Speaker: Sumeetpal S. Singh (University of Cambridge)

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Title: Monte Carlo based Inference for State-space Models

Abstract:
State-space models are widely used for the analysis of time-series data but full Bayesian inference is still elusive. I will review some applications of state-space models and recent endeavours towards efficient Monte Carlo sampling, in particular using Particle filtering and more recent Particle Markov Chain Monte Carlo methods. I will discuss the theoretical scalability of these methods with respect to the length of the observed time-series. Our theoretical results on their efficiency align well with many documented instances of their effectiveness based on extensive numerical studies. This talk is aimed more generally and no specific background knowledge is assumed.