

Networks of spiking neurons present a biologically more plausible alternative to perceptron networks, having great potential for processing time series. However, as of now, no practically usable learning algorithm has been known. SpikeProp, based on a gradient descent method, and its modifications have a fundamental problem with dis-continuity of spike creation and deletion. A new nontrivial gradient learning algorithm for a model of smoothly spiking neurons is proposed as a possible way to solve this problem. The goal of this work is to implement and test this model and eventually propose further improvements.