Segmentation of Piecewise Polynomial Regression Model by Using Reversible Jump MCMC Algorithm

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Abstract : Piecewise polynomial regression model is very flexible model for modeling the data. If the piecewise polynomial regression model is matched against the data, its parameters are not generally known. This paper studies the parameter estimation problem of piecewise polynomial regression model. The method which is used to estimate the parameters of the piecewise polynomial regression model is Bayesian method. Unfortunately, the Bayes estimator cannot be found analytically. Reversible jump MCMC algorithm is proposed to solve this problem. Reversible jump MCMC algorithm generates the Markov chain that converges to the limit distribution of the posterior distribution of piecewise polynomial regression model parameter. The resulting Markov chain is used to calculate the Bayes estimator for the parameters of piecewise polynomial regression model.

Keywords : piecewise regression, bayesian, reversible jump MCMC, segmentation

Conference Title : ICMCSSE 2016 : International Conference on Mathematical, Computational and Statistical Sciences and Engineering

Conference Location : London, United Kingdom

Conference Dates : June 23-24, 2016