



Department of Mathematics and Statistics

Colloquium

Tuesday March 3

4:00 - 5:00 pm Adel 164

## On Performances of Some Algorithms for Nonparametric Multivariate Analysis

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### Abstract

In modern statistics, almost all statistical methods are implemented through algorithms. It is natural that performance of a statistical method is greatly affected by the algorithm for the method. Are there any problems on the algorithms in the very popular statistical software packages? To answer this question, we study some well-known algorithms for nonparametric multivariate analysis in R. It is found that the performances of the algorithms decline quickly as dimension increases. The effect of data shape on the performances of the algorithms is also studied. Our finding is that the performances of those algorithms decrease as kurtosis increases. In addition, some new descriptive measures for multivariate data will be proposed and discussed. (This is my keynote speech at an international conference last year.)

Refreshments at 3:45