PDE for the final project

Pulkit Dubey

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I wish to solve the following PDE via a Fourier-Spectral method

$$\frac{\partial \rho}{\partial t} = \frac{1}{Pe}\frac{\partial^2 \rho}{\partial x^2} + 2\rho\frac{\partial^4 \rho}{\partial x^4} + \frac{\partial^6 \rho}{\partial x^6} + 4\frac{\partial \rho}{\partial x}\frac{\partial^3 \rho}{\partial x^3} + 1 - \mu\rho$$