数学与系统科学研究院

计算数学所学术报告

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报告题目：

Causal and Structural Connectivity of Neuronal Networks

邀请人：　邸亚娜 副研究员

报告时间：**2014 年 9 月 19 日（周五）**

上午 10:00-11:00

报告地点：　科技综合楼三层 **311**

计算数学所报告厅

Abstract：

Current experimental techniques usually cannot probe the global interconnection pattern of a network. Thus, reconstructing or reverse-engineering the network topology of coupled nodes based upon observed data has become a very active research area. Most existing reconstruction methods are based on networks of oscillators with generally smooth dynamics. However, for nonlinear and non-smooth stochastic dynamical systems, e.g., neuronal networks, the reconstruction of the full topology remains a challenge. Here, we present a noninterventional reconstruction method, which is based on Granger causality theory, for the widely used conductance-based, integrate-and-fire type neuronal networks. For this nonlinear system, we have established a direct theoretical connection between Granger causal connectivity and structural connectivity.

欢迎大家参加！