An Interacting Neuronal Network with Inhibition: theoritical analysis and perfect simulation

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Résumé

We study a purely inhibitory neural network model where neurons are represented by their state of inhibition. The study we present here is partially based on the work of Cottrell (1992) and Fricker et al. (1993). The spiking rate of a neuron depends only on its state of inhibition. When a neuron spikes, it receives random inhibition and the inhibition state of the other neurons increases by a positive value.

Finally, we extend our model to the case where the neurons are indexed by $\{Z\}.$ We construct a perfect simulation algorithm to show the recurrence of the process under certain conditions.

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