$$\frac{\partial a}{\partial t} = s \cdot \frac{b_a + b a^2}{1 + s_a a^2 + s_c c} - r_a a + D_a \frac{\partial^2 a}{\partial x^2}$$

$$\frac{\partial b}{\partial t} = b_b - s \cdot \frac{b_a + b a^2}{1 + s_a a^2 + s_c c} + D_b \frac{\partial^2 b}{\partial x^2}$$

$$\frac{\partial c}{\partial t} = r_c a - r_c c + D_c \frac{\partial^2 c}{\partial x^2}$$