

# 國立中央大學

## 統計研究所

### 學術演講

主 講 人：劉峰旗 助理教授（逢甲大學統計學系）

講 題：**Bayesian model selection among dispersed integer-valued time series models**

時 間：112年03月21日（星期二）上午11：00 ~ 12：00

地 點：中央大學鴻經館M429室

茶 會：上午 10：30 ~ 11：00      地 點：鴻經館 510 室

### ABSTRACT

This research considers a class of integer-valued time series models with over-dispersion and extends those models to generalized forms. These new models include: (1) dispersed INGARCH models incorporating negative binomial, double Poisson, or generalized Poisson, and (2) double log-form INGARCH model. The latter model avoids over-restrictions in the parameter space. We perform parameter estimations and model selection within the Bayesian framework, employ adaptive Markov chain Monte Carlo (MCMC) sampling schemes, and calculate the deviance information criterion (DIC) for model selection. Simulation studies demonstrate that the proposed method accurately estimates the model parameters with reliable MCMC samples. Taking monthly crime counts in Bankstown, New South Wales, Australia for an empirical illustration, the findings show the ability to select the promising models among the competing models in terms of DIC.

Keywords: Overdispersion, Markov chain Monte Carlo sampling, deviance information criterion, negative binomial, double Poisson, generalized Poisson.

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