



Statistics and Actuarial Science Seminar

Title: Transdimensional methods for variable selection in large p , small n problems

Speaker: Jim Griffin (University of Kent)

Date: Thu 11th March 2010 at 3:00PM

Location: Statistics Seminar Room- Library building

Abstract: Model search in probit regression is often conducted by simultaneously exploring the model and parameter space, using a reversible jump MCMC sampler. The chain moves around model space using random walk proposals. In large p , small n problems these samplers often have high acceptance rates for between model moves which are associated with poorly mixing chains. In this talk, a more general model proposal is discussed that allows us to propose models "further" from our current model. This proposal can be tuned to achieve a suitable acceptance rate for good mixing. The effectiveness of this proposal is linked to the form of the marginalisation scheme when updating the model and we propose a new efficient implementation of the automatic generic transdimensional algorithm of Green (2003). The development of a tuneable proposal allows us to develop adaptive MCMC schemes using the idea of diminishing adaptation. The methods will be illustrate by applications to gene expression data.

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