

DEPARTMENT OF MATHEMATICS AND STATISTICS
MISSISSIPPI STATE UNIVERSITY

COLLOQUIUM

Efficiency of the Maximum Partial Likelihood Estimator for Sampling Designs in Cox Regression Model

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Allen 14

Abstract. The Cox hazard regression model is a popular method used in epidemiological research to quantify the effects of prognostic factors on survival for a cohort of individuals followed over time. In practice, it is often difficult or expensive to collect complete data when dealing with large cohorts. Therefore, a number of practical sampling designs have been put forward. However, it is not always clear that the estimators in those designs use the given sampled data in the most efficient manner. In this presentation, I will discuss the asymptotic efficiency of the estimators from two popular sampling designs - case cohort and nested case control samplings. In addition, by comparing the theoretical lower bound with the limiting distribution of the estimators, I will indicate in what instances the estimators achieve the lower bound, and what situations make for large efficiency losses.

Dr. Zhang is a candidate for a position in our department. There will be a reception for him in Allen 467 at 3:00 pm preceding his talk.

Contact Michael Neumann, neumann@math.msstate.edu or (662) 325-7159, for additional information.