$$Y_1(t_i) = \frac{Y_1(t_{i-1}) + \Delta t . k_1 . Y_2(t_{i-1})}{(1 + \Delta . t . (k_1 . Y_2(t_{i-1}) + k_2 . Y_3(t_{i-1})))} \tag{1}$$

$$Y_2(t_i) = \frac{U_1(t_i)}{1 + \frac{M_1}{U_4(t_i)} \left(a . \frac{1}{2} . k_1 . Y_1(t_i) + b . \frac{1}{2} . k_4 . Y_3(t_{i-1}) \right)} \tag{2}$$

$$Y_3(t_i) = \frac{U_2(t_i)}{1 + \frac{M_2}{U_4(t_i)} \left(a . k_2 . Y_1(t_i) + b . k_4 . Y_2(t_i) \right)} \tag{3}$$

$$Y_4(t_i) = U_3 + \frac{M_3}{M_2} \left(U_2(t_i) - Y_3(t_i) \right) \tag{4}$$