_Dy;
00093 ADD_IMPORT extern const struct ciaaw_saw_element_t ciaaw_saw_Ho;
00094 ADD_IMPORT extern const struct ciaaw_saw_element_t ciaaw_saw_Er;
00095 ADD_IMPORT extern const struct ciaaw_saw_element_t ciaaw_saw_Tm;
00096 ADD_IMPORT extern const struct ciaaw_saw_element_t ciaaw_saw_Yb;
00097 ADD_IMPORT extern const struct ciaaw_saw_element_t ciaaw_saw_Lu;
00098 ADD_IMPORT extern const struct ciaaw_saw_element_t ciaaw_saw_Hf;
00099 ADD_IMPORT extern const struct ciaaw_saw_element_t ciaaw_saw_Ta;
00100 ADD_IMPORT extern const struct ciaaw_saw_element_t ciaaw_saw_W;
00101 ADD_IMPORT extern const struct ciaaw_saw_element_t ciaaw_saw_Re;
00102 ADD_IMPORT extern const struct ciaaw_saw_element_t ciaaw_saw_Os;
00103 ADD_IMPORT extern const struct ciaaw_saw_element_t ciaaw_saw_Ir;
00104 ADD_IMPORT extern const struct ciaaw_saw_element_t ciaaw_saw_Pt;
00105 ADD_IMPORT extern const struct ciaaw_saw_element_t ciaaw_saw_Au;
00106 ADD_IMPORT extern const struct ciaaw_saw_element_t ciaaw_saw_Hg;
00107 ADD_IMPORT extern const struct ciaaw_saw_element_t ciaaw_saw_Tl;
00108 ADD_IMPORT extern const struct ciaaw_saw_element_t ciaaw_saw_Pb;
00109 ADD_IMPORT extern const struct ciaaw_saw_element_t ciaaw_saw_Bi;
00110 ADD_IMPORT extern const struct ciaaw_saw_element_t ciaaw_saw_Po;
00111 ADD_IMPORT extern const struct ciaaw_saw_element_t ciaaw_saw_At;
00112 ADD_IMPORT extern const struct ciaaw_saw_element_t ciaaw_saw_Rn;
00113 ADD_IMPORT extern const struct ciaaw_saw_element_t ciaaw_saw_Fr;
00114 ADD_IMPORT extern const struct ciaaw_saw_element_t ciaaw_saw_Ra;
00115 ADD_IMPORT extern const struct ciaaw_saw_element_t ciaaw_saw_Ac;
00116 ADD_IMPORT extern const struct ciaaw_saw_element_t ciaaw_saw_Th;
00117 ADD_IMPORT extern const struct ciaaw_saw_element_t ciaaw_saw_Pa;
00118 ADD_IMPORT extern const struct ciaaw_saw_element_t ciaaw_saw_U;
00119 ADD_IMPORT extern const struct ciaaw_saw_element_t ciaaw_saw_Np;
00120 ADD_IMPORT extern const struct ciaaw_saw_element_t ciaaw_saw_Pu;
00121 ADD_IMPORT extern const struct ciaaw_saw_element_t ciaaw_saw_Am;
00122 ADD_IMPORT extern const struct ciaaw_saw_element_t ciaaw_saw_Cm;
00123 ADD_IMPORT extern const struct ciaaw_saw_element_t ciaaw_saw_Bk;
00124 ADD_IMPORT extern const struct ciaaw_saw_element_t ciaaw_saw_Cf;
00125 ADD_IMPORT extern const struct ciaaw_saw_element_t ciaaw_saw_Es;
00126 ADD_IMPORT extern const struct ciaaw_saw_element_t ciaaw_saw_Fm;
00127 ADD_IMPORT extern const struct ciaaw_saw_element_t ciaaw_saw_Md;
00128 ADD_IMPORT extern const struct ciaaw_saw_element_t ciaaw_saw_No;
00129 ADD_IMPORT extern const struct ciaaw_saw_element_t ciaaw_saw_Lr;
00130 ADD_IMPORT extern const struct ciaaw_saw_element_t ciaaw_saw_Rf;
00131 ADD_IMPORT extern const struct ciaaw_saw_element_t ciaaw_saw_Db;
00132 ADD_IMPORT extern const struct ciaaw_saw_element_t ciaaw_saw_Sg;
00133 ADD_IMPORT extern const struct ciaaw_saw_element_t ciaaw_saw_Bh;
00134 ADD_IMPORT extern const struct ciaaw_saw_element_t ciaaw_saw_Hs;
00135 ADD_IMPORT extern const struct ciaaw_saw_element_t ciaaw_saw_Mt;
00136 ADD_IMPORT extern const struct ciaaw_saw_element_t ciaaw_saw_Ds;
00137 ADD_IMPORT extern const struct ciaaw_saw_element_t ciaaw_saw_Rg;
00138 ADD_IMPORT extern const struct ciaaw_saw_element_t ciaaw_saw_Cn;
00139 ADD_IMPORT extern const struct ciaaw_saw_element_t ciaaw_saw_Nh;
00140 ADD_IMPORT extern const struct ciaaw_saw_element_t ciaaw_saw_Fl;
00141 ADD_IMPORT extern const struct ciaaw_saw_element_t ciaaw_saw_Mc;
00142 ADD_IMPORT extern const struct ciaaw_saw_element_t ciaaw_saw_Lv;
00143 ADD_IMPORT extern const struct ciaaw_saw_element_t ciaaw_saw_Ts;
00144 ADD_IMPORT extern const struct ciaaw_saw_element_t ciaaw_saw_Og;
00146 #endif
00147
```

7.5   ciaaw_version.h File Reference

C API Version.

This graph shows which files directly or indirectly include this file:
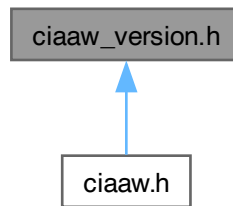
Functions

- char ∗ ciaaw_get_version (void)

  Get the version.

7.5.1 Detailed Description

C API Version.

7.5.2 Function Documentation

7.5.2.1 ciaaw_get_version()

```
char * ciaaw_get_version (
          void  ) [extern]
```

Get the version.

Returns

char pointer of the version string.

7.6 ciaaw_version.h

Go to the documentation of this file.
```
00001
00006 #ifndef ciaaw_VERSION_H
00007 #define ciaaw_VERSION_H
00008
00013 extern char* ciaaw_get_version(void);
00014 #endif
00015
```

7.7 ciaaw.f90 File Reference

Main module for CIAAW.

Modules

- module ciaaw

    Main module for CIAAW.

7.7.1 Detailed Description

Main module for CIAAW.

7.8 ciaaw_saw.f90 File Reference

Standard Atomic Weights Module.

Data Types

- type ciaaw__saw::element_t

    Object representing an element.
- type ciaaw__saw::capi_element_t

    Object representing an element.

Modules

- module ciaaw__saw

    Standard Atomic Weights - autogenerated.

Variables

- integer(int32), parameter, public **ciaaw__saw::year** = 2021

    Publication year.
- integer(c_int), bind(C, name="ciaaw_saw_YEAR"), public, protected **ciaaw__saw::capi_year** = YEAR

    C API Publication year.
- type(element_t), parameter, public **ciaaw__saw::h** =element_t("hydrogen", "H", 1, 1.00784d0, 1.00811d0, 1.00798d0, 0.00008d0, 1.0080d0, 0.0002d0)

    hydrogen.
- type(capi_element_t), bind(C, name="ciaaw_saw_H"), public, protected **ciaaw__saw::capi_h** =capi_element_t(["h","y","d","r","c _null_char, " "," "," "," "," "," "," "," "," "," "," "," "," "," "," "," "," "," "], ["H",c_null_char, " "," "," "," "," "," "," "], H%z, H%saw_max, H%saw_min, H%saw, H%saw_u, H%asaw, H%asaw_u)

    C API hydrogen.
- type(element_t), parameter, public **ciaaw__saw::he** =element_t("helium", "He", 2, nan, nan, 4.002602d0, 0.000002d0, 4.0026d0, 0.0001d0)

    helium.

- type(capi_element_t), bind(C, name="ciaaw_saw_He"), public, protected **ciaaw__saw::capi_he** =capi_element_t(["h","e","l","i",
_null_char, " "," "], ["H","e",c_null_char, " "," "," "," "," "," "],
He%z, He%saw_max, He%saw_min, He%saw, He%saw_u, He%asaw, He%asaw_u)

  C API helium.
- type(element_t), parameter, public **ciaaw__saw::li** =element_t("lithium", "Li", 3, 6.938d0, 6.997d0, 6.97d0,
0.02d0, 6.94d0, 0.06d0)

  lithium.
- type(capi_element_t), bind(C, name="ciaaw_saw_Li"), public, protected **ciaaw__saw::capi_li** =capi_element_t(["l","i","t","h","i",
_null_char, " "," "], ["L","i",c_null_char, " "," "," "," "," "," "], Li%z,
Li%saw_max, Li%saw_min, Li%saw, Li%saw_u, Li%asaw, Li%asaw_u)

  C API lithium.
- type(element_t), parameter, public **ciaaw__saw::be** =element_t("beryllium", "Be", 4, nan, nan, 9.0121831d0,
0.0000005d0, 9.0122d0, 0.00001d0)

  beryllium.
- type(capi_element_t), bind(C, name="ciaaw_saw_Be"), public, protected **ciaaw__saw::capi_be** =capi_element_t(["b","e","r","y",
_null_char, " "," "], ["B","e",c_null_char, " "," "," "," "," "," "], Be%z,
Be%saw_max, Be%saw_min, Be%saw, Be%saw_u, Be%asaw, Be%asaw_u)

  C API beryllium.
- type(element_t), parameter, public **ciaaw__saw::b** =element_t("boron", "B", 5, 10.806d0, 10.821d0, 10.↩
813d0, 0.005d0, 10.81d0, 0.02d0)

  boron.
- type(capi_element_t), bind(C, name="ciaaw_saw_B"), public, protected **ciaaw__saw::capi_b** =capi_element_t(["b","o","r","o","r
_null_char, " "," "], ["B",c_null_char, " "," "," "," "," "," "," "],
B%z, B%saw_max, B%saw_min, B%saw, B%saw_u, B%asaw, B%asaw_u)

  C API boron.
- type(element_t), parameter, public **ciaaw__saw::c** =element_t("carbon", "C", 6, 12.0096d0, 12.0116d0, 12.↩
0106d0, 0.0006d0, 12.011d0, 0.002d0)

  carbon.
- type(capi_element_t), bind(C, name="ciaaw_saw_C"), public, protected **ciaaw__saw::capi_c** =capi_element_t(["c","a","r","b","o
_null_char, " "," "], ["C",c_null_char, " "," "," "," "," "," "," "], C%z,
C%saw_max, C%saw_min, C%saw, C%saw_u, C%asaw, C%asaw_u)

  C API carbon.
- type(element_t), parameter, public **ciaaw__saw::n** =element_t("nitrogen", "N", 7, 14.00643d0, 14.00728d0,
14.0069d0, 0.0003d0, 14.007d0, 0.001d0)

  nitrogen.
