

## SBE II: Homework 2

### Experiment-3:

Attached as a code submission is the MATLAB script designed to produce the normalized differential response of the CNS neuron,  $S$ , for fixed  $x$  and varying  $d$ .

Shown in Figure 1 is the value of relative resolution of the CNS neurons,  $S$ , which is dependent on the distribution width of each independent neuron. We can see that this value saturates at approximately a value of  $d = 10$ . This plot was formed based on the adjust value of  $G$ , which was multiplied by an additional power of  $k$  in it's computation.

Though the plots of these two waveforms, meaning those computed in experiments 2 and 3, the values, which are asymptotically reached, are higher in this case. We see that a higher power of  $k$  results in a higher hyperacuity, meaning that there is larger differentiation from this CNS neuron between nearby positions of stimulus than in the case where a single power of  $k$  influenced the equation.

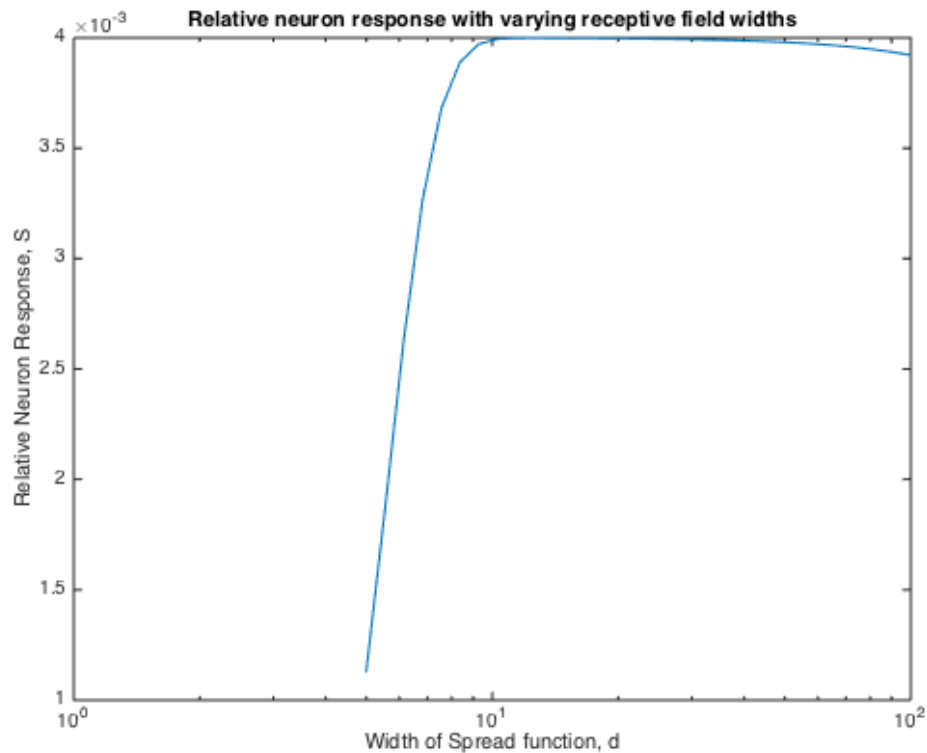


Figure 1: CNS Neuron relative resolution,  $S$ , for increasing values of distribution width.