Title:	Effect of active neurons in coupled neuronal networks
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Keywords:	Chialvo Map Coupled Neuronal network MBH oscillator FitzHugh-Nagumo model
Issue Date:	Apr-2020
Publisher:	IISER Mohali
Abstract:	The neurons have earlier been modeled using various dynamic equations and the emergence of collective behaviors has been investigated in coupled neuronal systems. In this thesis, we try to model neurons as the discrete dynamical system, using maps or the continuous-time dynamical system, using differential equations. These model neurons could be intrinsically active or inactive. Therefore, the model governing the dynamics of these neurons should display a rich dynamical behavior so that we could characterize the active and inactive state of the neuron. These model neurons are then coupled to each other using different coupling forms. First, we try to see the fraction of neurons exhibiting activity in the emergent dynamics as a function of coupling strength and the fraction of intrinsically active neurons in a neuronal network or population. Then we try to see the emergent patterns in the two coupled neuronal sub-populations. We investigate the effect of connection density, inter-group coupling and population size on the collective dynamical patterns.
URI:	http://hdl.handle.net/123456789/1469
Appears in Collections:	MS-15

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