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1 Abstract

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2 Preface

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3 Nomenclature

N	Network degree. Number of neurons in the network.
A_{ij}	Adjacency matrix. Models which neuron i is connected to neuron j and vice-ersa.
P	Network degree distribution.
$k, \langle k \rangle$	Node degree, average node degree
γ	Degree exponent of a scale-free network
$\dot{\theta}, \theta$	Phase variable of the theta model
$\eta_i, I(t)_i$	Excitability and input current of neuron i
$g(\eta \vert \eta_0, \Delta)$	Excitability distribution
κ	Coupling strength
$Z(t), \bar{Z}(t)$	Order parameter, discrete and continuous.

4 Networks

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5 The Theta Neuron Model

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In [1]

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[1] C. Bick, M. Goodfellow, C. Laing, and E. Martens, *Understanding the dynamics of biological and neural oscillator networks through exact mean-field reductions: a review.* *Journal of Mathematical Neuroscience* **10** no. 1, (Dec., 2020) .