

Poster presentation

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## Simple stochastic neuronal models and their parameters

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The stochastic approach to the problems of computational neuroscience is common due to the apparent randomness of neuronal behavior. Many stochastic models of neurons have been proposed and deeply studied. They range from simple statistical descriptors to sophisticated and realistic biophysical models. On their basis, properties of neuronal information transfer are deduced. Simple stochastic neuronal models are investigated in the contribution.

The basic assumptions made on the spiking activity permit to consider spike trains as realizations of a stochastic point processes. Then, having the experimental data, the spike trains or membrane depolarization trajectories, we may ask what was the signal stimulating the neuron producing this sequence of action potentials. For this purpose, the parameters of the models have to be determined. The recent results achieved in both these directions and extending our previous effort [1-7] are summarized.

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