

## **New Estimation in Autoregressive Models with Exponential White Noise by Using Reversible Jump MCMC Algorithm**

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**Abstract :** A white noise in autoregressive (AR) model is often assumed to be normally distributed. In application, the white noise usually do not follows a normal distribution. This paper aims to estimate a parameter of AR model that has a exponential white noise. A Bayesian method is adopted. A prior distribution of the parameter of AR model is selected and then this prior distribution is combined with a likelihood function of data to get a posterior distribution. Based on this posterior distribution, a Bayesian estimator for the parameter of AR model is estimated. Because the order of AR model is considered a parameter, this Bayesian estimator cannot be explicitly calculated. To resolve this problem, a method of reversible jump Markov Chain Monte Carlo (MCMC) is adopted. A result is a estimation of the parameter AR model can be simultaneously calculated.

**Keywords :** autoregressive (AR) model, exponential white Noise, bayesian, reversible jump Markov Chain Monte Carlo (MCMC)

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