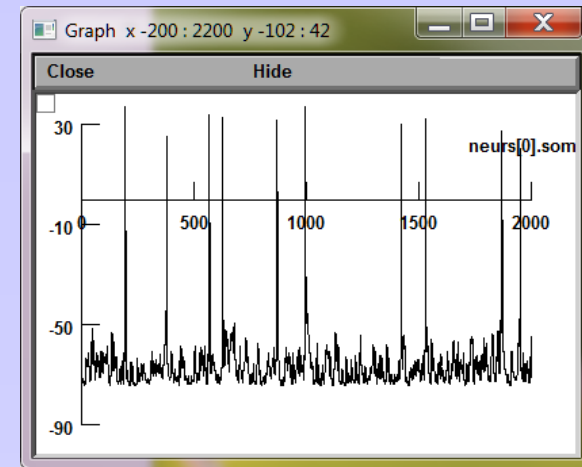# Homework 6 (due in 2 weeks)

Download **simplenet.zip**.
Use *mknrndll* (from the NEURON distribution) and generate the **nrnmech.dll**, as before. Running simplenet.hoc will generate 2 second-long simulation of activity in a fully connected 25 neuron network. You will also see the membrane potential of neuron 0 (as an example).

Using the function 'CreateRandWeights(0,*max*)', with *max*=0.2, create a 25-neurons fully connected network with synaptic weights uniformly distributed between 0 and 0.2.

- Q1: Run the simulation (2 sec long) a few times. What do you observe?
- Q2: Using the WriteWeights() function, export the weight matrix to Matlab, and find a graphically appealing way to display it.
- Q3: 'Reliability' may be used as a measure for network synchrony. Using the method presented in class, compute the synchrony (reliability and precision) of a given rastergram (you can export rastergrams with the function SaveRaster()). Make sure to show/plot the different steps you are implementing.
- (Optional) Q4: Vary *max* systematically between 0 and 0.4. Plot reliability and precision Vs *max*.