Const in Physics

Lime

2018 年 11 月 26 日

$$
\begin{aligned}
G =& 6.6726 \times 10^{-11} N \cdot m \cdot kg^{-1} \\
\hbar c =& 197 fm \cdot MeV \\
m_e c^2 =& 0.511 MeV \\
e =& 1.602176487 \times 10^{-19} C \\
\frac{1}{4\pi\varepsilon_0} =& 8.987 \times 10^{9} N \cdot m^2 C^{-2} \\
\frac{e^2}{4\pi\varepsilon_0} =& 1.44 fm \cdot MeV \\
=& 1.43988 \times 10^{-9} N \cdot m^2 \\
h =& 6.62607 \times 10^{-34} J \cdot s \\
=& 4.135667 \times 10^{-15} eV \cdot s \\
\hbar c =& 197 fm \cdot MeV \\
\hbar =& 1.05457 \times 10^{-34} J \cdot s \\
N_A =& 6.02214179 \times 10^{-23} mol^{-1} \\
a_0 =& 0.529 \mathring{A} \\
\alpha =& \frac{e^2}{4\pi\varepsilon_0 \hbar c} = 1/137 \\
a_1 =& 0.053 nm \\
K_B =& 1.3806504 \times 10^{-23} J \cdot K^{-1} \\
F =& 96485.3399 C \cdot mol^{-1} \\
m_e =& 9.10938215 \times 10^{-31} Kg \\
m_e c^2 =& 0.511 MeV \\
m_p =& 1.672621637 \times 10^{-27} Kg \\
m_n =& 1.674927211 \times 10^{-27} Kg \\
\varepsilon_0 =& 8.854187817 \times 10^{-12} C^{-2} J^{-1} m^{-1} \\
c =& \frac{1}{\sqrt{\mu_0 \varepsilon_0}} = 299792458 m \cdot s^{-1} (exactly) \\
g =& 9.80665 m \cdot s^{-1} (exactly) \\
R_H =& \frac{2\pi^2 e^4 m_e}{(4\pi\varepsilon_0)^2 c h^3} \\
=& 109677.58 cm^{-1} \\
\mu_B =& \frac{e\hbar}{2m} = \frac{1}{2}\alpha c(e a_1) \\
=& 0.9274 \times 10^{-23} JT^{-1}
\end{aligned}
$$