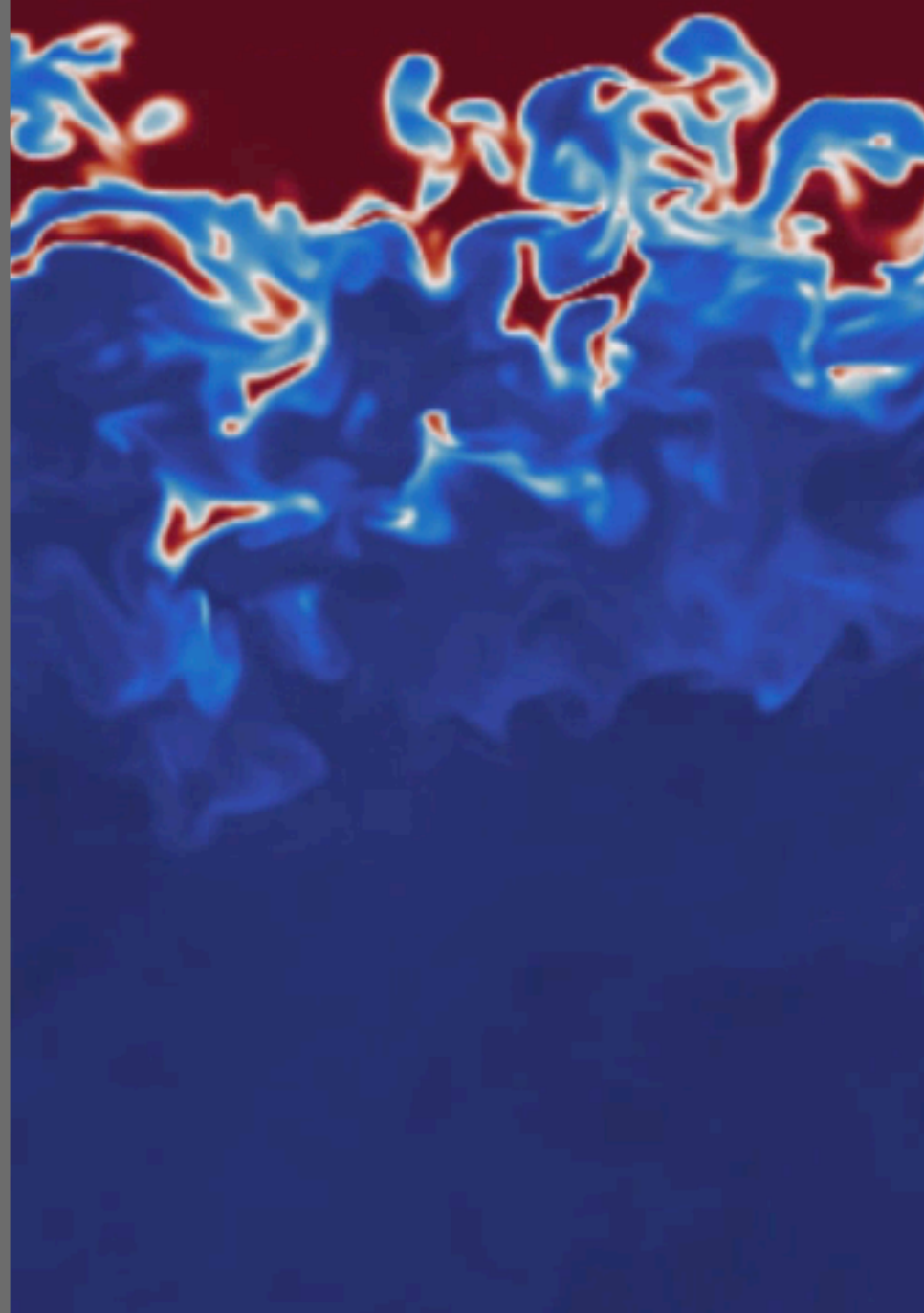
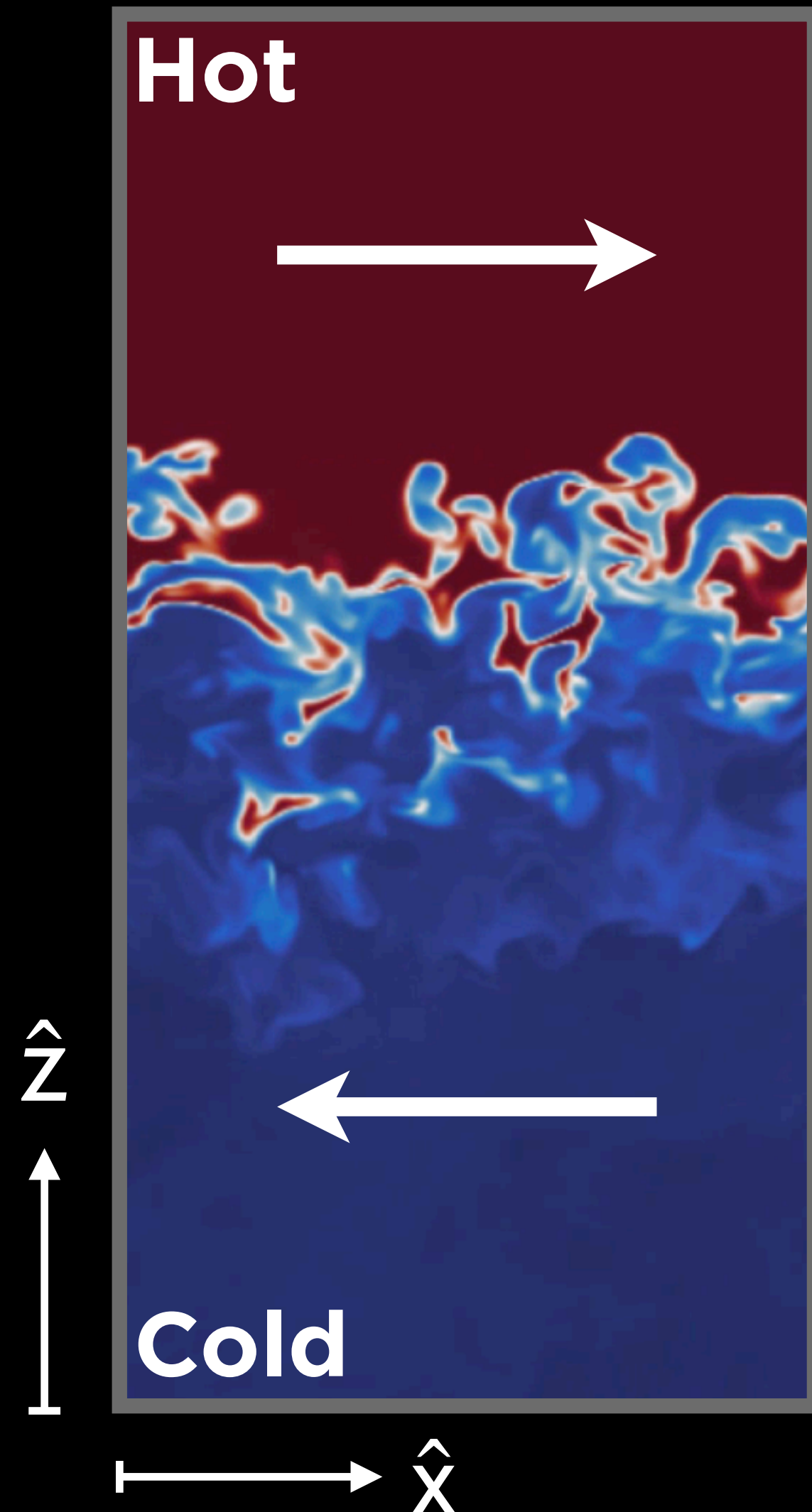


Drummond Fielding

3 Oct 2019



preliminaries



$$M = \frac{v_{\text{rel}}}{c_{s,\text{hot}}}$$

$$\chi = \frac{\rho_{\text{cold}}}{\rho_{\text{hot}}}$$

$$\xi = \frac{t_{\text{mix}}}{t_{\text{cool}}} = \frac{L}{v_{\text{mix}} t_{\text{cool}}}$$

Cooling is dominated by mixed gas

$$t_{\text{cool}} \equiv \frac{\frac{3}{2}P}{n^2 \Lambda(T_{\text{mix}})}$$

$$t_{\text{mix}} \equiv \frac{L}{v_{\text{mix}}}, \quad v_{\text{mix}} = v_{\text{rel}} / \chi^{1/2}$$

the experiment – no cooling

