CCSU
DEPARTMENT OF MATHEMATICAL SCIENCES

COLLOQUIUM

Friday, April 29
2:00 – 3:00 PM
Maria Sanford, Room 101

INFERENCE PROBLEMS IN INVERSE GAUSSIAN MODELS

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ABSTRACT

Srivastava (1974, 1980) investigated some estimators of mean of a normal population utilizing the coefficient of variation. This problem is of practical importance in survey sampling, where the value of the coefficient of variation may be assumed to be known. However, the normal model may not hold for positive or positively skewed data, hence an alternative model may have to be employed. In case, population can be approximated by an inverse Gaussian distribution, estimation of the coefficient of variation has to be done differently. In this case, the UMVUE of the coefficient of variation exists in a simple form. This is subsequently used in obtaining an alternative estimator of the mean. We developed simple approximating formulae for the first four moments of the new estimator which may be used to approximate its finite sample distribution. The form of the approximation is used in developing empirical formulae as polynomials in the ratio of the square of the coefficient of variation and the sample size. Properties of the resulting estimator are theoretically and numerically investigated.

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