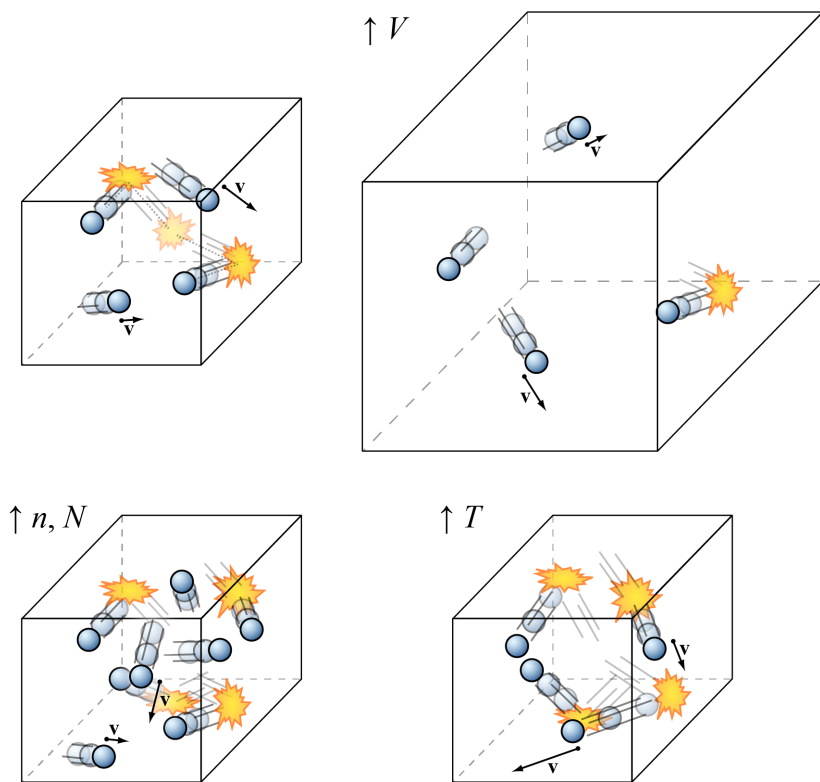


Kinetic theory of ideal gases



$$P = \frac{nRT}{V} = \frac{Nk_B T}{V}$$

$$KE_{\text{AVG PER PARTICLE}} = \frac{1}{2} m v_{\text{RMS}}^2 = \frac{3}{2} k_B T$$

$$[P] = \frac{\text{N}}{\text{m}^2} = \text{Pa}$$

$$1 \text{ atm} = 1.0 \times 10^5 \text{ Pa}$$

$$=: 760 \text{ torr}$$

$$= 760. \text{ mm Hg}$$

STP: 273 K and 1 atm

$$[T] = \text{K}$$

$$T \text{ in K} = T \text{ in } ^\circ\text{C} + 273\text{K}$$

$$R = 8.314 \frac{\text{J}}{\text{mol} \cdot \text{K}}$$

$$k_B = 1.38 \times 10^{-23} \frac{\text{J}}{\text{K}}$$