Documentation:

Performed three different simulations to test the neuroRD version 3.1.3. All simulations were carried out using original rates from kimetal 2013 paper

1. Step Stochastic (depth as 0.4) s0.4

2. Grid Adaptive (depth 0.4) GA

3. Step stochastic (depth 2.0) s2.0

It was interesting to note that with both the step stochastic there was an exponential rise in the calcium levels with the same stimulation files used for both the step stochastic and grid adaptive. Just to cross check I did the step stochastic simulations again and checked the calcium it was still the same.
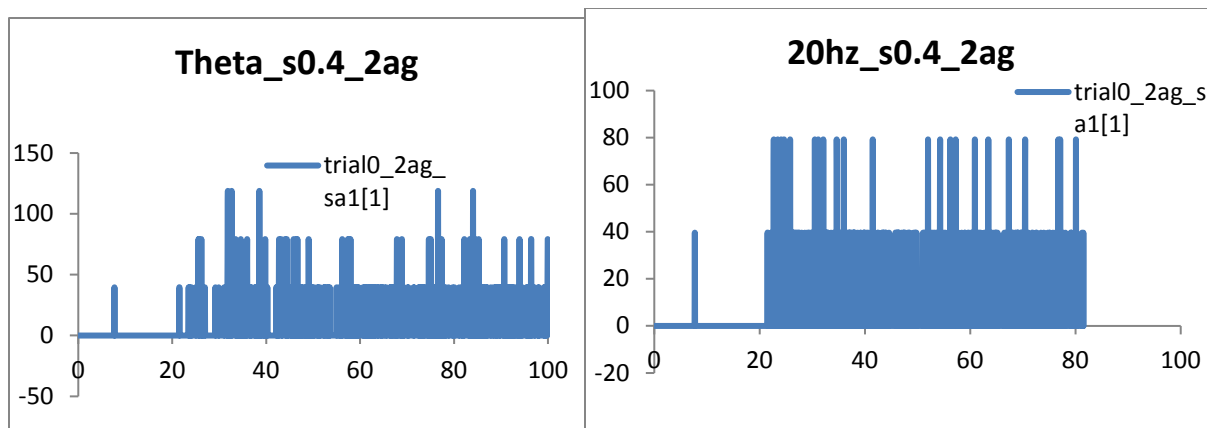
