

abstract: Recent years have seen rapid development and increasing adoption of spatial econometric models. Such models enable researchers to take spatial correlation into consideration, making modeling and analysis more accurate. This presentation contains three subjects in this field: (i) a threshold extension of a spatial dynamic panel data (SDPD) model with an M-estimator and accompanying robust variance-covariance matrix estimation; (ii) a simulation experiment revealing the bias and inefficiency when estimating spatial models using data sets sampled from the population with various sampling schemes, followed by a corresponding correction method based on Gibbs sampler under certain circumstance; (iii) a maximum-likelihood-based least absolute shrinkage and selection operator (ML-LASSO) estimator for spatial weight matrix estimation in spatial lag (SL) model with cyclic coordinate descent. All subjects are illustrated with simulation results and empirical data analysis.