$$\frac{\partial q}{\partial t} + u\frac{\partial q}{\partial x} + w\frac{\partial q}{\partial z} + W\frac{\partial q}{\partial z} = \frac{\partial}{\partial x}\left(K\frac{\partial u}{\partial x}\right) + \frac{1}{\rho_0}\frac{\partial}{\partial z}\left(\rho_0 K\frac{\partial u}{\partial z}\right),$$

$$\begin{aligned} W &= -\frac{\rho_d g r_m^2}{18\eta}\left(1 + 2\frac{\lambda_r}{r_m}\frac{p_r}{P_0}\right), \\ \frac{dn(r)}{dr} &= n_0 r^\alpha \exp\left[-\left(\frac{\alpha}{\gamma}\right)\left(\frac{r}{r_m}\right)^\gamma\right]. \end{aligned}$$

$$\alpha = 2, \quad \gamma = 0.5, \quad r_m = 0.4\mu\text{m},$$