The College of Arts & Sciences
Department of Mathematical Sciences

Colloquium

Georgios Karagiannis

Durham University

Thursday, February 27
Room 608, 2925 Campus Green Drive
2:00-3:00 pm

Stochastic Approximation Monte Carlo without likelihoods

Approximate Bayesian Computation (ABC) uses simulations to enable inference even when likelihood is intractable. ABC-MCMC often suffers from a local trapping problem, causing poor mixing, when the tolerance parameter is low. To overcome this issue we propose a new algorithm, the Stochastic Approximation Monte Carlo ABC (SAMC-ABC), which couples ideas from Stochastic Approximation Monte Carlo with ABC. The proposed procedure uses an adaptive mechanism to escape local traps by penalizing visits to regions of the sample space that are visited too often. Furthermore, it is able to specify the kernel function in an adaptive manner. We demonstrate the good performance of the proposed algorithm on challenging benchmark examples, and we use the proposed algorithm to analyze a real dataset from the 2014-15 Ebola outbreak.

Collaboration with Kieran Richards (PhD student at Durham University)

Refreshments will be served 3:00-3:30 pm in the same location
Room 608, 2925 Campus Green Drive

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