

Synaptic plasticity through topological methods

Synaptic plasticity is defined as the variation in strength of synaptic connection between neurons as well as the creation of new connections and elimination of existing connections. The brain is capable of making such changes as a reaction to stimuli and the process is considered by neuroscientists as one of the fundamental aspects of learning and other highly sophisticated and delicate brain functions. This talk is a report on work in progress with a team of mathematicians and scientists from the Blue Brain Project, on the application of topological tools to a digital reconstruction of a small section of the brain that is capable of simulating synaptic plasticity.