

**Indiana University-Purdue University
Indianapolis**
Department of Mathematical Sciences

STATISTICS SEMINAR

12:15pm—1:15pm, Tuesday, September 08, 2020

Zoom Meeting: Meeting ID: 751 025 519

Speaker: Dr. Yuzhen Zhou

Department of Statistics, University of Nebraska-Lincoln

Title: Forecasting with clustering based spatially varying
auto-regressive model

Abstract:

Crop yield forecasting plays an important role in planning and management of fields. Yet, it becomes especially challenging to do forecasting when we only have short time series. The corn yield data in this study were collected in high spatial resolution (i.e., 10 x 10 m spatial resolution in 800 x 800 m domain) every other year from 2002 to 2016. In this paper, we propose a clustering based spatially varying auto-regressive model for forecasting yield. We compare the forecasting performance of our model with traditional time series model and a few machine learning algorithms. The results show that for short time series with high spatial resolution data, our proposed model outperforms other models.