

Simulation of networks of spiking neurons: A review of tools and strategies

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Abstract We review different aspects of the simulation of spiking neural networks. We start by reviewing the different types of simulation strategies and algorithms that are currently implemented. We next review the precision of those simulation strategies, in particular in cases where plasticity depends on the exact timing of

the spikes. We overview different simulators and simulation environments presently available (restricted to those freely available, open source and documented). For each simulation tool, its advantages and pitfalls are reviewed, with an aim to allow the reader to identify which simulator is appropriate for a given task. Finally,

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