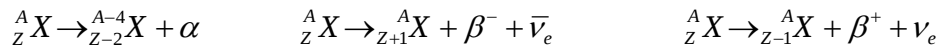


Possibly Useful Information

$$P = \sigma AT^4 \quad \lambda_{peak}T = 2.90 \times 10^{-3} \text{ m K} \quad v = Hd$$

$$A = Z + N \quad N = N_0 e^{-\lambda t}$$



$$E_{n,H} = \frac{-13.6 \text{ eV}}{n^2} \quad E_{n,H} = \frac{-13.6 \text{ eV}}{n^2} Z^2$$

Constants and Conversions:

$$\sigma = 5.67 \times 10^{-8} \frac{\text{W}}{\text{m}^2 \cdot \text{K}^4} \quad T_c = T_K - 273^\circ \quad H = 0.02 \text{ m/s/LY}$$

$$c = 2.998 \times 10^8 \text{ m/s} \quad h = 6.626 \times 10^{-34} \text{ J s} \quad a_0 = 52.9 \text{ pm}$$

$$e = 1.602 \times 10^{-19} \text{ C} \quad hc = 1240 \text{ eV nm} \quad 1 \text{ eV} = 1.602 \times 10^{-19} \text{ J}$$

$$1 \mu\text{m} = 10^{-6} \text{ m} \quad 1 \text{ nm} = 10^{-9} \text{ m} \quad 1 \text{ pm} = 10^{-12} \text{ m} \quad 1 \text{ fm} = 10^{-15} \text{ m}$$

$$m_e = 9.11 \times 10^{-31} \text{ kg} = 511 \text{ keV}/c^2$$

$$m_p = 1.007825 \text{ u} \cong 1.67 \times 10^{-27} \text{ kg} = 938 \text{ MeV}/c^2$$

$$m_n = 1.008665 \text{ u} \cong 1.68 \times 10^{-27} \text{ kg} = 940 \text{ MeV}/c^2$$

$$c^2 = 931.5 \text{ MeV/u} \quad 1 \text{ u} = 1.6605 \times 10^{-27} \text{ kg} \quad 1 \text{ LY} = 9.461 \times 10^{15} \text{ m}$$

In addition, to the information above, you will also be provided with the following tables:

- A Periodic Table of Elements
- Properties of Leptons
- Properties of Mesons
- Properties of Baryons
- Properties of Quarks