- type(capi_element_t), bind(C, name="ciaaw_saw_N"), public, protected **ciaaw__saw::capi_n** =capi_element_t(["n","i","t","r","o"
_null_char, " "," "], ["N",c_null_char, " "," "," "," "," "," "," "], N%z,
N%saw_max, N%saw_min, N%saw, N%saw_u, N%asaw, N%asaw_u)

  C API nitrogen.
- type(element_t), parameter, public **ciaaw__saw::o** =element_t("oxygen", "O", 8, 15.99903d0, 15.99977d0,
15.9994d0, 0.0003d0, 15.999d0, 0.001d0)

  oxygen.
- type(capi_element_t), bind(C, name="ciaaw_saw_O"), public, protected **ciaaw__saw::capi_o** =capi_element_t(["o","x","y","g","
_null_char, " "," "], ["O",c_null_char, " "," "," "," "," "," "," "], O%z,
O%saw_max, O%saw_min, O%saw, O%saw_u, O%asaw, O%asaw_u)

  C API oxygen.
- type(element_t), parameter, public **ciaaw__saw::f** =element_t("fluorine", "F", 9, nan, nan, 18.998403162d0,
0.000000005d0, 18.998d0, 0.001d0)

  fluorine.
- type(capi_element_t), bind(C, name="ciaaw_saw_F"), public, protected **ciaaw__saw::capi_f** =capi_element_t(["f","l","u","o","r",
_null_char, " "," "], ["F",c_null_char, " "," "," "," "," "," "," "], F%z,
F%saw_max, F%saw_min, F%saw, F%saw_u, F%asaw, F%asaw_u)

  C API fluorine.

- type([element_t](#)), parameter, public **ciaaw__saw::ne** =[element_t](#)("neon", "Ne", 10, nan, nan, 20.1797d0, 0.↩
  0006d0, 20.180d0, 0.001d0)

    neon.
- type([capi_element_t](#)), bind(C, name="ciaaw_saw_Ne"), public, protected **ciaaw__saw::capi_ne** =[capi_element_t](#)(["n","e","o","n"
  _null_char, " "," " "], ["N","e",c_null_char, " "," "," "," "," "," " "],
  Ne%z, Ne%saw_max, Ne%saw_min, Ne%saw, Ne%saw_u, Ne%asaw, Ne%asaw_u)

    C API neon.
- type([element_t](#)), parameter, public **ciaaw__saw::na** =[element_t](#)("sodium", "Na", 11, nan, nan, 22.↩
  98976928d0, 0.00000002d0, 22.990d0, 0.001d0)

    sodium.
- type([capi_element_t](#)), bind(C, name="ciaaw_saw_Na"), public, protected **ciaaw__saw::capi_na** =[capi_element_t](#)(["s","o","d","i"
  _null_char, " "," " "], ["N","a",c_null_char, " "," "," "," "," "," " "],
  Na%z, Na%saw_max, Na%saw_min, Na%saw, Na%saw_u, Na%asaw, Na%asaw_u)

    C API sodium.
- type([element_t](#)), parameter, public **ciaaw__saw::mg** =[element_t](#)("magnesium", "Mg", 12, 24.304d0, 24.↩
  307d0, 24.3055d0, 0.0009d0, 24.305d0, 0.002d0)

    magnesium.
- type([capi_element_t](#)), bind(C, name="ciaaw_saw_Mg"), public, protected **ciaaw__saw::capi_mg**
  =[capi_element_t](#)(["m","a","g","n","e","s","i","u","m",c_null_char, " "," "," "," "," "," "," "," "," "," "," "," "," "," "
  "," "], ["M","g",c_null_char, " "," "," "," "," " "], Mg%z, Mg%saw_max, Mg%saw_min, Mg%saw, Mg%saw_u,
  Mg%asaw, Mg%asaw_u)

    C API magnesium.
- type([element_t](#)), parameter, public **ciaaw__saw::al** =[element_t](#)("aluminium", "Al", 13, nan, nan, 26.↩
  9815384d0, 0.0000003d0, 26.982d0, 0.001d0)

    aluminium.
- type([capi_element_t](#)), bind(C, name="ciaaw_saw_Al"), public, protected **ciaaw__saw::capi_al** =[capi_element_t](#)(["a","l","u","m",
  _null_char, " "," "," "," "," "," "," "," "," "," "," "," "," "," "," " "], ["A","l",c_null_char, " "," "," "," "," " "], Al%z,
  Al%saw_max, Al%saw_min, Al%saw, Al%saw_u, Al%asaw, Al%asaw_u)

    C API aluminium.
- type([element_t](#)), parameter, public **ciaaw__saw::si** =[element_t](#)("silicon", "Si", 14, 28.084d0, 28.086d0, 28.↩
  0850d0, 0.0006d0, 28.085d0, 0.001d0)

    silicon.
- type([capi_element_t](#)), bind(C, name="ciaaw_saw_Si"), public, protected **ciaaw__saw::capi_si** =[capi_element_t](#)(["s","i","l","i","c"
  _null_char, " "," "," "," "," "," "," "," "," "," "," "," "," "," "," "," " "], ["S","i",c_null_char, " "," "," "," "," " "], Si%z,
  Si%saw_max, Si%saw_min, Si%saw, Si%saw_u, Si%asaw, Si%asaw_u)

    C API silicon.
- type([element_t](#)), parameter, public **ciaaw__saw::p** =[element_t](#)("phosphorous", "P", 15, nan, nan, 30.↩
  973761998d0, 0.000000005d0, 30.974d0, 0.001d0)

    phosphorous.
- type([capi_element_t](#)), bind(C, name="ciaaw_saw_P"), public, protected **ciaaw__saw::capi_p** =[capi_element_t](#)(["p","h","o","s","
  _null_char, " "," "," "," "," "," "," "," "," "," "," "," "," " "], ["P",c_null_char, " "," "," "," "," "," " "], P%z, P%saw_max,
  P%saw_min, P%saw, P%saw_u, P%asaw, P%asaw_u)

    C API phosphorous.
- type([element_t](#)), parameter, public **ciaaw__saw::s** =[element_t](#)("sulfur", "S", 16, 32.059d0, 32.076d0, 32.↩
  067d0, 0.005d0, 32.06d0, 0.02d0)

    sulfur.
- type([capi_element_t](#)), bind(C, name="ciaaw_saw_S"), public, protected **ciaaw__saw::capi_s** =[capi_element_t](#)(["s","u","l","f","u"
  _null_char, " "," "," "," "," "," "," "," "," "," "," "," "," "," "," "," "," " "], ["S",c_null_char, " "," "," "," "," "," " "], S%z,
  S%saw_max, S%saw_min, S%saw, S%saw_u, S%asaw, S%asaw_u)

    C API sulfur.
- type([element_t](#)), parameter, public **ciaaw__saw::cl** =[element_t](#)("chlorine", "Cl", 17, 35.446d0, 35.457d0,
  35.451d0, 0.004d0, 35.45d0, 0.01d0)

    chlorine.

- type([capi_element_t](#)), bind(C, name="ciaaw_saw_Cl"), public, protected **ciaaw__saw::capi_cl** =[capi_element_t](#)(["c","h","l","o","
  _null_char, " "," "," "," "," "," "," "," "," "," "," "," "," "," "," "," "," "," " "], ["C","l",c_null_char, " "," "," "," "," " "], Cl%z,
  Cl%saw_max, Cl%saw_min, Cl%saw, Cl%saw_u, Cl%asaw, Cl%asaw_u)

    C API chlorine.
- type([element_t](#)), parameter, public **ciaaw__saw::ar** =[element_t](#)("argon", "Ar", 18, 39.792d0, 39.963d0, 39.↩
  88d0, 0.05d0, 39.95d0, 0.16d0)

    argon.
- type([capi_element_t](#)), bind(C, name="ciaaw_saw_Ar"), public, protected **ciaaw__saw::capi_ar** =[capi_element_t](#)(["a","r","g","o",
  _null_char, " "," "," "," "," "," "," "," "," "," "," "," "," "," "," "," "," "," " "], ["A","r",c_null_char, " "," "," "," "," " "],
  Ar%z, Ar%saw_max, Ar%saw_min, Ar%saw, Ar%saw_u, Ar%asaw, Ar%asaw_u)

    C API argon.
- type([element_t](#)), parameter, public **ciaaw__saw::k** =[element_t](#)("potassium", "K", 19, nan, nan, 39.0983d0,
  0.0001d0, 39.098d0, 0.001d0)

    potassium.
- type([capi_element_t](#)), bind(C, name="ciaaw_saw_K"), public, protected **ciaaw__saw::capi_k** =[capi_element_t](#)(["p","o","t","a","s
  _null_char, " "," "," "," "," "," "," "," "," "," "," "," "," "," "," "," "," " "], ["K",c_null_char, " "," "," "," "," "," " "], K%z,
  K%saw_max, K%saw_min, K%saw, K%saw_u, K%asaw, K%asaw_u)

    C API potassium.
- type([element_t](#)), parameter, public **ciaaw__saw::ca** =[element_t](#)("calcium", "Ca", 20, nan, nan, 40.078d0,
  0.004d0, 40.078d0, 0.004d0)

    calcium.
- type([capi_element_t](#)), bind(C, name="ciaaw_saw_Ca"), public, protected **ciaaw__saw::capi_ca** =[capi_element_t](#)(["c","a","l","c"
  _null_char, " "," "," "," "," "," "," "," "," "," "," "," "," "," "," "," "," " "], ["C","a",c_null_char, " "," "," "," "," " "], Ca%z,
  Ca%saw_max, Ca%saw_min, Ca%saw, Ca%saw_u, Ca%asaw, Ca%asaw_u)

    C API calcium.
- type([element_t](#)), parameter, public **ciaaw__saw::sc** =[element_t](#)("scandium", "Sc", 21, nan, nan, 44.↩
  955907d0, 0.000004d0, 44.956d0, 0.001d0)

    scandium.
- type([capi_element_t](#)), bind(C, name="ciaaw_saw_Sc"), public, protected **ciaaw__saw::capi_sc** =[capi_element_t](#)(["s","c","a","n"
  _null_char, " "," "," "," "," "," "," "," "," "," "," "," "," "," "," "," "," " "], ["S","c",c_null_char, " "," "," "," "," " "], Sc%z,
  Sc%saw_max, Sc%saw_min, Sc%saw, Sc%saw_u, Sc%asaw, Sc%asaw_u)

    C API scandium.
- type([element_t](#)), parameter, public **ciaaw__saw::ti** =[element_t](#)("titanium", "Ti", 22, nan, nan, 47.867d0, 0.↩
  001d0, 47.867d0, 0.001d0)

    titanium.
- type([capi_element_t](#)), bind(C, name="ciaaw_saw_Ti"), public, protected **ciaaw__saw::capi_ti** =[capi_element_t](#)(["t","i","t","a","n"
  _null_char, " "," "," "," "," "," "," "," "," "," "," "," "," "," "," "," "," " "], ["T","i",c_null_char, " "," "," "," "," " "], Ti%z,
  Ti%saw_max, Ti%saw_min, Ti%saw, Ti%saw_u, Ti%asaw, Ti%asaw_u)

    C API titanium.
- type([element_t](#)), parameter, public **ciaaw__saw::v** =[element_t](#)("vanadium", "V", 23, nan, nan, 50.9415d0,
  0.0001d0, 50.942d0, 0.001d0)

    vanadium.
