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„DYNAMICS OF RECURRENT PULSE-COUPLED NETWORKS IN THE BRAIN“

Abstract

Neurons in the neocortex of mammals fire action potentials at very low rates, while their spike trains are asynchronous and irregular, indicating a very complex dynamics. The interplay between excitatory and inhibitory neurons strongly affects both neuronal correlations and cortical population dynamics. We attempt to relate these and other characteristics of idle brain dynamics to the physiology of nerve cells and the topology of the underlying network, where the latter is currently known only in terms of gross statistical parameters. Specifically, I will discuss the scope of the emerging linear and nonlinear models for recurrent network dynamics.