

# GRADUATE SEMINAR

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## ON THE EFFECTS OF NONLINEARITY BETWEEN VARIABLES ON THE CORRELATION COEFFICIENT

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**Date: August 01, 2018**

**Time: 3:30 - 4:30**

**Location: CL 317**

**Abstract:** Correlation analysis, expressed by correlation coefficients is one of the most widely used tools in the study of variables and their relationships.

One of the very important underlying assumptions of the  $t$  test statistic for the Pearson Correlation coefficient is the assumption of bivariate normality.

A simulation study by Monte-Carlo method was used to investigate the effect of violating the assumption of bivariate normality on the Pearson correlation coefficient.

In this lecture, I will examine the impacts of nonlinearity between a pair of variables when they are not independent, even though the population correlation is zero.

**Keywords:** Bivariate normality assumption, Student's  $t$  statistic, Pearson correlation coefficient.