- type([capi_element_t](#)), bind(C, name="ciaaw_saw_V"), public, protected **ciaaw__saw::capi_v** =[capi_element_t](#)(["v","a","n","a","
  _null_char, " "," "," "," "," "," "," "," "," "," "," "," "," "," "," "," "," " "], ["V",c_null_char, " "," "," "," "," "," " "], V%z,
  V%saw_max, V%saw_min, V%saw, V%saw_u, V%asaw, V%asaw_u)

    C API vanadium.
- type([element_t](#)), parameter, public **ciaaw__saw::cr** =[element_t](#)("chromium", "Cr", 24, nan, nan, 51.9961d0,
  0.0006d0, 51.996d0, 0.001d0)

    chromium.
- type([capi_element_t](#)), bind(C, name="ciaaw_saw_Cr"), public, protected **ciaaw__saw::capi_cr** =[capi_element_t](#)(["c","h","r","o",
  _null_char, " "," "," "," "," "," "," "," "," "," "," "," "," "," "," "," "," " "], ["C","r",c_null_char, " "," "," "," "," " "], Cr%z,
  Cr%saw_max, Cr%saw_min, Cr%saw, Cr%saw_u, Cr%asaw, Cr%asaw_u)

    C API chromium.

- type([element_t](#)), parameter, public **ciaaw__saw::mn** =[element_t](#)("manganese", "Mn", 25, nan, nan, 54.↩
  938043d0, 0.000002d0, 54.938d0, 0.001d0)

    manganese.
- type([capi_element_t](#)), bind(C, name="ciaaw_saw_Mn"), public, protected **ciaaw__saw::capi_mn**
  =[capi_element_t](#)(["m","a","n","g","a","n","e","s","e",c_null_char, " "," "," "," "," "," "," "," "," "," "," "
  "," "], ["M","n",c_null_char, " "," "," "," "," "," "], Mn%z, Mn%saw_max, Mn%saw_min, Mn%saw, Mn%saw_u,
  Mn%asaw, Mn%asaw_u)

    C API manganese.
- type([element_t](#)), parameter, public **ciaaw__saw::fe** =[element_t](#)("iron", "Fe", 26, nan, nan, 55.845d0, 0.002d0,
  55.845d0, 0.002d0)

    iron.
- type([capi_element_t](#)), bind(C, name="ciaaw_saw_Fe"), public, protected **ciaaw__saw::capi_fe** =[capi_element_t](#)(["i","r","o","n",c
  _null_char, " "," "," "," "," "," "," "," "," "," "," "," "," "," "," "," "," "], ["F","e",c_null_char, " "," "," "," "," "," "],
  Fe%z, Fe%saw_max, Fe%saw_min, Fe%saw, Fe%saw_u, Fe%asaw, Fe%asaw_u)

    C API iron.
- type([element_t](#)), parameter, public **ciaaw__saw::co** =[element_t](#)("cobalt", "Co", 27, nan, nan, 58.933194d0,
  0.000003d0, 58.933d0, 0.001d0)

    cobalt.
- type([capi_element_t](#)), bind(C, name="ciaaw_saw_Co"), public, protected **ciaaw__saw::capi_co** =[capi_element_t](#)(["c","o","b","a
  _null_char, " "," "," "," "," "," "," "," "," "," "," "," "," "," "," "," "," "], ["C","o",c_null_char, " "," "," "," "," "," "],
  Co%z, Co%saw_max, Co%saw_min, Co%saw, Co%saw_u, Co%asaw, Co%asaw_u)

    C API cobalt.
- type([element_t](#)), parameter, public **ciaaw__saw::ni** =[element_t](#)("nickel", "Ni", 28, nan, nan, 58.6934d0, 0.↩
  0004d0, 58.693d0, 0.001d0)

    nickel.
- type([capi_element_t](#)), bind(C, name="ciaaw_saw_Ni"), public, protected **ciaaw__saw::capi_ni** =[capi_element_t](#)(["n","i","c","k","
  _null_char, " "," "," "," "," "," "," "," "," "," "," "," "," "," "," "," "," "], ["N","i",c_null_char, " "," "," "," "," "," "], Ni%z,
  Ni%saw_max, Ni%saw_min, Ni%saw, Ni%saw_u, Ni%asaw, Ni%asaw_u)

    C API nickel.
- type([element_t](#)), parameter, public **ciaaw__saw::cu** =[element_t](#)("copper", "Cu", 29, nan, nan, 63.546d0, 0.↩
  003d0, 63.546d0, 0.003d0)

    copper.
- type([capi_element_t](#)), bind(C, name="ciaaw_saw_Cu"), public, protected **ciaaw__saw::capi_cu** =[capi_element_t](#)(["c","o","p","p
  _null_char, " "," "," "," "," "," "," "," "," "," "," "," "," "," "," "," "," "], ["C","u",c_null_char, " "," "," "," "," "," "],
  Cu%z, Cu%saw_max, Cu%saw_min, Cu%saw, Cu%saw_u, Cu%asaw, Cu%asaw_u)

    C API copper.
- type([element_t](#)), parameter, public **ciaaw__saw::zn** =[element_t](#)("zinc", "Zn", 30, nan, nan, 65.38d0, 0.02d0,
  65.38d0, 0.02d0)

    zinc.
- type([capi_element_t](#)), bind(C, name="ciaaw_saw_Zn"), public, protected **ciaaw__saw::capi_zn** =[capi_element_t](#)(["z","i","n","c",
  _null_char, " "," "," "," "," "," "," "," "," "," "," "," "," "," "," "," "," "], ["Z","n",c_null_char, " "," "," "," "," "," "],
  Zn%z, Zn%saw_max, Zn%saw_min, Zn%saw, Zn%saw_u, Zn%asaw, Zn%asaw_u)

    C API zinc.
- type([element_t](#)), parameter, public **ciaaw__saw::ga** =[element_t](#)("gallium", "Ga", 31, nan, nan, 69.723d0,
  0.001d0, 69.723d0, 0.001d0)

    gallium.
- type([capi_element_t](#)), bind(C, name="ciaaw_saw_Ga"), public, protected **ciaaw__saw::capi_ga** =[capi_element_t](#)(["g","a","l","l",
  _null_char, " "," "," "," "," "," "," "," "," "," "," "," "," "," "," "," "," "], ["G","a",c_null_char, " "," "," "," "," "," "], Ga%z,
  Ga%saw_max, Ga%saw_min, Ga%saw, Ga%saw_u, Ga%asaw, Ga%asaw_u)

    C API gallium.
- type([element_t](#)), parameter, public **ciaaw__saw::ge** =[element_t](#)("germanium", "Ge", 32, nan, nan, 72.630d0,
  0.008d0, 72.630d0, 0.008d0)

    germanium.

- type([capi_element_t](#)), bind(C, name="ciaaw_saw_Ge"), public, protected **ciaaw__saw::capi_ge** =[capi_element_t](#)(["g","e","r","m" _null_char, " "," "," "," "," "," "," "," "," "," "," "," "," "," "," " "], ["G","e",c_null_char, " "," "," "," "," " "], Ge%z, Ge%saw_max, Ge%saw_min, Ge%saw, Ge%saw_u, Ge%asaw, Ge%asaw_u)

  C API germanium.
- type([element_t](#)), parameter, public **ciaaw__saw::as** =[element_t](#)("arsenic", "As", 33, nan, nan, 74.921595d0, 0.000006d0, 74.922d0, 0.001d0)

  arsenic.
- type([capi_element_t](#)), bind(C, name="ciaaw_saw_As"), public, protected **ciaaw__saw::capi_as** =[capi_element_t](#)(["a","r","s","e" _null_char, " "," "," "," "," "," "," "," "," "," "," "," "," "," "," "," " "], ["A","s",c_null_char, " "," "," "," "," " "], As%z, As%saw_max, As%saw_min, As%saw, As%saw_u, As%asaw, As%asaw_u)

  C API arsenic.
- type([element_t](#)), parameter, public **ciaaw__saw::se** =[element_t](#)("selenium", "Se", 34, nan, nan, 78.971d0, 0.008d0, 78.971d0, 0.008d0)

  selenium.
- type([capi_element_t](#)), bind(C, name="ciaaw_saw_Se"), public, protected **ciaaw__saw::capi_se** =[capi_element_t](#)(["s","e","l","e" _null_char, " "," "," "," "," "," "," "," "," "," "," "," "," "," "," " "], ["S","e",c_null_char, " "," "," "," "," " "], Se%z, Se%saw_max, Se%saw_min, Se%saw, Se%saw_u, Se%asaw, Se%asaw_u)

  C API selenium.
- type([element_t](#)), parameter, public **ciaaw__saw::br** =[element_t](#)("bromine", "Br", 35, 79.901d0, 79.907d0, 79.904d0, 0.002d0, 79.904d0, 0.003d0)

  bromine.
- type([capi_element_t](#)), bind(C, name="ciaaw_saw_Br"), public, protected **ciaaw__saw::capi_br** =[capi_element_t](#)(["b","r","o","m" _null_char, " "," "," "," "," "," "," "," "," "," "," "," "," "," "," "," " "], ["B","r",c_null_char, " "," "," "," "," " "], Br%z, Br%saw_max, Br%saw_min, Br%saw, Br%saw_u, Br%asaw, Br%asaw_u)

  C API bromine.
- type([element_t](#)), parameter, public **ciaaw__saw::kr** =[element_t](#)("krypton", "Kr", 36, nan, nan, 83.798d0, 0.↩ 002d0, 83.798d0, 0.002d0)

  krypton.
- type([capi_element_t](#)), bind(C, name="ciaaw_saw_Kr"), public, protected **ciaaw__saw::capi_kr** =[capi_element_t](#)(["k","r","y","p", _null_char, " "," "," "," "," "," "," "," "," "," "," "," "," "," "," "," " "], ["K","r",c_null_char, " "," "," "," "," " "], Kr%z, Kr%saw_max, Kr%saw_min, Kr%saw, Kr%saw_u, Kr%asaw, Kr%asaw_u)

  C API krypton.
- type([element_t](#)), parameter, public **ciaaw__saw::rb** =[element_t](#)("rubidium", "Rb", 37, nan, nan, 85.4678d0, 0.0003d0, 85.468d0, 0.001d0)

  rubidium.
- type([capi_element_t](#)), bind(C, name="ciaaw_saw_Rb"), public, protected **ciaaw__saw::capi_rb** =[capi_element_t](#)(["r","u","b","i", _null_char, " "," "," "," "," "," "," "," "," "," "," "," "," "," "," " "], ["R","b",c_null_char, " "," "," "," "," " "], Rb%z, Rb%saw_max, Rb%saw_min, Rb%saw, Rb%saw_u, Rb%asaw, Rb%asaw_u)

  C API rubidium.
- type([element_t](#)), parameter, public **ciaaw__saw::sr** =[element_t](#)("strontium", "Sr", 38, nan, nan, 87.62d0, 0.↩ 01d0, 87.62d0, 0.01d0)

  strontium.
