European Institute for Theoretical Neuroscience

"Dendritic Computations", December 11-12, 2014, European Institute for Theoretical Neuroscience, Paris

Dendrites are becoming increasingly more fascinating both experimentally and theoretically.

These highly nonlinear and plastic devices receive thousands of synaptic inputs from different input sources, transforming them into appropriate axonal output.

The goal of the meeting is to bring together theoreticians and experimentalists aiming to understand the integrative and computational role of dendrites, and to discuss new horizons for the study of dendrites.

At the experimental side, the focus is on recording and characterization of intrinsic dendritic nonlinearities and their control of synaptic input/output properties.

At the theoretical side, we will discuss how various models are utilized for the functional understanding of dendrites, with a particular focus on models of cortical neurons.

Specifically, we will explore how could one systematically reduce the complexity of neuron models while preserving the model's essential computational functions.

Reduced models will be highlighted as the building blocks of neuromorphic circuits that include dendrites.

Finally, we will discuss dendritic processing under in vivo conditions and conclude this two-days meeting with an open discussion among the participants on "what's next with dendrites? ».

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