

init



Update input flux



FBA

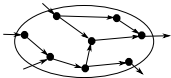


Update environment

$$v_{max} = \frac{v_{mm}S}{s + k_{mm}} \frac{1}{1 + \frac{s_2}{k_3}}$$

$$v_{max} = \frac{v_{mm}S}{s + k_{mm}}$$

Michaelis-Menten kinetics
with intake inhibition



Genome-scale model (GEM)

$$x_j = \int \mu_j x_j \, dx$$

$$s_i = \int \sum_{j=1}^N v_{i,j} x_j \, dt$$

Environment dynamics
(system of ODEs)

