

Network-based Clustering for Varying Coefficient Panel Data Models

Tao Huang

Shanghai University of Finance and Economics

E-mail: huang.tao@mail.shufe.edu.cn

Abstract: In this talk, we introduce a novel varying-coefficient panel-data model with locally stationary regressors and unknown group structures, wherein the number of groups and the group membership are left unspecified. We develop a triple-localization approach to estimate the unknown subject-specific coefficient functions and then identify the latent group structure via community detection. To improve the efficiency of the first-stage estimator, we further propose a two-stage estimation method that enables the estimator to achieve optimal rates of convergence. In the theoretical part of the paper, we derive the asymptotic theory of the resultant estimators. In the empirical part, we present several simulated examples and a real data to illustrate the finite-sample performance of the proposed method.