THE UNIVERSITY   OF HONG KONG

Department of Mathematics

Numerical Mathematics and Applied Analysis Group Seminar (NMAA)

Lecture Series —
How can Mathematics and Computational Models Help to Understand the Brain?

Lecture 1: Introduction to computational neuroscience

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on Tuesday, September 17, 2013 at 2:30pm
in Room 210, Run Run Shaw Building, HKU

Abstract

Computational neuroscience is the study of information processing in the brain by modeling the nervous system at different structural scales. It is an interdisciplinary science that links diverse fields of neurobiology, psychology and cognitive science with mathematics, physics, engineering and computer science. In this seminar series, I will first of all give you an introduction of neurobiology, and an overview of the various levels of modeling of the brain. Later on, I will focus on the mathematical and computational approaches to the understanding of the brain at neuronal and network level. The following topics will be discussed: neuron models, stochastic spiking, network dynamics, as well as models of cognition.

All are welcome