

Poster presentation

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Network reconstruction in the presence of unmeasured neurons

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We present a method to determine whether a correlation in the spikes of two neurons is due to a causal connection between the neurons or due to common input originating from unmeasured neurons. The distinction is based on a point-process model of how a neuron's spiking probability can depend on both its own spiking history and a stimulus (or other external variables). Although the results depend on selecting a parametric model that captures essential features of the neural response, a large class of models can be used with the network analysis. Hence, the analysis could be applied to probe circuitry in a large range of neuronal systems.