- type([capi_element_t](#)), bind(C, name="ciaaw_saw_Sr"), public, protected **ciaaw__saw::capi_sr** =[capi_element_t](#)(["s","t","r","o", _null_char, " "," "," "," "," "," "," "," "," "," "," "," "," "," " "], ["S","r",c_null_char, " "," "," "," "," " "], Sr%z, Sr%saw_max, Sr%saw_min, Sr%saw, Sr%saw_u, Sr%asaw, Sr%asaw_u)

  C API strontium.
- type([element_t](#)), parameter, public **ciaaw__saw::y** =[element_t](#)("yttrium", "Y", 39, nan, nan, 88.905838d0, 0.000002d0, 88.906d0, 0.001d0)

  yttrium.
- type([capi_element_t](#)), bind(C, name="ciaaw_saw_Y"), public, protected **ciaaw__saw::capi_y** =[capi_element_t](#)(["y","t","t","r","i", _null_char, " "," "," "," "," "," "," "," "," "," "," "," "," "," "," "," " "], ["Y",c_null_char, " "," "," "," "," "," " "], Y%z, Y%saw_max, Y%saw_min, Y%saw, Y%saw_u, Y%asaw, Y%asaw_u)

  C API yttrium.

- type(element_t), parameter, public **ciaaw__saw::zr** =element_t("zirconium", "Zr", 40, nan, nan, 91.224d0, 0.002d0, 91.224d0, 0.002d0)

    zirconium.
- type(capi_element_t), bind(C, name="ciaaw_saw_Zr"), public, protected **ciaaw__saw::capi_zr** =capi_element_t(["z","i","r","c", _null_char, " "," "," "," "," "," "," "," "," "," "," "," "," "," "], ["Z","r",c_null_char, " "," "," "," "," "," "], Zr%z, Zr%saw_max, Zr%saw_min, Zr%saw, Zr%saw_u, Zr%asaw, Zr%asaw_u)

    C API zirconium.
- type(element_t), parameter, public **ciaaw__saw::nb** =element_t("nobium", "Nb", 41, nan, nan, 92.90637d0, 0.00001d0, 92.906d0, 0.001d0)

    nobium.
- type(capi_element_t), bind(C, name="ciaaw_saw_Nb"), public, protected **ciaaw__saw::capi_nb** =capi_element_t(["n","o","b","i", _null_char, " "," "," "," "," "," "," "," "," "," "," "," "," "," "," "," "], ["N","b",c_null_char, " "," "," "," "," "," "], Nb%z, Nb%saw_max, Nb%saw_min, Nb%saw, Nb%saw_u, Nb%asaw, Nb%asaw_u)

    C API nobium.
- type(element_t), parameter, public **ciaaw__saw::mo** =element_t("molybdenum", "Mo", 42, nan, nan, 95.←
95d0, 0.01d0, 95.95d0, 0.01d0)

    molybdenum.
- type(capi_element_t), bind(C, name="ciaaw_saw_Mo"), public, protected **ciaaw__saw::capi_mo** =capi_element_t(["m","o","l","y","b","d","e","n","u","m",c_null_char, " "," "," "," "," "," "," "," "," "," "," "," "," " "," "], ["M","o",c_null_char, " "," "," "," "," "," "], Mo%z, Mo%saw_max, Mo%saw_min, Mo%saw, Mo%saw_u, Mo%asaw, Mo%asaw_u)

    C API molybdenum.
- type(element_t), parameter, public **ciaaw__saw::tc** =element_t("technetium", "Tc", 43, nan, nan, nan, nan, nan, nan)

    technetium.
- type(capi_element_t), bind(C, name="ciaaw_saw_Tc"), public, protected **ciaaw__saw::capi_tc** =capi_element_t(["t","e","c","h", _null_char, " "," "," "," "," "," "," "," "," "," "," "," "," "," "], ["T","c",c_null_char, " "," "," "," "," "," "], Tc%z, Tc%saw_max, Tc%saw_min, Tc%saw, Tc%saw_u, Tc%asaw, Tc%asaw_u)

    C API technetium.
- type(element_t), parameter, public **ciaaw__saw::ru** =element_t("ruthenium", "Ru", 44, nan, nan, 101.07d0, 0.02d0, 101.07d0, 0.02d0)

    ruthenium.
- type(capi_element_t), bind(C, name="ciaaw_saw_Ru"), public, protected **ciaaw__saw::capi_ru** =capi_element_t(["r","u","t","h", _null_char, " "," "," "," "," "," "," "," "," "," "," "," "," "," "], ["R","u",c_null_char, " "," "," "," "," "," "], Ru%z, Ru%saw_max, Ru%saw_min, Ru%saw, Ru%saw_u, Ru%asaw, Ru%asaw_u)

    C API ruthenium.
- type(element_t), parameter, public **ciaaw__saw::rh** =element_t("rhodium", "Rh", 45, nan, nan, 102.90549d0, 0.00002d0, 102.91d0, 0.01d0)

    rhodium.
- type(capi_element_t), bind(C, name="ciaaw_saw_Rh"), public, protected **ciaaw__saw::capi_rh** =capi_element_t(["r","h","o","d", _null_char, " "," "," "," "," "," "," "," "," "," "," "," "," "," "," "," "], ["R","h",c_null_char, " "," "," "," "," "," "], Rh%z, Rh%saw_max, Rh%saw_min, Rh%saw, Rh%saw_u, Rh%asaw, Rh%asaw_u)

    C API rhodium.
- type(element_t), parameter, public **ciaaw__saw::pd** =element_t("palladium", "Pd", 46, nan, nan, 106.42d0, 0.01d0, 106.42d0, 0.01d0)

    palladium.
- type(capi_element_t), bind(C, name="ciaaw_saw_Pd"), public, protected **ciaaw__saw::capi_pd** =capi_element_t(["p","a","l","l", _null_char, " "," "," "," "," "," "," "," "," "," "," "," "," "," "], ["P","d",c_null_char, " "," "," "," "," "," "], Pd%z, Pd%saw_max, Pd%saw_min, Pd%saw, Pd%saw_u, Pd%asaw, Pd%asaw_u)

    C API palladium.
- type(element_t), parameter, public **ciaaw__saw::ag** =element_t("silver", "Ag", 47, nan, nan, 107.8682d0, 0.0002d0, 107.87d0, 0.01d0)

    silver.

- type(capi_element_t), bind(C, name="ciaaw_saw_Ag"), public, protected **ciaaw__saw::capi_ag** =capi_element_t(["s","i","l","v",
  _null_char, " "," " "], ["A","g",c_null_char, " "," "," "," "," "," " "],
  Ag%z, Ag%saw_max, Ag%saw_min, Ag%saw, Ag%saw_u, Ag%asaw, Ag%asaw_u)

    C API silver.
- type(element_t), parameter, public **ciaaw__saw::cd** =element_t("cadmium", "Cd", 48, nan, nan, 112.414d0,
  0.004d0, 112.41d0, 0.01d0)

    cadmium.
- type(capi_element_t), bind(C, name="ciaaw_saw_Cd"), public, protected **ciaaw__saw::capi_cd** =capi_element_t(["c","a","d","m
  _null_char, " "," "," "," "," "," "," "," "," "," "," "," "," "," "," "," "," "," "," " "], ["C","d",c_null_char, " "," "," "," "," "," " "], Cd%z,
  Cd%saw_max, Cd%saw_min, Cd%saw, Cd%saw_u, Cd%asaw, Cd%asaw_u)

    C API cadmium.
- type(element_t), parameter, public **ciaaw__saw::in** =element_t("indium", "In", 49, nan, nan, 114.818d0, 0.←
  001d0, 114.82d0, 0.01d0)

    indium.
- type(capi_element_t), bind(C, name="ciaaw_saw_In"), public, protected **ciaaw__saw::capi_in** =capi_element_t(["i","n","d","i","u
  _null_char, " "," " "], ["I","n",c_null_char, " "," "," "," "," "," " "], In%z,
  In%saw_max, In%saw_min, In%saw, In%saw_u, In%asaw, In%asaw_u)

    C API indium.
- type(element_t), parameter, public **ciaaw__saw::sn** =element_t("tin", "Sn", 50, nan, nan, 118.70d0, 0.007d0,
  118.71d0, 0.01d0)

    tin.
- type(capi_element_t), bind(C, name="ciaaw_saw_Sn"), public, protected **ciaaw__saw::capi_sn** =capi_element_t(["t","i","n",c←
  _null_char, " "," " "], ["S","n",c_null_char, " "," "," "," "," "," "
  "], Sn%z, Sn%saw_max, Sn%saw_min, Sn%saw, Sn%saw_u, Sn%asaw, Sn%asaw_u)

    C API tin.
- type(element_t), parameter, public **ciaaw__saw::sb** =element_t("antimony", "Sb", 51, nan, nan, 121.760d0,
  0.001d0, 121.76d0, 0.01d0)

    antimony.
- type(capi_element_t), bind(C, name="ciaaw_saw_Sb"), public, protected **ciaaw__saw::capi_sb** =capi_element_t(["a","n","t","i",
  _null_char, " "," "," "," "," "," "," "," "," "," "," "," "," "," "," "," "," "," "," " "], ["S","b",c_null_char, " "," "," "," "," "," " "], Sb%z,
  Sb%saw_max, Sb%saw_min, Sb%saw, Sb%saw_u, Sb%asaw, Sb%asaw_u)

    C API antimony.
- type(element_t), parameter, public **ciaaw__saw::te** =element_t("tellurium", "Te", 52, nan, nan, 127.60d0,
  0.03d0, 127.60d0, 0.03d0)

    tellurium.
- type(capi_element_t), bind(C, name="ciaaw_saw_Te"), public, protected **ciaaw__saw::capi_te** =capi_element_t(["t","e","l","l","u
  _null_char, " "," "," "," "," "," "," "," "," "," "," "," "," "," "," "," "," "," " "], ["T","e",c_null_char, " "," "," "," "," "," " "], Te%z,
  Te%saw_max, Te%saw_min, Te%saw, Te%saw_u, Te%asaw, Te%asaw_u)

    C API tellurium.
- type(element_t), parameter, public **ciaaw__saw::i** =element_t("iodine", "I", 53, nan, nan, 126.90447d0, 0.←
  00003d0, 126.90d0, 0.01d0)

    iodine.
- type(capi_element_t), bind(C, name="ciaaw_saw_I"), public, protected **ciaaw__saw::capi_i** =capi_element_t(["i","o","d","i","n","
  _null_char, " "," " "], ["I",c_null_char, " "," "," "," "," "," "," " "], I%z,
  I%saw_max, I%saw_min, I%saw, I%saw_u, I%asaw, I%asaw_u)

    C API iodine.
- type(element_t), parameter, public **ciaaw__saw::xe** =element_t("xenon", "Xe", 54, nan, nan, 131.293d0, 0.←
  006d0, 131.29d0, 0.01d0)

    xenon.
- type(capi_element_t), bind(C, name="ciaaw_saw_Xe"), public, protected **ciaaw__saw::capi_xe** =capi_element_t(["x","e","n","o
  _null_char, " "," " "], ["X","e",c_null_char, " "," "," "," "," "," " "],
  Xe%z, Xe%saw_max, Xe%saw_min, Xe%saw, Xe%saw_u, Xe%asaw, Xe%asaw_u)

    C API xenon.

