

Solution of Boussinesq equation with Python

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1 Equations

We solve the non-dimensionalized Boussinesq equations:

$$\nabla \cdot U = 0 \tag{1}$$

$$\frac{\partial}{\partial t} U + U \cdot \nabla U - \frac{1}{\text{Re}} \nabla^2 U = -\nabla p_d + T \frac{-g}{\|g\|} \tag{2}$$

$$\frac{\partial}{\partial t} T + U \cdot \nabla T - \frac{1}{\text{Re} \cdot \text{Pr}} \nabla^2 T = 0 \tag{3}$$