



UNIVERSITY OF SYDNEY

SCHOOL OF MATHEMATICS AND STATISTICS

Statistics Seminar

Friday, 19 May, 2.00pm

Eastern Avenue Lecture Theater

**Reversible jump MCMC methods for choosing between
nonlinear GARCH models.**

**Dr Dr Richard Gerlach
School of Economics and Political Science
The University of Sydney**

Abstract

The GJR-GARCH model is a popular choice among nonlinear models of the well-known asymmetric volatility phenomenon in financial market data. However, recent work employs double threshold nonlinear models to capture both mean and volatility asymmetry. A Bayesian model comparison procedure is proposed to compare the GJR-GARCH with various double threshold GARCH specifications, by designing a reversible jump Markov chain Monte Carlo algorithm. A simulation experiment illustrates good performance in estimation and model selection over reasonable sample sizes. In a study of eight markets strong evidence is found that the DTGARCH, with US market news as threshold variable, outperforms the GJR-GARCH and traditional self-exciting DTGARCH models. This result was consistent across six markets, excluding Canada and Taiwan.

Enquiries about the Statistics Seminar should be directed to
Marc Raimondo (marcr@maths.usyd.edu.au)