- type(element_t), parameter, public **ciaaw__saw::cs** =element_t("caesium", "Cs", 55, nan, nan, 132.↩
  90545196d0, 0.00000006d0, 132.91d0, 0.01d0)

    caesium.
- type(capi_element_t), bind(C, name="ciaaw_saw_Cs"), public, protected **ciaaw__saw::capi_cs** =capi_element_t(["c","a","e","s"
  _null_char, " "," "," "," "," "," "," "," "," "," "," "," "," "," "," "," "," "," "], ["C","s",c_null_char, " "," "," "," "," "], Cs%z,
  Cs%saw_max, Cs%saw_min, Cs%saw, Cs%saw_u, Cs%asaw, Cs%asaw_u)

    C API caesium.
- type(element_t), parameter, public **ciaaw__saw::ba** =element_t("barium", "Ba", 56, nan, nan, 137.327d0,
  0.007d0, 137.33d0, 0.01d0)

    barium.
- type(capi_element_t), bind(C, name="ciaaw_saw_Ba"), public, protected **ciaaw__saw::capi_ba** =capi_element_t(["b","a","r","i",
  _null_char, " "," "," "," "," "," "," "," "," "," "," "," "," "," "," "," "," "," "], ["B","a",c_null_char, " "," "," "," "," "],
  Ba%z, Ba%saw_max, Ba%saw_min, Ba%saw, Ba%saw_u, Ba%asaw, Ba%asaw_u)

    C API barium.
- type(element_t), parameter, public **ciaaw__saw::la** =element_t("lanthanum", "La", 57, nan, nan, 138.↩
  90547d0, 0.00007d0, 138.91d0, 0.01d0)

    lanthanum.
- type(capi_element_t), bind(C, name="ciaaw_saw_La"), public, protected **ciaaw__saw::capi_la** =capi_element_t(["l","a","n","t",
  _null_char, " "," "," "," "," "," "," "," "," "," "," "," "," "," "," "," "," "," "], ["L","a",c_null_char, " "," "," "," "," "], La%z,
  La%saw_max, La%saw_min, La%saw, La%saw_u, La%asaw, La%asaw_u)

    C API lanthanum.
- type(element_t), parameter, public **ciaaw__saw::ce** =element_t("cerium", "Ce", 58, nan, nan, 140.116d0,
  0.001d0, 140.12d0, 0.01d0)

    cerium.
- type(capi_element_t), bind(C, name="ciaaw_saw_Ce"), public, protected **ciaaw__saw::capi_ce** =capi_element_t(["c","e","r","i",
  _null_char, " "," "," "," "," "," "," "," "," "," "," "," "," "," "," "," "," "," "], ["C","e",c_null_char, " "," "," "," "," "],
  Ce%z, Ce%saw_max, Ce%saw_min, Ce%saw, Ce%saw_u, Ce%asaw, Ce%asaw_u)

    C API cerium.
- type(element_t), parameter, public **ciaaw__saw::pr** =element_t("praseodymium", "Pr", 59, nan, nan, 140.↩
  90766d0, 0.00001d0, 140.91d0, 0.01d0)

    praseodymium.
- type(capi_element_t), bind(C, name="ciaaw_saw_Pr"), public, protected **ciaaw__saw::capi_pr** =capi_element_t(["p","r","a","s",
  _null_char, " "," "," "," "," "," "," "," "," "," "," "," "," "," "," "," "], ["P","r",c_null_char, " "," "," "," "," "], Pr%z, Pr%saw_max,
  Pr%saw_min, Pr%saw, Pr%saw_u, Pr%asaw, Pr%asaw_u)

    C API praseodymium.
- type(element_t), parameter, public **ciaaw__saw::nd** =element_t("neodymium", "Nd", 60, nan, nan, 144.↩
  242d0, 0.003d0, 144.24d0, 0.01d0)

    neodymium.
- type(capi_element_t), bind(C, name="ciaaw_saw_Nd"), public, protected **ciaaw__saw::capi_nd** =capi_element_t(["n","e","o","c
  _null_char, " "," "," "," "," "," "," "," "," "," "," "," "," "," "," "," "," "], ["N","d",c_null_char, " "," "," "," "," "], Nd%z,
  Nd%saw_max, Nd%saw_min, Nd%saw, Nd%saw_u, Nd%asaw, Nd%asaw_u)

    C API neodymium.
- type(element_t), parameter, public **ciaaw__saw::pm** =element_t("promethium", "Pm", 61, nan, nan, nan,
  nan, nan, nan)

    promethium.
- type(capi_element_t), bind(C, name="ciaaw_saw_Pm"), public, protected **ciaaw__saw::capi_pm**
  =capi_element_t(["p","r","o","m","e","t","h","i","u","m",c_null_char, " "," "," "," "," "," "," "," "," "," "," "," "," "," "
  "], ["P","m",c_null_char, " "," "," "," "," "], Pm%z, Pm%saw_max, Pm%saw_min, Pm%saw, Pm%saw_u,
  Pm%asaw, Pm%asaw_u)

    C API promethium.
- type(element_t), parameter, public **ciaaw__saw::sm** =element_t("samarium", "Sm", 62, nan, nan, 150.36d0,
  0.02d0, 150.36d0, 0.02d0)

    samarium.

- type([capi_element_t](#)), bind(C, name="ciaaw_saw_Sm"), public, protected **ciaaw__saw::capi_sm** =[capi_element_t](#)(["s","a","m","a","r","i","u","m",c_null_char, " "," "," "," "," "," "," "," "," "," "," "," "," "," "," "," "," "], ["S","m",c_null_char, " "," "," "," "," "," "], Sm%z, Sm%saw_max, Sm%saw_min, Sm%saw, Sm%saw_u, Sm%asaw, Sm%asaw_u)

    C API samarium.
- type([element_t](#)), parameter, public **ciaaw__saw::eu** =[element_t](#)("europium", "Eu", 63, nan, nan, 151.964d0, 0.001d0, 151.96d0, 0.01d0)

    europium.
- type([capi_element_t](#)), bind(C, name="ciaaw_saw_Eu"), public, protected **ciaaw__saw::capi_eu** =[capi_element_t](#)(["e","u","r","o", _null_char, " "," "," "," "," "," "," "," "," "," "," "," "," "," "," "," "], ["E","u",c_null_char, " "," "," "," "," "," "], Eu%z, Eu%saw_max, Eu%saw_min, Eu%saw, Eu%saw_u, Eu%asaw, Eu%asaw_u)

    C API europium.
- type([element_t](#)), parameter, public **ciaaw__saw::gd** =[element_t](#)("gadolinium", "Gd", 64, nan, nan, 157.25d0, 0.03d0, 157.25d0, 0.03d0)

    gadolinium.
- type([capi_element_t](#)), bind(C, name="ciaaw_saw_Gd"), public, protected **ciaaw__saw::capi_gd** =[capi_element_t](#)(["g","a","d","o", _null_char, " "," "," "," "," "," "," "," "," "," "," "," "," "," "," "], ["G","d",c_null_char, " "," "," "," "," "," "], Gd%z, Gd%saw_max, Gd%saw_min, Gd%saw, Gd%saw_u, Gd%asaw, Gd%asaw_u)

    C API gadolinium.
- type([element_t](#)), parameter, public **ciaaw__saw::tb** =[element_t](#)("terbium", "Tb", 65, nan, nan, 158.925354d0, 0.000007d0, 158.93d0, 0.01d0)

    terbium.
- type([capi_element_t](#)), bind(C, name="ciaaw_saw_Tb"), public, protected **ciaaw__saw::capi_tb** =[capi_element_t](#)(["t","e","r","b", _null_char, " "," "," "," "," "," "," "," "," "," "," "," "," "," "," "," "], ["T","b",c_null_char, " "," "," "," "," "," "], Tb%z, Tb%saw_max, Tb%saw_min, Tb%saw, Tb%saw_u, Tb%asaw, Tb%asaw_u)

    C API terbium.
- type([element_t](#)), parameter, public **ciaaw__saw::dy** =[element_t](#)("dysprosium", "Dy", 66, nan, nan, 162.$\leftarrow$ 500d0, 0.001d0, 162.50d0, 0.01d0)

    dysprosium.
- type([capi_element_t](#)), bind(C, name="ciaaw_saw_Dy"), public, protected **ciaaw__saw::capi_dy** =[capi_element_t](#)(["d","y","s","p", _null_char, " "," "," "," "," "," "," "," "," "," "," "," "," "," "," "], ["D","y",c_null_char, " "," "," "," "," "," "], Dy%z, Dy%saw_max, Dy%saw_min, Dy%saw, Dy%saw_u, Dy%asaw, Dy%asaw_u)

    C API dysprosium.
- type([element_t](#)), parameter, public **ciaaw__saw::ho** =[element_t](#)("holmium", "Ho", 67, nan, nan, 164.$\leftarrow$ 930329d0, 0.000005d0, 164.93d0, 0.01d0)

    holmium.
- type([capi_element_t](#)), bind(C, name="ciaaw_saw_Ho"), public, protected **ciaaw__saw::capi_ho** =[capi_element_t](#)(["h","o","l","m", _null_char, " "," "," "," "," "," "," "," "," "," "," "," "," "," "," "," "], ["H","o",c_null_char, " "," "," "," "," "," "], Ho%z, Ho%saw_max, Ho%saw_min, Ho%saw, Ho%saw_u, Ho%asaw, Ho%asaw_u)

    C API holmium.
- type([element_t](#)), parameter, public **ciaaw__saw::er** =[element_t](#)("erbium", "Er", 68, nan, nan, 167.259d0, 0.$\leftarrow$ 003d0, 167.26d0, 0.01d0)

    erbium.
- type([capi_element_t](#)), bind(C, name="ciaaw_saw_Er"), public, protected **ciaaw__saw::capi_er** =[capi_element_t](#)(["e","r","b","i", _null_char, " "," "," "," "," "," "," "," "," "," "," "," "," "," "," "," "," "], ["E","r",c_null_char, " "," "," "," "," "," "], Er%z, Er%saw_max, Er%saw_min, Er%saw, Er%saw_u, Er%asaw, Er%asaw_u)

    C API erbium.
- type([element_t](#)), parameter, public **ciaaw__saw::tm** =[element_t](#)("thulium", "Tm", 69, nan, nan, 168.$\leftarrow$ 934219d0, 0.000005d0, 168.93d0, 0.01d0)

    thulium.
- type([capi_element_t](#)), bind(C, name="ciaaw_saw_Tm"), public, protected **ciaaw__saw::capi_tm** =[capi_element_t](#)(["t","h","u","l", _null_char, " "," "," "," "," "," "," "," "," "," "," "," "," "," "," "," "], ["T","m",c_null_char, " "," "," "," "," "," "], Tm%z, Tm%saw_max, Tm%saw_min, Tm%saw, Tm%saw_u, Tm%asaw, Tm%asaw_u)

    C API thulium.

- type(element_t), parameter, public **ciaaw__saw::yb** =element_t("ytterbium", "Yb", 70, nan, nan, 173.045d0, 0.010d0, 173.05d0, 0.02d0)

    ytterbium.