With the same set of parameters and rates of the reaction I wasn't able to replicate the results of the paper.
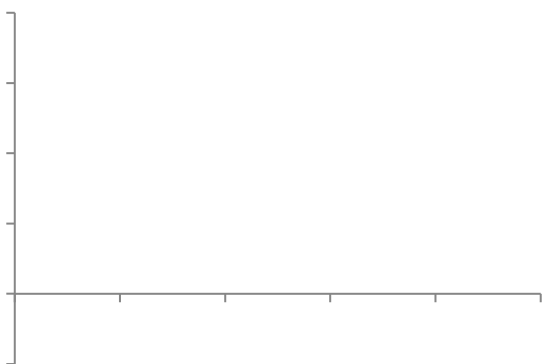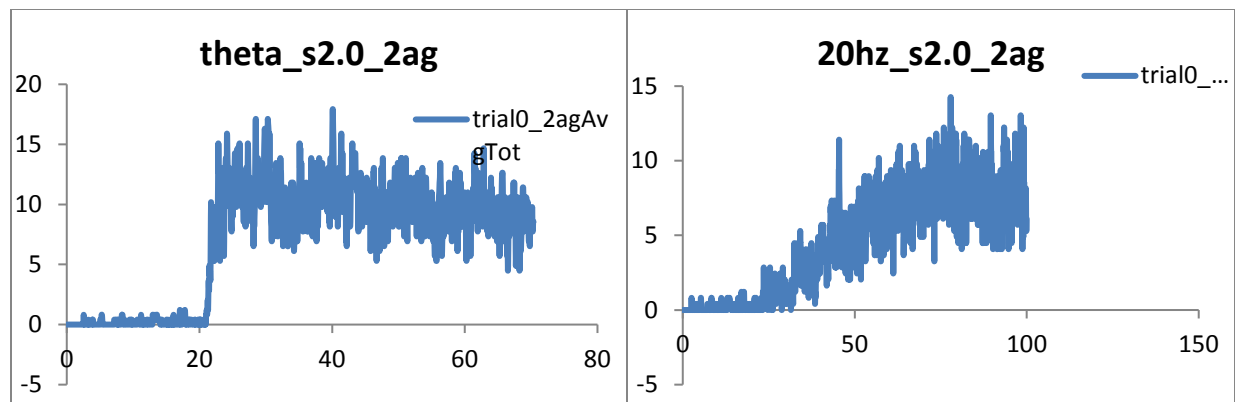
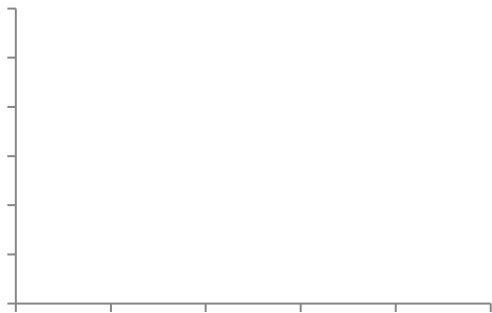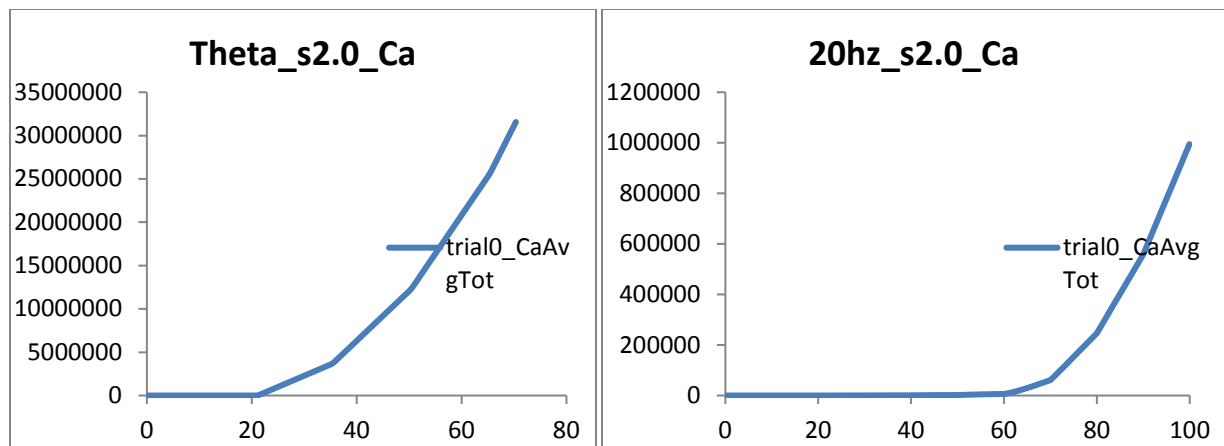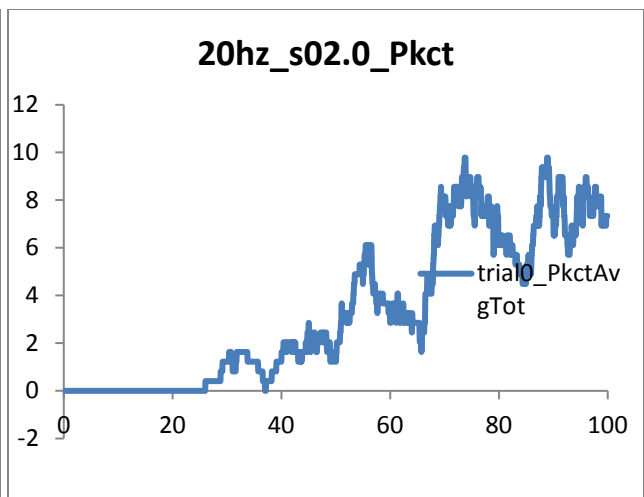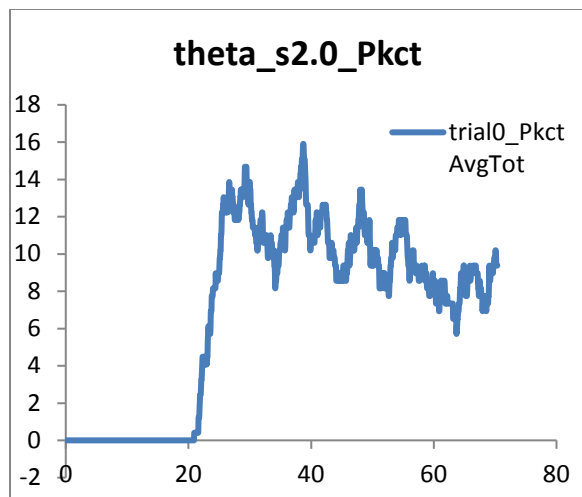I am uploading all the files used in simulations too

Plots:

original plots

2ag

theta_s2.0_2ag

trial0_2agAvgTot

20hz_s2.0_2ag

trial0_...

Ca

Theta_s2.0_Ca

20hz_s2.0_Ca

Pkct

theta_s2.0_Pkct

— trial0_Pkct AvgTot

20hz_s02.0_Pkct

— trial0_PkctAv gTot

GaGTP

Theta_s2.0_GaGTP

trial0_Ga...

20hz_s2.0_GaGTP

trial0_G...