



THE HONG KONG UNIVERSITY OF SCIENCE & TECHNOLOGY

Department of Mathematics

## PHD STUDENT SEMINAR

# Adjusted Chatterjee Correlation Coefficient

By

**Miss Ya WANG**

### Abstract

We propose the Adjusted Chatterjee Correlation Coefficient (AC3), which shows better performance on local signal detection and generality property compared with the original one. The original Chatterjee correlation could be easily affected by the oscillation and some local noise due to its simple form which takes all the data points into consideration. AC3 not only states similar consistency and asymptotic theory, but also could capture different functional relationships. Power comparisons are carried out in the simulation study to illustrate that AC3 is as powerful as the original Chatterjee Correlation to be the test statistic for testing independence. In addition, we demonstrate that AC3 can detect more signals than the original one in the real data application.

**Date : 8 May 2021 (Saturday)**

**Time : 11:00am**

**Zoom Meeting : <https://hkust.zoom.us/j/9556258142> (Passcode: 123456)**

*All are Welcome!*