



Statistics Seminar Series

Session 2, 2009



Josef Dick

The University of New South Wales

Consistency of Markov Chain quasi-Monte Carlo on continuous state spaces

The random numbers driving Markov chain Monte Carlo (MCMC) simulation are usually modeled as independent uniform $U(0, 1)$ random variables. Tribble reports substantial improvements when those random numbers are replaced by carefully balanced inputs from completely uniformly distributed sequences. The previous theoretical justification for using anything other than IID $U(0, 1)$ points showed consistency for estimated means, but only applies for discrete stationary distributions. We extend those results to some MCMC algorithms for continuous stationary distributions. The main motivation is the search for quasi-Monte Carlo versions of MCMC. As a side benefit, the results also establish consistency for the usual method of using pseudo-random numbers in place of random ones.

About the speaker: Josef Dick is a Lecturer at the Department of Applied Mathematics, School of Mathematics, UNSW. He is interested in Monte Carlo and quasi-Monte Carlo methods.

Time: 4pm, Friday, 24th July

Location: Room RC4082

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