rice_model5_1999

1 "environment" component

This component has no equations.

2 "T" component

$$\frac{\mathrm{d}(T)}{\mathrm{d}(time)} = delta\_T\_rxn0$$

3 "TCa" component

$$\frac{\mathrm{d}(TCa)}{\mathrm{d}(time)} = delta\_TCa\_rxn0$$

4 "Ca" component

$$\frac{\mathrm{d}(Ca)}{\mathrm{d}(time)} = delta\_Ca\_rxn0$$

5 "N0" component

$$\frac{\mathrm{d}(N0)}{\mathrm{d}(time)} = (delta\_N0\_rxn3 + delta\_N0\_rxn1)$$

6 “N1” component

$$\frac{\mathrm{d}(N1)}{\mathrm{d}(time)} = (delta\_N1\_rxn2 + delta\_N1\_rxn3)$$

7 “P0” component

$$\frac{\mathrm{d}(P0)}{\mathrm{d}(time)} = (delta\_P0\_rxn1 + delta\_P0\_rxn4)$$

8 “P1” component

$$\frac{\mathrm{d}(P1)}{\mathrm{d}(time)} = (delta\_P1\_rxn2 + delta\_P1\_rxn4 + delta\_P1\_rxn5)$$

9 “P2” component

$$\frac{\mathrm{d}(P2)}{\mathrm{d}(time)} = (delta\_P2\_rxn5 + delta\_P2\_rxn6)$$

10 “P3” component

$$\frac{\mathrm{d}(P3)}{\mathrm{d}(time)} = delta\_P3\_rxn6$$

11 “reaction0” component

k0__calculation

$$k0\_ = 40.0 * (1.0 - 0.5 * F)$$

F_calculation

$$F = \frac{alpha * (P1 + N1 + 2.0 * P2 + 3.0 * P3)}{Fmax}$$

Fmax_calculation

$$Fmax = (P1\_max + 2.0 * P2\_max + 3.0 * P3\_max)$$

P1_max_calculation

$$P1\_max = \frac{k4 * k5\_ * k6\_}{(k3 * k5\_ * k6\_ + k4 * k5\_ * k6\_ + k4 * k5 * k6\_ + k4 * k5 * k6)}$$

P2_max_calculation

$$P2\_max = \frac{k4 * k5 * k6\_}{(k3 * k5\_ * k6\_ + k4 * k5\_ * k6\_ + k4 * k5 * k6\_ + k4 * k5 * k6)}$$

P3_max_calculation

$$P3\_max = \frac{k4 * k5 * k6}{(k3 * k5\_ * k6\_ + k4 * k5\_ * k6\_ + k4 * k5 * k6\_ + k4 * k5 * k6)}$$

12 "reaction1" component

k1_calculation

$$k1 = k1\_ * \left(\frac{T\_Ca}{K\_1\_2}\right)^N$$

K_1_2_calculation

$$K\_1\_2 = \frac{1.0}{\left(1.0 + \frac{K\_Ca}{(1.8 - SL\_norm * 1.0)}\right)}$$

N_calculation

$$N = (3.4 + 1.4 * SL\_norm)$$

SL_norm_calculation

$$SL\_norm = \frac{(SL - 1.7)}{(2.3 - 1.7)}$$

13 "reaction2" component

This component has no equations.

14 "reaction3" component

k3_calculation

$$k3 = gSL$$

gSL_calculation

$$gSL = g * \left(1.0 + \left(1.0 - (SL\_norm)^{1.6}\right)\right)$$

15 “reaction4” component

This component has no equations.

16 “reaction5” component

k5__calculation

$$k5\_ = 2.0 * gSL$$

17 “reaction6” component

k6__calculation

$$k6\_ = 3.0 * gSL$$