

# The dynamics of adaptive neuronal networks: influence of topology on synchronisation

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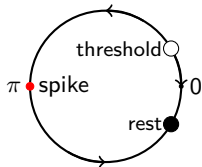
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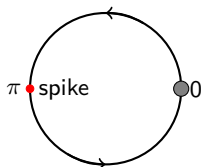
# The Theta Neuron Model

## The Theta Neuron Model

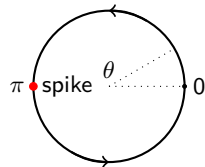
### • SNIC bifurcation



Excitable regime:  $I < 0$

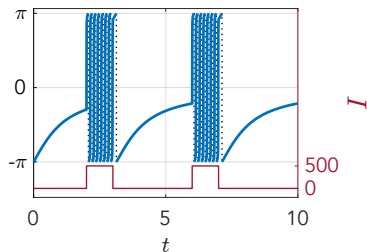
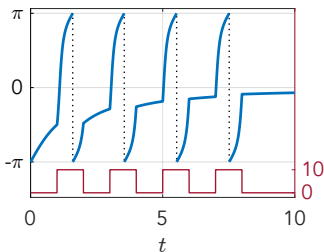
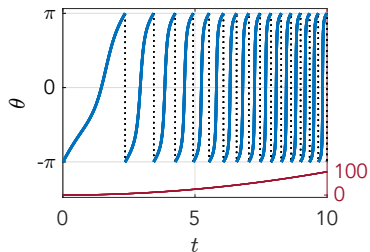


Bifurcation:  $I = 0$

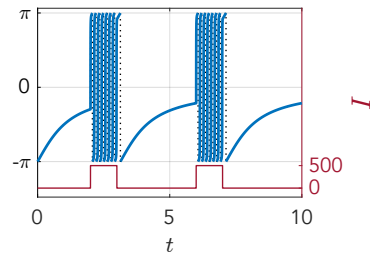
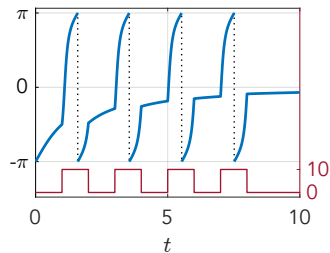
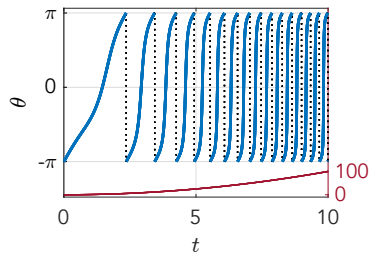


Periodic regime:  $I > 0$

### Features of the model



# The Theta Neuron Model





Mean Field Reductions  
**Mean Field Reductions**



*Investigation: Mean Field Reductions for undirected graphs*

***Investigation: Mean Field Reductions for undirected graphs***





Hebbian Learning and Synaptic Plasticity

# Hebbian Learning and Synaptic Plasticity



*Investigation: Emerging Network Topologies*

## ***Investigation: Emerging Network Topologies***



