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Spatial point process and its application in geographical epidemiology

Murat Yazici

JForce Information Technologies Inc., Turkey

In statistics, a point process is a set of independent points in time, or geographical or general spaces. It is also a type of random process. The streak of lightning can be an example as a point process in both time and geographical space. The statistical disease mapping and location detection of radio stations in a telecommunication network is given as another example. Also, point processes are powerful instruments in statistics for modeling spatial data which is of interest in various disciplines such as plant ecology, epidemiology, geography, seismology, materials science, telecommunications, economics, astronomy and others. Spatial point processes are a type of stochastic process, each of whose realizations consists of a finite or countably infinite set of points in the plane. They are useful in the analysis of observed patterns of points; where the points represent the locations of some object of study e.g. disease cases, or petty crimes. Furthermore, spatial point processes occur in various areas in biology and ecology, e.g. in connection with the spreading of insect larvae, the distribution of trees in woodlands, the distribution of bird's nests, or experiments with revitalization of eroded areas in the Wadden sea. The geographical epidemiology is interested in the examination and definition of disease. It is also concerned with geographic variations and usually demographic, behavioral, environmental, socioeconomic, and genetic information etc. Some of types of studies of the geographical epidemiology are disease mapping, geographic correlation studies, and disease clustering. The spatial point process in geographical epidemiology is concerned with spatial analysis of geographical epidemiology by using point process.

Biography

Murat Yazici has completed his BSc in Statistics and MSc in Quantitative Methods. During his Statistics and Quantitative Methods educations, he studied Bayesian Statistical Estimation as a thesis-project and Fuzzy Robust Regression Analysis as a Master's thesis. He has several scientific papers and a book chapter study about big data analytics. He has attended several conferences to present his studies. He works as Senior Data Scientist & Researcher at JForce Information Technologies Inc. which is one of the solutions partners of IBM in Istanbul. His research areas include "analytic studies in many areas such as health, telecommunication, security, banking, insurance, transportation and logistics sectors"

asiscrus.muratyazici@gmail.com

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