

Séminaire de Probabilités et Statistique

Mardi 28 Février 2023 à 14h00

Laboratoire Dieudonné

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Time averages of a metastable system of spiking neurons.

We study a system of interacting point processes on the positive real line aimed to represent the spikes of a biological neural network. This model has been previously proven to exhibit several interesting behaviors. Firstly it undergoes phase transition with respect to the leakage parameter. Moreover the time of extinction of finite versions of the system has been proven to be asymptotically memory-less in the sub-critical phase, a characteristic property of metastable systems. Here we show that previous to extinction the finite versions of the system are in a regime which in some sense resemble stationarity. This is the second characteristic property of metastable dynamics. The main idea is to use a bypass through the theory of "Interacting particle systems".