

COLLOQUIUM

Department of Statistics and Probability
Michigan State University

Qiongxia Song

Department of Statistics and Probability
Michigan State University

Oracally Efficient Spline Smoothing of Nonlinear Additive Autoregression Models with Simultaneous Confidence Band

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10:20 a.m. - 11:10 a.m.

Refreshments: 10:00 a.m.

Abstract

Under weak conditions of smoothness and mixing, we propose splinebackfitted spline (SBS) estimators of the component functions for nonlinear additive autoregression model. The proposed SBS estimator is both computationally expedient for analyzing high dimensional large time series data since it can circumvent the curse of dimensionality, and theoretically reliable as the estimator is oracally efficient and comes with asymptotically simultaneous confidence band. Simulation evidence strongly corroborates with the asymptotic theory. We applied this SBS confidence band on a Boston Housing data to address some application. Key words and phrases: B spline, confidence band, knots, mixing, oracle efficiency. *(This talk is based on joint work with Professor Lijian Yang, Department of Statistics and Probability, Michigan State University.)*

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