# Statistics and Actuarial Science Seminar

**Title:** Hybrid Monte-Carlo: A little-known MCMC algorithm

**Speaker:** Alex Beskos (University College London)

**Date:** Thu 18th February 2010 at 3:00PM

**Location:** Statistics Seminar Room- Library building

**Abstract:** We are interested in the behavior of MCMC algorithms in high dimensions. Results in the literature have shown that the 'vanilla' Random Walk Metropolis scales as 1/n, with n being the dimension of the state space. The so-called Metropolis-adjusted Langevin algorithm scales as 1/n$^{1/3}, asitusesinformationaboutthegradientofthetargetdens$
$theHybridMonte-Carlo(HMC)algorithm.HMCscalesas1/n^{1/4}.Inconnectionwithrelatedresultsf$

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