Stochastic Neuron Models

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Bifurcation diagram for the Morris-Lecar neuron



Rowat & Greenwood, Neural Comp, 2011



40 mV

Dynamics of the Morris-Lecar neuron

Rowat & Greenwood, Neural Comp, 2011



Limit cycle (dotted black) and noisy limit cycle (solid green)



Wallace, et al., PLoS ONE, 2011

Quasi-cycle (solid green) and damped oscillation (dotted black)



Wallace, et al., PLoS ONE, 2011

Neuron population firing and local field potential oscillations



Dumont et al., PRE, 2014

Thank You