

COLLOQUIUM

Department of Statistics
University of South Carolina

Multivariate Extremes, Max-Stable Process Estimation and Dynamic Financial Modeling

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Refreshments: 3:00-3:30 LC 213

Abstract

Studies have shown that time series data from finance, insurance and environment etc. are fat tailed and clustered when extremal events occur. In an effort to characterize such extremal processes, max-stable processes or min-stable processes have been proposed since the 1980s and some probabilistic properties have been obtained. However, applications are very limited due to the lack of efficient statistical estimation methods. Recently, the author has shown some probabilistic properties of the processes and proposed a series of estimation procedures to estimate the underlying max-stable processes, i.e., multivariate maxima of moving maxima processes. In this talk, I will present some basic properties, estimating procedures of multivariate extremal processes, and illustrate how to model financial data as moving maxima processes. Examples will be illustrated with GE, Citibank, Pfizer stock index data.

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