

1165-05-221

Giancarlo La Camera* (giancarlo.lacamera@stonybrook.edu), Dept. Neurobiology & Behavior, Stony Brook, NY 11794. *Metastable activity in recurrent networks of spiking neurons.*

Metastable brain dynamics is characterized by abrupt, jump-like modulations so that the neural activity in single trials appears to unfold as a sequence of discrete, quasi-stationary states. Metastable activity occurs both in response to an external stimulus and during ongoing, self-generated activity. These metastable states are increasingly found to subserve internal representations that are not locked to external triggers, including states of deliberations, attention and expectation. Modeling efforts have shown that similar sequences of metastable configurations can emerge spontaneously in a deterministic network of spiking neurons with a clustered architecture. These models can be studied with a mean field approach. Interestingly, only a subset of predicted configurations are observed in computer simulations. In this talk, I will give a brief introduction to the experimental evidence for metastability and its explanation in terms of clustered spiking networks, together with a discussion of some of the theoretical issues involved in their study. (Received January 18, 2021)