AM 216 - Stochastic Differential Equations: Assignment

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Problem 1: bleh

$$u = Uu', \quad \hat{u} = U_{h,rms}u' \quad \rightarrow \quad u = UU_{h,rms}\hat{u}$$

$$Fr = \frac{U}{NL} \quad \rightarrow \quad Fr_{\text{eff}} = \frac{UU_{h,rms}}{NL} = U_{h,rms}Fr_{\text{input}}$$

$$Re = \frac{UL}{\nu} \quad \rightarrow \quad Re_{\text{eff}} = \frac{UU_{h,rms}L}{\nu} = U_{h,rms}Re_{\text{input}}$$

$$Pe = \frac{UL}{\kappa} \quad \rightarrow \quad Pe_{\text{eff}} = \frac{UU_{h,rms}L}{\kappa} = U_{h,rms}Pe_{\text{input}}$$

$$(w', \boldsymbol{\omega}') \quad \rightarrow \quad (\hat{w}, \hat{\boldsymbol{\omega}}) = \left(\frac{w'}{U_{h,rms}}, \frac{\boldsymbol{\omega}'}{U_{h,rms}}\right)$$

$$\eta = \frac{B|\nabla b|^2/Pe}{B|\nabla b|^2/Pe + |\nabla \boldsymbol{u}|^2/Re}$$