

MICHIGAN STATE UNIVERSITY
Department of Statistics and Probability

COLLOQUIUM

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QUANTILE MARGINAL REGRESSION FOR LONGITUDINAL DATA WITH DROPOUTS

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10:20 a.m. - 11:10 am
Refreshments 10:00 am
C405 Wells Hall

Abstract

In many biomedical studies, independent variables may affect the conditional distribution of the response differently in the middle as opposed to the upper or lower tail. Quantile regression evaluates diverse covariate effects on the conditional distribution of the response with quantile specific regression coefficients. In the talk, the speaker introduces an empirical likelihood inference procedure for longitudinal data that accommodates both the within subject correlations and informative dropouts under missing at random mechanisms. We borrow matrix expansion idea of quadratic inference function and incorporate the within subject correlations under an informative working correlation structure. The proposed procedure does not assume the exact knowledge of the true correlation structure nor does it estimate the parameters of the correlation structure. Theoretical results show that the resulting estimator is asymptotically normal and more efficient than one attained under a working independence correlation structure. We expand the proposed approach to account for informative dropouts under missing at random mechanisms. The methodology is illustrated by empirical studies and a real life example of HIV data analysis.

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