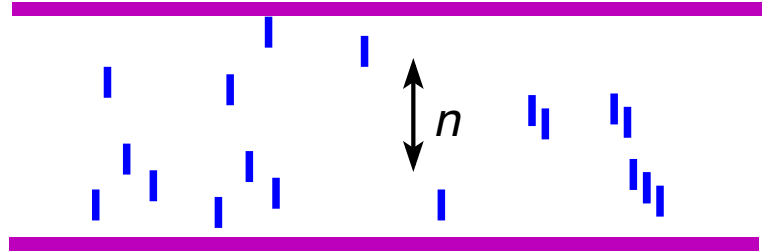


Other Correlated Fluids

● A. Ajdari, L. Peliti, J. Prost, Phys. Rev. Lett. 66, 1481 (1991)

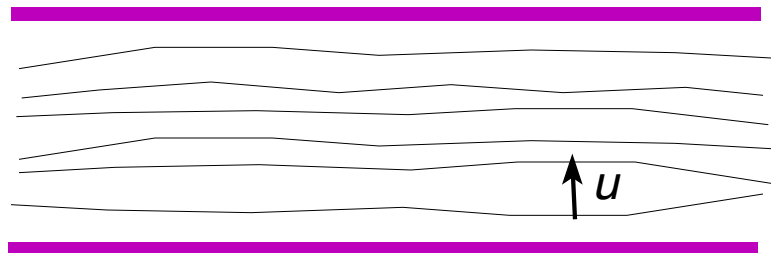
● Nematic liquid crystals



$$\mathcal{H}_N = \frac{1}{2} \int d^3\mathbf{r} \left[\kappa_1 (\nabla \cdot \mathbf{n})^2 + \kappa_2 (\mathbf{n} \cdot \nabla \times \mathbf{n})^2 + \kappa_3 (\mathbf{n} \times \nabla \times \mathbf{n})^2 \right]$$

$$\delta E_N = -k_B T \times \frac{A}{H^2} \times \frac{\zeta(3)}{16\pi} \left(\frac{\kappa_3}{\kappa_1} + \frac{\kappa_3}{\kappa_2} \right)$$

● Smectic liquid crystals



$$\mathcal{H}_S = \frac{1}{2} \int d^3\mathbf{r} \left[B \left(\frac{\partial u}{\partial z} \right)^2 + \kappa (\nabla^2 u)^2 \right]$$

$$\delta E_S = -k_B T \times \frac{A}{H\lambda} \times \frac{\zeta(2)}{16\pi} \quad \text{with} \quad \lambda \equiv \sqrt{\frac{\kappa}{B}}$$

● Polymer solutions S. Obukhov (1997)