Gibbs Sampling for Double Seasonal Moving Average Models

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In this paper we develop a Bayesian inference for multiplicative double seasonal moving average (DSMA) model by implementing a fast, easy and accurate Gibbs sampling algorithm. We first show that the conditional posterior distribution of the model parameters and the variance are multivariate normal and inverse gamma respectively, and then we apply the Gibbs sampling to approximate empirically the marginal posterior distributions. The proposed Bayesian methodology is illustrated using a simulated example.

Keywords: Multiplicative seasonal moving average; Double seasonality; Bayesian analysis; Gibbs sampler.