CCSU
DEPARTMENT OF MATHEMATICAL SCIENCES

COLLOQUIUM

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

TESTING FOR TWO LINEAR RESTRICTIONS WITH APPLICATIONS TO NON-LINEAR REGRESSION MODELS

KRISHNA K. SAHA

CENTRAL CONNECTICUT STATE UNIVERSITY

(Joint work with Maxwell King)

ABSTRACT

Specifying the true statistical model is a critical component in statistical estimation and inference. A common type of misspecification in regression models is that caused by including unnecessary predictors in the model or by excluding important ones in the model under consideration. Unfortunately, this issue is poorly understood by many practicing Data Analysts and Statisticians alike. In this talk, the problem of inference of two linear regression parameters in the nonlinear regression models is considered, and some possible asymptotic hypothesis testing approaches are reviewed. In addition, we demonstrate new test procedures, bivariate contour tests, which do not face the limitations of existing test methods, and compare by Monte Carlo simulations, in terms of size and power properties. Simulation results indicate that the new test procedures perform rather well in both respects showing the better monotonic power performance by controlling the size in the small samples. Real-life data sets are analyzed using R to illustrate the usefulness of this inferential procedure in practice.

For further information:
gotchevi@ccsu.edu 860-832-2839
castanedan@ccsu.edu 860-832-2851