

1 Separable Poisson equation

$$H \equiv \frac{|\mathbf{u}|^2}{2} + \frac{\tilde{p}}{\rho}$$

$$\frac{\partial \mathbf{u}}{\partial t} \mathbf{F}_A - \underbrace{\tilde{p} \nabla \left(\frac{1}{\rho} \right)}_{\mathbf{F}_B} + \nabla H = 0 \quad (1)$$

$$\frac{\partial \mathbf{u}}{\partial t} + \nabla \left[\frac{|\mathbf{u}|^2}{2} \right] \quad (2)$$

2 Inseparable Poisson equation

$$\frac{\partial \mathbf{u}}{\partial t} + \frac{|\mathbf{u}|^2}{2} + \frac{1}{\rho} \nabla \tilde{p} = -\mathbf{F}_A \quad (3)$$