

5.2: Classical Diatomic Ideal Gases

Rigid linear model. The partition function is

$$Z(T, V, N) = \frac{1}{N!} \left[\frac{V}{\lambda^3(T)} \left(\frac{4\pi^3 I k_B T}{h^2} \right) \right]^N \quad (5.2.1)$$

General results for separation of Z into translational (center of mass) and internal degrees of freedom. Term “internal specific heat”.

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