

Estimating the interaction graph of stochastic neural dynamics

Aline Duarte¹

¹ USP

We consider a stochastic model for a system of interacting neurons and address the question of statistical model selection for this class of stochastic models. More precisely, each neuron will be modeled as a chain with memory of variable length. The relationship between a neuron and its pre and postsynaptic neurons defines an oriented graph, the interaction graph of the model. In this seminar we present a consistent procedure to estimate this graph based on the observation of the spike activity of a finite set of neurons over a finite time.