- type(capi_element_t), bind(C, name="ciaaw_saw_Yb"), public, protected **ciaaw__saw::capi_yb** =capi_element_t(["y","t","t","e", _null_char, " "," "," "," "," "," "," "," "," "," "," "," "," "," " "], ["Y","b",c_null_char, " "," "," "," "," " "], Yb%z, Yb%saw_max, Yb%saw_min, Yb%saw, Yb%saw_u, Yb%asaw, Yb%asaw_u)

    C API ytterbium.
- type(element_t), parameter, public **ciaaw__saw::lu** =element_t("lutetium", "Lu", 71, nan, nan, 174.9668d0, 0.0001d0, 174.97d0, 0.01d0)

    lutetium.
- type(capi_element_t), bind(C, name="ciaaw_saw_Lu"), public, protected **ciaaw__saw::capi_lu** =capi_element_t(["l","u","t","e"," _null_char, " "," "," "," "," "," "," "," "," "," "," "," "," "," " "], ["L","u",c_null_char, " "," "," "," "," " "], Lu%z, Lu%saw_max, Lu%saw_min, Lu%saw, Lu%saw_u, Lu%asaw, Lu%asaw_u)

    C API lutetium.
- type(element_t), parameter, public **ciaaw__saw::hf** =element_t("hafnium", "Hf", 72, nan, nan, 178.486d0, 0.006d0, 178.49d0, 0.01d0)

    hafnium.
- type(capi_element_t), bind(C, name="ciaaw_saw_Hf"), public, protected **ciaaw__saw::capi_hf** =capi_element_t(["h","a","f","n", _null_char, " "," "," "," "," "," "," "," "," "," "," "," "," "," " "], ["H","f",c_null_char, " "," "," "," "," " "], Hf%z, Hf%saw_max, Hf%saw_min, Hf%saw, Hf%saw_u, Hf%asaw, Hf%asaw_u)

    C API hafnium.
- type(element_t), parameter, public **ciaaw__saw::ta** =element_t("tantalum", "Ta", 73, nan, nan, 180.94788d0, 0.00002d0, 180.95d0, 0.01d0)

    tantalum.
- type(capi_element_t), bind(C, name="ciaaw_saw_Ta"), public, protected **ciaaw__saw::capi_ta** =capi_element_t(["t","a","n","t"," _null_char, " "," "," "," "," "," "," "," "," "," "," "," "," "," " "], ["T","a",c_null_char, " "," "," "," "," " "], Ta%z, Ta%saw_max, Ta%saw_min, Ta%saw, Ta%saw_u, Ta%asaw, Ta%asaw_u)

    C API tantalum.
- type(element_t), parameter, public **ciaaw__saw::w** =element_t("tungsten", "W", 74, nan, nan, 183.84d0, 0.←↩ 01d0, 183.84d0, 0.01d0)

    tungsten.
- type(capi_element_t), bind(C, name="ciaaw_saw_W"), public, protected **ciaaw__saw::capi_w** =capi_element_t(["t","u","n","g"," _null_char, " "," "," "," "," "," "," "," "," "," "," "," "," "," " "], ["W",c_null_char, " "," "," "," "," "," " "], W%z, W%saw_max, W%saw_min, W%saw, W%saw_u, W%asaw, W%asaw_u)

    C API tungsten.
- type(element_t), parameter, public **ciaaw__saw::re** =element_t("rhenium", "Re", 75, nan, nan, 186.207d0, 0.001d0, 186.21d0, 0.01d0)

    rhenium.
- type(capi_element_t), bind(C, name="ciaaw_saw_Re"), public, protected **ciaaw__saw::capi_re** =capi_element_t(["r","h","e","n" _null_char, " "," "," "," "," "," "," "," "," "," "," "," "," "," "," " "], ["R","e",c_null_char, " "," "," "," "," " "], Re%z, Re%saw_max, Re%saw_min, Re%saw, Re%saw_u, Re%asaw, Re%asaw_u)

    C API rhenium.
- type(element_t), parameter, public **ciaaw__saw::os** =element_t("osmium", "Os", 76, nan, nan, 190.23d0, 0.03d0, 190.23d0, 0.03d0)

    osmium.
- type(capi_element_t), bind(C, name="ciaaw_saw_Os"), public, protected **ciaaw__saw::capi_os** =capi_element_t(["o","s","m","i" _null_char, " "," "," "," "," "," "," "," "," "," "," "," "," "," "," " "], ["O","s",c_null_char, " "," "," "," "," " "], Os%z, Os%saw_max, Os%saw_min, Os%saw, Os%saw_u, Os%asaw, Os%asaw_u)

    C API osmium.
- type(element_t), parameter, public **ciaaw__saw::ir** =element_t("iridium", "Ir", 77, nan, nan, 192.217d0, 0.←↩ 002d0, 192.22d0, 0.01d0)

    iridium.

- type([capi_element_t](#)), bind(C, name="ciaaw_saw_Ir"), public, protected **ciaaw__saw::capi_ir** =[capi_element_t](#)(["i","r","i","d","i","
  _null_char, " "," "," "," "," "," "," "," "," "," "," "," "," "," "," "," "," "," "," " "], ["I","r",c_null_char, " "," "," "," "," "," " "], Ir%z,
  Ir%saw_max, Ir%saw_min, Ir%saw, Ir%saw_u, Ir%asaw, Ir%asaw_u)

  C API iridium.

- type([element_t](#)), parameter, public **ciaaw__saw::pt** =[element_t](#)("platinum", "Pt", 78, nan, nan, 195.084d0,
  0.009d0, 195.08d0, 0.02d0)

  platinum.

- type([capi_element_t](#)), bind(C, name="ciaaw_saw_Pt"), public, protected **ciaaw__saw::capi_pt** =[capi_element_t](#)(["p","l","a","t","
  _null_char, " "," "," "," "," "," "," "," "," "," "," "," "," "," "," " "], ["P","t",c_null_char, " "," "," "," "," "," " "], Pt%z,
  Pt%saw_max, Pt%saw_min, Pt%saw, Pt%saw_u, Pt%asaw, Pt%asaw_u)

  C API platinum.

- type([element_t](#)), parameter, public **ciaaw__saw::au** =[element_t](#)("gold", "Au", 79, nan, nan, 196.966570d0,
  0.000004d0, 196.97d0, 0.01d0)

  gold.

- type([capi_element_t](#)), bind(C, name="ciaaw_saw_Au"), public, protected **ciaaw__saw::capi_au** =[capi_element_t](#)(["g","o","l","d"
  _null_char, " "," "," "," "," "," "," "," "," "," "," "," "," "," "," "," "," " "], ["A","u",c_null_char, " "," "," "," "," "," " "],
  Au%z, Au%saw_max, Au%saw_min, Au%saw, Au%saw_u, Au%asaw, Au%asaw_u)

  C API gold.

- type([element_t](#)), parameter, public **ciaaw__saw::hg** =[element_t](#)("mercury", "Hg", 80, nan, nan, 200.592d0,
  0.003d0, 200.59d0, 0.01d0)

  mercury.

- type([capi_element_t](#)), bind(C, name="ciaaw_saw_Hg"), public, protected **ciaaw__saw::capi_hg** =[capi_element_t](#)(["m","e","r","
  _null_char, " "," "," "," "," "," "," "," "," "," "," "," "," "," "," "," "," " "], ["H","g",c_null_char, " "," "," "," "," "," " "], Hg%z,
  Hg%saw_max, Hg%saw_min, Hg%saw, Hg%saw_u, Hg%asaw, Hg%asaw_u)

  C API mercury.

- type([element_t](#)), parameter, public **ciaaw__saw::tl** =[element_t](#)("thallium", "Tl", 81, 204.382d0, 204.385d0,
  204.3835d0, 0.0009d0, 204.38d0, 0.01d0)

  thallium.

- type([capi_element_t](#)), bind(C, name="ciaaw_saw_Tl"), public, protected **ciaaw__saw::capi_tl** =[capi_element_t](#)(["t","h","a","l","l"
  _null_char, " "," "," "," "," "," "," "," "," "," "," "," "," "," "," "," "," " "], ["T","l",c_null_char, " "," "," "," "," "," " "],
  Tl%z, Tl%saw_max, Tl%saw_min, Tl%saw, Tl%saw_u, Tl%asaw, Tl%asaw_u)

  C API thallium.

- type([element_t](#)), parameter, public **ciaaw__saw::pb** =[element_t](#)("lead", "Pb", 82, 206.14d0, 207.94d0, 207.↩
  0d0, 0.6d0, 207.2d0, 1.1d0)

  lead.

- type([capi_element_t](#)), bind(C, name="ciaaw_saw_Pb"), public, protected **ciaaw__saw::capi_pb** =[capi_element_t](#)(["l","e","a","d"
  _null_char, " "," "," "," "," "," "," "," "," "," "," "," "," "," "," "," "," " "], ["P","b",c_null_char, " "," "," "," "," "," " "],
  Pb%z, Pb%saw_max, Pb%saw_min, Pb%saw, Pb%saw_u, Pb%asaw, Pb%asaw_u)

  C API lead.

- type([element_t](#)), parameter, public **ciaaw__saw::bi** =[element_t](#)("bismuth", "Bi", 83, nan, nan, 208.98040d0,
  0.00001d0, 208.98d0, 0.01d0)

  bismuth.

- type([capi_element_t](#)), bind(C, name="ciaaw_saw_Bi"), public, protected **ciaaw__saw::capi_bi** =[capi_element_t](#)(["b","i","s","m",
  _null_char, " "," "," "," "," "," "," "," "," "," "," "," "," "," "," "," "," " "], ["B","i",c_null_char, " "," "," "," "," "," " "], Bi%z,
  Bi%saw_max, Bi%saw_min, Bi%saw, Bi%saw_u, Bi%asaw, Bi%asaw_u)

  C API bismuth.

- type([element_t](#)), parameter, public **ciaaw__saw::po** =[element_t](#)("polonium", "Po", 84, nan, nan, nan, nan,
  nan, nan)

  polonium.

- type([capi_element_t](#)), bind(C, name="ciaaw_saw_Po"), public, protected **ciaaw__saw::capi_po** =[capi_element_t](#)(["p","o","l","o"
  _null_char, " "," "," "," "," "," "," "," "," "," "," "," "," "," "," "," " "], ["P","o",c_null_char, " "," "," "," "," "," " "], Po%z,
  Po%saw_max, Po%saw_min, Po%saw, Po%saw_u, Po%asaw, Po%asaw_u)

  C API polonium.

- type([element_t](#)), parameter, public **ciaaw__saw::at** =[element_t](#)("astatine", "At", 85, nan, nan, nan, nan, nan, nan)

  astatine.
- type([capi_element_t](#)), bind(C, name="ciaaw_saw_At"), public, protected **ciaaw__saw::capi_at** =[capi_element_t](#)(["a","s","t","a","
  _null_char, " "," "," "," "," "," "," "," "," "," "," "," "," "," "," " "], ["A","t",c_null_char, " "," "," "," "," "," " "], At%z,
  At%saw_max, At%saw_min, At%saw, At%saw_u, At%asaw, At%asaw_u)

  C API astatine.
- type([element_t](#)), parameter, public **ciaaw__saw::rn** =[element_t](#)("radon", "Rn", 86, nan, nan, nan, nan, nan, nan)

  radon.
