  Diffuse IP3

Sneyd Model

malpha\_2 = mbeta;

%% Constants

mdelta = 0.01;

mgamma = 5.405;

malpha = 0;

malpha\_1 = 1;

% malpha\_2 = 0.2;

mbeta = 0.08;

tou\_n = 12.5; % I made this up based on other

k\_flux = 6.0;

V\_p = 24;

k\_p = 0.4;

V\_e = 20;

k\_e = 0.06;

k\_1 = 1.1;

k\_2 = 0.7;

k\_mu = 4;

mu\_0 = 0.567;

mu\_1 = 0.433;

b = 0.111;

V\_1 = 0.889;

k\_4 = 1.1;

% %% Fluxes

J\_release = (k\_flux.\*(mu\_0 + mu\_1\*P./(k\_mu+P)).\*N.\*(b+ V\_1\*C./(k\_1 + C))).\*(Ce-C);

J\_serca = V\_e\* C./(k\_e+C);

% J\_in = malpha\_1+v.\*malpha\_2./mbeta;

J\_in = malpha\_1+malpha\_2.\*P;

J\_pm = V\_p\*(C.^2./(k\_p^2+C.^2));

%% Differential Equations

L\_C = J\_release - J\_serca + mdelta\*(J\_in - J\_pm);

L\_Ce = mgamma\*(J\_serca - J\_release);

L\_N = (1/tou\_n).\*((k\_2^2)./(k\_2^2+C.^2)-N);

L\_P = v.\*((C+(1-malpha)\*k\_4)./(C+k\_4))-mbeta.\*P;