

國立中央大學

統計研究所

學術演講

主講人：陳怡如教授（淡江大學 統計系）

講題：A method for exploring spatial non-stationarity via quantile-based analysis of count data

時間：106年05月16日（星期二）上午11:00 ~ 12:00

地點：中央大學鴻經館M429室

茶會：上午10:30 ~ 11:00 地點：鴻經館510室

ABSTRACT

Due to its simple implementation and ease of interpretation, geographically weighted regression (GWR) is a useful and popular tool for exploring spatial non-stationarity (heterogeneity) in georeferenced data analysis. There have been a number of methods in literature that extend GWR to model spatial count data. These variants however relied mostly on the conditional mean to make inference about the distribution of a count dependent variable. When it comes to model spatial non-stationarity in the tails of the count outcome, analytical methods that give attention to other parts than the mean of the conditional distribution under GWR modeling framework remains largely unexplored. In this study, we attempt to address such gap by integrating quantile regression for counts into GWR. An approach, called GWQR-COUNT hereafter, is introduced as a new tool for examining spatial non-stationarity across locations at various quantiles of the count response distribution. We first formulate the modeling specification, and then employ bootstrap methods to conducting the inference of model parameters. A simple simulation study is also conducted to further validate the performance of the GWQR-COUNT method. Finally, the proposed technique is applied to a dataset of dengue fever in Taiwan as an empirical illustration.

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