Speaker: Simon Rubinstein-Salzedo, Stanford University

Title: Positive Curvature and Hamiltonian Monte Carlo

Abstract:
When trying to sample from posterior distributions using MCMC, we often encounter intractibility issues in high-dimensional settings. One such example is that of analyses of biomedical images.

I will show how to modify standard MCMC by using ideas from physics that enable us to encode our knowledge of the probability distribution into a Hamiltonian dynamical system. We are then able to provide error bounds, expressed in terms of curvature and other notions from Riemannian geometry.

This is joint work with Susan Holmes and Christof Seiler.