- type([capi_element_t](#)), bind(C, name="ciaaw_saw_Rn"), public, protected **ciaaw__saw::capi_rn** =[capi_element_t](#)(["r","a","d","o"
  _null_char, " "," "," "," "," "," "," "," "," "," "," "," "," "," "," "," "," " "], ["R","n",c_null_char, " "," "," "," "," "," " "],
  Rn%z, Rn%saw_max, Rn%saw_min, Rn%saw, Rn%saw_u, Rn%asaw, Rn%asaw_u)

  C API radon.
- type([element_t](#)), parameter, public **ciaaw__saw::fr** =[element_t](#)("francium", "Fr", 87, nan, nan, nan, nan, nan, nan)

  francium.
- type([capi_element_t](#)), bind(C, name="ciaaw_saw_Fr"), public, protected **ciaaw__saw::capi_fr** =[capi_element_t](#)(["f","r","a","n","
  _null_char, " "," "," "," "," "," "," "," "," "," "," "," "," "," "," " "], ["F","r",c_null_char, " "," "," "," "," "," " "], Fr%z,
  Fr%saw_max, Fr%saw_min, Fr%saw, Fr%saw_u, Fr%asaw, Fr%asaw_u)

  C API francium.
- type([element_t](#)), parameter, public **ciaaw__saw::ra** =[element_t](#)("radium", "Ra", 88, nan, nan, nan, nan, nan, nan)

  radium.
- type([capi_element_t](#)), bind(C, name="ciaaw_saw_Ra"), public, protected **ciaaw__saw::capi_ra** =[capi_element_t](#)(["r","a","d","i",
  _null_char, " "," "," "," "," "," "," "," "," "," "," "," "," "," "," "," "," " "], ["R","a",c_null_char, " "," "," "," "," "," " "],
  Ra%z, Ra%saw_max, Ra%saw_min, Ra%saw, Ra%saw_u, Ra%asaw, Ra%asaw_u)

  C API radium.
- type([element_t](#)), parameter, public **ciaaw__saw::ac** =[element_t](#)("actinium", "Ac", 89, nan, nan, nan, nan, nan, nan)

  actinium.
- type([capi_element_t](#)), bind(C, name="ciaaw_saw_Ac"), public, protected **ciaaw__saw::capi_ac** =[capi_element_t](#)(["a","c","t","i","
  _null_char, " "," "," "," "," "," "," "," "," "," "," "," "," "," "," "," " "], ["A","c",c_null_char, " "," "," "," "," "," " "], Ac%z,
  Ac%saw_max, Ac%saw_min, Ac%saw, Ac%saw_u, Ac%asaw, Ac%asaw_u)

  C API actinium.
- type([element_t](#)), parameter, public **ciaaw__saw::th** =[element_t](#)("thorium", "Th", 90, nan, nan, 232.0377d0,
  0.0004d0, 232.04d0, 0.01d0)

  thorium.
- type([capi_element_t](#)), bind(C, name="ciaaw_saw_Th"), public, protected **ciaaw__saw::capi_th** =[capi_element_t](#)(["t","h","o","r","
  _null_char, " "," "," "," "," "," "," "," "," "," "," "," "," "," "," "," "," "," " "], ["T","h",c_null_char, " "," "," "," "," "," " "], Th%z,
  Th%saw_max, Th%saw_min, Th%saw, Th%saw_u, Th%asaw, Th%asaw_u)

  C API thorium.
- type([element_t](#)), parameter, public **ciaaw__saw::pa** =[element_t](#)("protactinium", "Pa", 91, nan, nan, 231.←
  03588d0, 0.00001d0, 231.04d0, 0.01d0)

  protactinium.
- type([capi_element_t](#)), bind(C, name="ciaaw_saw_Pa"), public, protected **ciaaw__saw::capi_pa** =[capi_element_t](#)(["p","r","o","t",
  _null_char, " "," "," "," "," "," "," "," "," "," "," "," "," "," " "], ["P","a",c_null_char, " "," "," "," "," "," " "], Pa%z, Pa%saw_max,
  Pa%saw_min, Pa%saw, Pa%saw_u, Pa%asaw, Pa%asaw_u)

  C API protactinium.
- type([element_t](#)), parameter, public **ciaaw__saw::u** =[element_t](#)("uranium", "U", 92, nan, nan, 238.02891d0,
  0.00003d0, 238.03d0, 0.01d0)

  uranium.

- type(capi_element_t), bind(C, name="ciaaw_saw_U"), public, protected **ciaaw__saw::capi_u** =capi_element_t(["u","r","a","n","i _null_char, " "," "," "," "," "," "," "," "," "," "," "," "," "," "," "," "," "], ["U",c_null_char, " "," "," "," "," "," " "], U%z, U%saw_max, U%saw_min, U%saw, U%saw_u, U%asaw, U%asaw_u)

    C API uranium.
- type(element_t), parameter, public **ciaaw__saw::np** =element_t("neptunium", "Np", 93, nan, nan, nan, nan, nan, nan)

    neptunium.
- type(capi_element_t), bind(C, name="ciaaw_saw_Np"), public, protected **ciaaw__saw::capi_np** =capi_element_t(["n","e","p","t _null_char, " "," "," "," "," "," "," "," "," "," "," "," "," "," "," "], ["N","p",c_null_char, " "," "," "," "," "," " "], Np%z, Np%saw_max, Np%saw_min, Np%saw, Np%saw_u, Np%asaw, Np%asaw_u)

    C API neptunium.
- type(element_t), parameter, public **ciaaw__saw::pu** =element_t("plutonium", "Pu", 94, nan, nan, nan, nan, nan, nan)

    plutonium.
- type(capi_element_t), bind(C, name="ciaaw_saw_Pu"), public, protected **ciaaw__saw::capi_pu** =capi_element_t(["p","l","u","t", _null_char, " "," "," "," "," "," "," "," "," "," "," "," "," "," "," "], ["P","u",c_null_char, " "," "," "," "," "," " "], Pu%z, Pu%saw_max, Pu%saw_min, Pu%saw, Pu%saw_u, Pu%asaw, Pu%asaw_u)

    C API plutonium.
- type(element_t), parameter, public **ciaaw__saw::am** =element_t("americium", "Am", 95, nan, nan, nan, nan, nan, nan)

    americium.
- type(capi_element_t), bind(C, name="ciaaw_saw_Am"), public, protected **ciaaw__saw::capi_am** =capi_element_t(["a","m","e","r","i","c","i","u","m",c_null_char, " "," "," "," "," "," "," "," "," "," "," "," "," "," " "], ["A","m",c_null_char, " "," "," "," "," "," " "], Am%z, Am%saw_max, Am%saw_min, Am%saw, Am%saw_u, Am%asaw, Am%asaw_u)

    C API americium.
- type(element_t), parameter, public **ciaaw__saw::cm** =element_t("curium", "Cm", 96, nan, nan, nan, nan, nan, nan)

    curium.
- type(capi_element_t), bind(C, name="ciaaw_saw_Cm"), public, protected **ciaaw__saw::capi_cm** =capi_element_t(["c","u","r","i","u","m",c_null_char, " "," "," "," "," "," "," "," "," "," "," "," "," "," "," "," " "], ["C","m",c_null_char, " "," "," "," "," "," " "], Cm%z, Cm%saw_max, Cm%saw_min, Cm%saw, Cm%saw_u, Cm%asaw, Cm%asaw_u)

    C API curium.
- type(element_t), parameter, public **ciaaw__saw::bk** =element_t("berkelium", "Bk", 97, nan, nan, nan, nan, nan, nan)

    berkelium.
- type(capi_element_t), bind(C, name="ciaaw_saw_Bk"), public, protected **ciaaw__saw::capi_bk** =capi_element_t(["b","e","r","k", _null_char, " "," "," "," "," "," "," "," "," "," "," "," "," "," "," "], ["B","k",c_null_char, " "," "," "," "," "," " "], Bk%z, Bk%saw_max, Bk%saw_min, Bk%saw, Bk%saw_u, Bk%asaw, Bk%asaw_u)

    C API berkelium.
- type(element_t), parameter, public **ciaaw__saw::cf** =element_t("californium", "Cf", 98, nan, nan, nan, nan, nan, nan)

    californium.
- type(capi_element_t), bind(C, name="ciaaw_saw_Cf"), public, protected **ciaaw__saw::capi_cf** =capi_element_t(["c","a","l","i","f _null_char, " "," "," "," "," "," "," "," "," "," "," "," "," "," "], ["C","f",c_null_char, " "," "," "," "," "," " "], Cf%z, Cf%saw_max, Cf%saw_min, Cf%saw, Cf%saw_u, Cf%asaw, Cf%asaw_u)

    C API californium.
- type(element_t), parameter, public **ciaaw__saw::es** =element_t("einsteinium", "Es", 99, nan, nan, nan, nan, nan, nan)

    einsteinium.
- type(capi_element_t), bind(C, name="ciaaw_saw_Es"), public, protected **ciaaw__saw::capi_es** =capi_element_t(["e","i","n","s" _null_char, " "," "," "," "," "," "," "," "," "," "," "," "," "," "], ["E","s",c_null_char, " "," "," "," "," "," " "], Es%z, Es%saw_max, Es%saw_min, Es%saw, Es%saw_u, Es%asaw, Es%asaw_u)

C API einsteinium.

- type(element_t), parameter, public **ciaaw__saw::fm** =element_t("fermium", "Fm", 100, nan, nan, nan, nan, nan, nan)

    fermium.

- type(capi_element_t), bind(C, name="ciaaw_saw_Fm"), public, protected **ciaaw__saw::capi_fm** =capi_element_t(["f","e","r","m _null_char, " "," " "], ["F","m",c_null_char, " "," "," "," "," "," " "], Fm%z, Fm%saw_max, Fm%saw_min, Fm%saw, Fm%saw_u, Fm%asaw, Fm%asaw_u)

    C API fermium.

- type(element_t), parameter, public **ciaaw__saw::md** =element_t("mendelevium", "Md", 101, nan, nan, nan, nan, nan, nan)

    mendelevium.

- type(capi_element_t), bind(C, name="ciaaw_saw_Md"), public, protected **ciaaw__saw::capi_md** =capi_element_t(["m","e","n","d","e","l","e","v","i","u","m",c_null_char, " "," "," "," "," "," "," "," "," "," "," " "," " "], ["M","d",c_null_char, " "," "," "," "," "," " "], Md%z, Md%saw_max, Md%saw_min, Md%saw, Md%saw_u, Md%asaw, Md%asaw_u)

    C API mendelevium.

- type(element_t), parameter, public **ciaaw__saw::no** =element_t("nobelium", "No", 102, nan, nan, nan, nan, nan, nan)

    nobelium.

- type(capi_element_t), bind(C, name="ciaaw_saw_No"), public, protected **ciaaw__saw::capi_no** =capi_element_t(["n","o","b","e _null_char, " "," "," "," "," "," "," "," "," "," "," "," "," "," "," "," "," "," " "], ["N","o",c_null_char, " "," "," "," "," "," " "], No%z, No%saw_max, No%saw_min, No%saw, No%saw_u, No%asaw, No%asaw_u)

    C API nobelium.

- type(element_t), parameter, public **ciaaw__saw::lr** =element_t("lawrencium", "Lr", 103, nan, nan, nan, nan, nan, nan)

    lawrencium.

