

Scale Constant of Avogadro

António Saraiva – 2008-11-13
ajps2@hotmail.com

Avogadro constant is a scale factor between the micro cosmos and the macro cosmos.

Gravitational constant:
$$G = \frac{c^3}{H_0 M_U} = 6.67 \times 10^{-11} m^{-3}$$

c – light speed ; H_0 -- Hubble constant ; M_U -- mass of the universe

$$G = \frac{3}{4\pi\lambda_G^3} \Leftrightarrow \lambda_G = 1.53 \times 10^3 m$$

λ_G = wavelength of the universe ; $R_U = \frac{c}{H_0}$ -- Radius of the universe

$$n\lambda_G = 2\pi R_U \text{ -- Quantization condition}$$

$$n \approx 6 \times 10^{23} \text{ -- Avogadro constant}$$

Quantum of mass:

$$M = \lambda_G^4 c^2 = 5 \times 10^{29} kg \text{ -- Average star}$$

Number of stars:

$$n = \frac{M_U}{M} \approx 6 \times 10^{23}$$

The universe has a mole of stars

Avogadro constant:

$$N_A = \frac{PV}{k_B T}$$

P – pressure; V – volume; k_B -- Boltzmann's constant; T – temperature

PV – macro energy ; $k_B T$ -- micro energy

$\frac{PV}{T}$ -- macro entropy ; k_B -- micro entropy