國 立 東 華 大 學 應 用 數 學 系
專 題 演 講

主講人：鄧文舜教授

　　　　淡江大學統計學系

講　　題：Geographically Weighted Quantile Regression:

　　　　　An Application to U.S. Mortality Data

時　　間：99年12月01日(星期三)10:10-12:00

摘　要

Recent years have witnessed developments in exploring spatial non-stationarity and modeling the entire distribution of the regressand. Currently, the former is mainly addressed by geographically weighted regression (GWR) and quantile regression (QR) is developed to handle the latter. Little attention, however, has been paid to combining these analytical techniques. The goal of this paper is to fill this gap by introducing the geographically weighted qantile regression (GWQR). This study briefly reviews GWR and QR, respectively, and then outlines their synergy and a new approach GWQR. The proposed GWQR model is estimated nonparametrically by kernel smoothing method. We applied GWQR to the U.S. county data as an example, with mortality as the dependent variable and five social determinants as explanatory covariates. The analytic results at the 5, 25, 50, 75, and 95 percentiles are summarized as maps. We found that the associations between mortality and determinants not only vary spatially but also simultaneously vary across the distribution of mortality. These new findings help advance the mortality literature and are relevant to public policy and health promotion. Our GWQR approach bridges two important statistical approaches and facilitates spatial quantile-based statistical analyses.

上列演講地點於理學院A324會議室舉行

※※※ 歡　迎　參　加 ※※※ se991201C