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Title: **Heuristic methods to combat the regression challenges**
Speaker: **Mahdi Roozbeh**
Date: **31 January 2024**
Time: **10.30 am – 11.30am**
Venue: **MM3, Level 2, Institute of Mathematical Science, Faculty of Science.**

ABSTRACT

Under some non-stochastic linear restrictions based on either additional information or prior knowledge in a semiparametric regression model, a family of feasible generalized robust estimators for the regression parameter is proposed. The least trimmed squares (LTS) method was proposed by Rousseeuw as a highly robust regression estimator, is a statistical technique for fitting a regression model based on the subset of h observations (out of n) whose least squares fit possesses the smallest sum of squared residuals. The coverage h may be set between $n/2$ and n. For practical use, it is assumed that the covariance matrix of the error term is unknown and thus, feasible estimators are replaced. Limit Theorems about proposed robust estimators under some conditions are also extracted, and a robust test is given for testing the symmetry hypothesis H_0: $R\beta=0$. Through a real data example, the performance of the feasible type of robust estimators is compared with the classical ones in restricted semiparametric regression models.

Keyword: Breakdown point; Feasible estimator; Least trimmed squares estimator; Robust estimation; Semiparametric regression model .

All are Welcome