

Applications of Spatial Data Analysis in Epidemiology

空間資料分析於防疫上之應用

Ming-Daw SU

Department of Bioenvironmental Systems Engineering

National Taiwan University, Taiwan

sumd@ntu.edu.tw

Most of the human activities, such as land uses, urban spawning, and disease diffusion are neither uniformly nor randomly distributed over space. The distribution patterns are usually affected by natural factors like topography, and also socio-economical factors like the distribution of infrastructures. Most of the data, especially socio-economical data, like land values, disease or criminal incidences, have some special characteristics in spatial aspect. This spatial characteristic can be more effectively handled by Geographic Information System (GIS). A GIS is a special kind of information system that can more effectively and efficiently handle spatial data in collecting, storing, editing, querying, analysis and displaying the data. This session will discuss some basic knowledge of GIS as well as its application in epidemiology and public health. Spatial pattern analysis and detection techniques are used for cluster and hot spots identification in epidemiological outbreak. GIS is demonstrated to be a useful and powerful tool in epidemiology and public health administration for saving lives.