$$\text{cell concentration } c, \text{ proliferation rate } r$$

$$\text{cellular birth rate } \beta(r,m) = r\left(1 - \mathrm{e}^{-k(1-m)}\right)$$

$$\text{cellular death rate } \delta(r,m) = \rho - \text{const.}\,(1-m)$$

$$\frac{\partial c}{\partial t} = D_1 \frac{\partial^2 c}{\partial r^2} + D_2 \frac{\partial^2 c}{\partial r^2} + (\beta(r,m) - \delta(rm))$$