



Bayesian Spatially-dependent clustering model in regression coefficients for space-time data

Jungsoon Choi^{1*} and Dayun Kang²

¹ Department of Mathematics, Hanyang University, Republic of Korea

² Department of Applied Statistics, Hanyang University, Seoul, Republic of Korea

* Speaker's email address: jungsoonchoi@hanyang.ac.kr

Abstract:

The effects of explanatory variable on response variable in space-time data may vary across space, and their effects may have spatial dependency structure. In addition, the regression coefficient value within spatial cluster may be a constant, but the values across spatial clusters may vary. In this work, we will propose a new Bayesian hierarchical spatially-dependent cluster modeling within the regression framework for space-time data. We will investigate the proposed models by using the range of simulation studies. Finally, we will conduct the real COVID-19 data analysis in USA to estimate the spatially-clustered effects of risk factor of interest on COVID-19 death cases.

Keywords:

Regression coefficient; clustering model; space-time data; Bayesian inference; hierarchical modelling