A factor model approach for high-dimensional dynamic tensor time series

Rong Chen, Dan Yang and Cunhui Zhang

Department of Statistics, School of Arts and Sciences, Rutgers University, U.S.A.

Abstract

Modern data collection capabilities have led to massive quantity of time series. Large tensor (or multi-dimensional array) data are now routinely collected in a wide range of applications, and often such observations are taken over time, forming tensor time series. In this talk we present a factor model approach for analyzing high-dimensional dynamic tensor time series. Specifically the project will develop a general class of tensor factor models, with modifications for specific applications, in modeling matrix- and tensor-valued time series and dynamic networks. Estimation procedures along with their theoretical properties, numerical results and applications will be presented.