

Phenomenological models of synaptic plasticity based on spike timing

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Abstract Synaptic plasticity is considered to be the biological substrate of learning and memory. In this document we review phenomenological models of short-term and long-term synaptic plasticity, in particular spike-timing dependent plasticity (STDP). The aim of the document is to provide a framework for classifying and evaluating different models of

1 Introduction

Synaptic changes are thought to be involved in learning, memory, and cortical plasticity, but the exact relation between microscopic synaptic properties and macroscopic functional consequences remains highly controversial. In experimental