Sabbatical Report

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Abstract

This sabbatical talk includes two parts. First I will briefly introduce my sabbatical work. Then I will focus on the following paper, which is completed during my sabbatical.

Asymptotics of Generalized Depth-Based Spread Processes and Applications

In this paper, we study the asymptotic behavior of generalized depth-based spread processes, which include the scale curve of Liu, Parelius and Singh (1999) as a special case. Both uniform strong and weak convergences of the generalized depth-based spread processes are established. As applications, we obtain the asymptotic distributions of some nonparametric multivariate kurtosis measures. Applications to compare spread and kurtosis of two multivariate data sets and to assess multivariate normality are also discussed, along with illustration via simulated data.

Refreshments at 3:45