GRADUATE SEMINAR

Qi Lyu

Quantile Regression and Multivariate Asymmetric Laplace Distribution

PHD Student supervised by Dr. Andrei Volodin and Dr. Dianliang Deng

Monday, March 22, 2021
11:30 am
University of Regina
Zoom Meeting ID: 941 2536 7372

Abstract:

The classical linear regression model aims to explore the relationship between response variable and predictors by using the conditional mean function. However, there are several assumptions contained in this model that are usually unjustified in practice. To overcome it, quantile regression approach was introduced by Koenker and Bassett in 1978. This approach has a more complete picture of the whole conditional distribution of response and is robust in many specific situations.

Quantile regression model requires the given quantile of error distribution is zero, which is a famous property of Univariate Asymmetric Laplace distribution. Considering the practical applications, the univariate distribution can be generalized to the multivariate case.

In this talk, I will first give a brief introduction to quantile regression approach. Then the Univariate and Multivariate Asymmetric Laplace distribution will be discussed, especially the representation which is commonly-used for simulation. Finally the multiple linear quantile regression model is built and the conditional quantile function of response is easily acquired.

University of Regina

Mathematics and Statistics