For Single Action Potentials:

For most of the parameters there is a brief explanation written as comment. To change the code to run close boundary condition instead of open,

1-Go to line 160 to uncomment ‘L((i\*SR),(i\*SR)) =-2+ep(SR)’ and comment L((i\*SR),(i\*SR)) =-2.

2-Then go to line 413 and uncomment ‘diffusionmatrix(:,:) =(1/h^2)\*L\*A(:,:)+s(:,:)’ and comment ‘diffusionmatrix(:,:) =(1/h^2)\*L\*A(:,:)+ (1/h^2)\*B(:,:)+s(:,:);’

For train, change the parameters of Ca in single Action potential file, and run it for each AZ and then add them with Matlab’s pchip.

For Pair of Action Potentials:

Since MATLAB misses the release point when located at the middle of time span because of the stiffness, we have to split the time of simulation to two pieces, one from t=0 till t1= ((time of simulation)/frequency of stimulation);

and the other from t1 till time of simulation.

So let’s say you are doing simulations for 1b terminal with probability of release of 1/9. Then if we assume ‘freq’ is 4, this means the frequency of stimulation of the entire bouton is 4\*9=36.

For first A.P, stimnum=1, and conti =0. For second stimulation, stimnum=2 and conti=1.