

Statistics Seminar
Department of Mathematics and Statistics

DATE:	Thursday, March 16, 2022
TIME:	1:15pm - 2:15pm
LOCATION:	WH 100E
SPEAKER:	Zifan Huang, Binghamton University
TITLE:	Estimations of variances of the MLE parameters under the multiple linear regression model and the uniform distribution

Abstract

The maximum likelihood estimator (MLE) under the multiple linear regression model and the uniform distribution is studied. An algorithm for deriving the exact value of the MLE, rather than its approximation, is presented and the asymptotic properties of the MLE are studied. We derive the explicit expressions for the estimators of variances of the MLE of the location parameters, but can not find the expression for the asymptotic variance of the MLE of the regression coefficient β . It turns out that the latter cannot be estimated by the Bootstrap method or the Jackknife method. We propose a valid alternative. We also study the confidence intervals of the parameters. We apply these results to two real data sets related to medical research. Simulation results are also presented.

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