$$u \equiv \frac{\mathcal{E}}{N} = \frac{\sum_r E_r e^{-E_r\beta}}{\sum_r e^{-E_r\beta}}$$

$$\Downarrow$$

$$\beta \equiv \frac{1}{k_B T}$$

$$\frac{\left\{ e^{-\frac{E_0}{k_B T}}, e^{-\frac{E_1}{k_B T}}, e^{-\frac{E_2}{k_B T}}, \dots, e^{-\frac{E_r}{k_B T}}, \dots \right\}}{\sum_r e^{-\frac{E_r}{k_B T}}}$$

Propiedades

$$\Downarrow$$

$$F(N,V,T) = -K_B T \operatorname{Ln}\left(\sum_r e^{\frac{E_r}{k_B T}}\right)$$

$$\downarrow$$

Estadística

$$\Downarrow$$

$$Z(N,V,T) \equiv \sum_r e^{-\frac{E_r}{k_B T}}$$

Estadística clásica