- type(capi_element_t), bind(C, name="ciaaw_saw_Lr"), public, protected **ciaaw__saw::capi_lr** =capi_element_t(["l","a","w","r","e _null_char, " "," "," "," "," "," "," "," "," "," "," "," "," "," "," "," "," "," " "], ["L","r",c_null_char, " "," "," "," "," "," " "], Lr%z, Lr%saw_max, Lr%saw_min, Lr%saw, Lr%saw_u, Lr%asaw, Lr%asaw_u)

    C API lawrencium.

- type(element_t), parameter, public **ciaaw__saw::rf** =element_t("rutherfordium", "Rf", 104, nan, nan, nan, nan, nan, nan)

    rutherfordium.

- type(capi_element_t), bind(C, name="ciaaw_saw_Rf"), public, protected **ciaaw__saw::capi_rf** =capi_element_t(["r","u","t","h","e _null_char, " "," "," "," "," "," "," "," "," "," " "], ["R","f",c_null_char, " "," "," "," "," "," " "], Rf%z, Rf%saw_max, Rf%saw_min, Rf%saw, Rf%saw_u, Rf%asaw, Rf%asaw_u)

    C API rutherfordium.

- type(element_t), parameter, public **ciaaw__saw::db** =element_t("dubnium", "Db", 105, nan, nan, nan, nan, nan, nan)

    dubnium.

- type(capi_element_t), bind(C, name="ciaaw_saw_Db"), public, protected **ciaaw__saw::capi_db** =capi_element_t(["d","u","b","r _null_char, " "," "," "," "," "," "," "," "," "," "," "," "," "," "," "," "," " "], ["D","b",c_null_char, " "," "," "," "," "," " "], Db%z, Db%saw_max, Db%saw_min, Db%saw, Db%saw_u, Db%asaw, Db%asaw_u)

    C API dubnium.

- type(element_t), parameter, public **ciaaw__saw::sg** =element_t("seaborgium", "Sg", 106, nan, nan, nan, nan, nan, nan)

    seaborgium.

- type(capi_element_t), bind(C, name="ciaaw_saw_Sg"), public, protected **ciaaw__saw::capi_sg** =capi_element_t(["s","e","a","b _null_char, " "," "," "," "," "," "," "," "," "," "," "," "," "," "," " "], ["S","g",c_null_char, " "," "," "," "," "," " "], Sg%z, Sg%saw_max, Sg%saw_min, Sg%saw, Sg%saw_u, Sg%asaw, Sg%asaw_u)

    C API seaborgium.

- type(element_t), parameter, public **ciaaw__saw::bh** =element_t("bohrium", "Bh", 107, nan, nan, nan, nan, nan, nan)

    bohrium.

- type([capi_element_t](#)), bind(C, name="ciaaw_saw_Bh"), public, protected **ciaaw__saw::capi_bh** =[capi_element_t](#)(["b","o","h","r"
  _null_char, " "," "], ["B","h",c_null_char, " "," "," "," "," "," "], Bh%z,
  Bh%saw_max, Bh%saw_min, Bh%saw, Bh%saw_u, Bh%asaw, Bh%asaw_u)

  C API bohrium.

- type([element_t](#)), parameter, public **ciaaw__saw::hs** =[element_t](#)("hassium", "Hs", 108, nan, nan, nan, nan,
  nan, nan)

  hassium.

- type([capi_element_t](#)), bind(C, name="ciaaw_saw_Hs"), public, protected **ciaaw__saw::capi_hs** =[capi_element_t](#)(["h","a","s","s"
  _null_char, " "," "], ["H","s",c_null_char, " "," "," "," "," "," "], Hs%z,
  Hs%saw_max, Hs%saw_min, Hs%saw, Hs%saw_u, Hs%asaw, Hs%asaw_u)

  C API hassium.

- type([element_t](#)), parameter, public **ciaaw__saw::mt** =[element_t](#)("meitnerium", "Mt", 109, nan, nan, nan, nan,
  nan, nan)

  meitnerium.

- type([capi_element_t](#)), bind(C, name="ciaaw_saw_Mt"), public, protected **ciaaw__saw::capi_mt** =[capi_element_t](#)(["m","e","i","t"
  _null_char, " "," "," "," "," "," "," "," "," "," "," "," "," "," "," "], ["M","t",c_null_char, " "," "," "," "," "," "], Mt%z,
  Mt%saw_max, Mt%saw_min, Mt%saw, Mt%saw_u, Mt%asaw, Mt%asaw_u)

  C API meitnerium.

- type([element_t](#)), parameter, public **ciaaw__saw::ds** =[element_t](#)("darmstadtium", "Ds", 110, nan, nan, nan,
  nan, nan, nan)

  darmstadtium.

- type([capi_element_t](#)), bind(C, name="ciaaw_saw_Ds"), public, protected **ciaaw__saw::capi_ds** =[capi_element_t](#)(["d","a","r","m"
  _null_char, " "," "," "," "," "," "," "," "," "," "," "," "," "," "," "], ["D","s",c_null_char, " "," "," "," "," "," "], Ds%z, Ds%saw_max,
  Ds%saw_min, Ds%saw, Ds%saw_u, Ds%asaw, Ds%asaw_u)

  C API darmstadtium.

- type([element_t](#)), parameter, public **ciaaw__saw::rg** =[element_t](#)("roentgenium", "Rg", 111, nan, nan, nan,
  nan, nan, nan)

  roentgenium.

- type([capi_element_t](#)), bind(C, name="ciaaw_saw_Rg"), public, protected **ciaaw__saw::capi_rg** =[capi_element_t](#)(["r","o","e","n"
  _null_char, " "," "," "," "," "," "," "," "," "," "," "," "," "," "," "," "," "," "], ["R","g",c_null_char, " "," "," "," "," "," "], Rg%z, Rg%saw_max,
  Rg%saw_min, Rg%saw, Rg%saw_u, Rg%asaw, Rg%asaw_u)

  C API roentgenium.

- type([element_t](#)), parameter, public **ciaaw__saw::cn** =[element_t](#)("copernicium", "Cn", 112, nan, nan, nan,
  nan, nan, nan)

  copernicium.

- type([capi_element_t](#)), bind(C, name="ciaaw_saw_Cn"), public, protected **ciaaw__saw::capi_cn** =[capi_element_t](#)(["c","o","p","e"
  _null_char, " "," "," "," "," "," "," "," "," "," "," "," "," "," "," "," "," "], ["C","n",c_null_char, " "," "," "," "," "," "], Cn%z, Cn%saw_max,
  Cn%saw_min, Cn%saw, Cn%saw_u, Cn%asaw, Cn%asaw_u)

  C API copernicium.

- type([element_t](#)), parameter, public **ciaaw__saw::nh** =[element_t](#)("nihonium", "Nh", 113, nan, nan, nan, nan,
  nan, nan)

  nihonium.

- type([capi_element_t](#)), bind(C, name="ciaaw_saw_Nh"), public, protected **ciaaw__saw::capi_nh** =[capi_element_t](#)(["n","i","h","o"
  _null_char, " "," "," "," "," "," "," "," "," "," "," "," "," "," "," "," "," "," "," "], ["N","h",c_null_char, " "," "," "," "," "," "], Nh%z,
  Nh%saw_max, Nh%saw_min, Nh%saw, Nh%saw_u, Nh%asaw, Nh%asaw_u)

  C API nihonium.

- type([element_t](#)), parameter, public **ciaaw__saw::fl** =[element_t](#)("flerovium", "Fl", 114, nan, nan, nan, nan,
  nan, nan)

  flerovium.

- type([capi_element_t](#)), bind(C, name="ciaaw_saw_Fl"), public, protected **ciaaw__saw::capi_fl** =[capi_element_t](#)(["f","l","e","r","o"
  _null_char, " "," "," "," "," "," "," "," "," "," "," "," "," "," "," "], ["F","l",c_null_char, " "," "," "," "," "," "], Fl%z,
  Fl%saw_max, Fl%saw_min, Fl%saw, Fl%saw_u, Fl%asaw, Fl%asaw_u)

  C API flerovium.

- type([element_t](#)), parameter, public **ciaaw__saw::mc** =[element_t](#)("moscovium", "Mc", 115, nan, nan, nan, nan, nan, nan)

    moscovium.
- type([capi_element_t](#)), bind(C, name="ciaaw_saw_Mc"), public, protected **ciaaw__saw::capi_mc** =[capi_element_t](#)(["m","o","s","c","o","v","i","u","m",c_null_char, " "," "," "," "," "," "," "," "," "," "," "," "," "," "," "], ["M","c",c_null_char, " "," "," "," "," "," "], Mc%z, Mc%saw_max, Mc%saw_min, Mc%saw, Mc%saw_u, Mc%asaw, Mc%asaw_u)

    C API moscovium.
- type([element_t](#)), parameter, public **ciaaw__saw::lv** =[element_t](#)("livermorium", "Lv", 116, nan, nan, nan, nan, nan, nan)

    livermorium.
- type([capi_element_t](#)), bind(C, name="ciaaw_saw_Lv"), public, protected **ciaaw__saw::capi_lv** =[capi_element_t](#)(["l","i","v","e","r" _null_char, " "," "," "," "," "," "," "," "," "," "," "," "," "," "," "], ["L","v",c_null_char, " "," "," "," "," "," "], Lv%z, Lv%saw_max, Lv%saw_min, Lv%saw, Lv%saw_u, Lv%asaw, Lv%asaw_u)

    C API livermorium.
- type([element_t](#)), parameter, public **ciaaw__saw::ts** =[element_t](#)("tennesine", "Ts", 117, nan, nan, nan, nan, nan, nan)

    tennesine.
- type([capi_element_t](#)), bind(C, name="ciaaw_saw_Ts"), public, protected **ciaaw__saw::capi_ts** =[capi_element_t](#)(["t","e","n","n", _null_char, " "," "," "," "," "," "," "," "," "," "," "," "," "," "], ["T","s",c_null_char, " "," "," "," "," "," "], Ts%z, Ts%saw_max, Ts%saw_min, Ts%saw, Ts%saw_u, Ts%asaw, Ts%asaw_u)

    C API tennesine.
- type([element_t](#)), parameter, public **ciaaw__saw::og** =[element_t](#)("organesson", "Og", 118, nan, nan, nan, nan, nan, nan)

    organesson.
- type([capi_element_t](#)), bind(C, name="ciaaw_saw_Og"), public, protected **ciaaw__saw::capi_og** =[capi_element_t](#)(["o","r","g","a" _null_char, " "," "," "," "," "," "," "," "," "," "," "," "," "," "], ["O","g",c_null_char, " "," "," "," "," "," "], Og%z, Og%saw_max, Og%saw_min, Og%saw, Og%saw_u, Og%asaw, Og%asaw_u)

    C API organesson.

7.8.1 Detailed Description

Standard Atomic Weights Module.

7.9 ciaaw_version.f90 File Reference

Version module.

Modules

- module [ciaaw__version](#)

    Version module.

Functions/Subroutines

- character(len=:) function, pointer, public [ciaaw__version::get_version](#) ()

    Get the version.

7.9.1 Detailed Description

Version module.

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