

**NORTH CAROLINA STATE UNIVERSITY
EDWARD P. FITTS DEPARTMENT
OF INDUSTRIAL AND SYSTEMS ENGINEERING**

IE/OR 601/801

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407 Daniels Hall
11:30 a.m.**

STEADY-STATE SIMULATION ANALYSIS USING ASAP3

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Abstract

We discuss ASAP3, a sequential procedure based on the method of nonoverlapping batch means that delivers point and confidence-interval estimators for the expected response of a steady-state simulation. The resulting confidence interval satisfies user-specified requirements on absolute or relative precision as well as coverage probability. ASAP3 uses the Shapiro-Wilk test for multivariate normality and a first-order autoregressive time series model of the batch means to determine a batch size and a warm-up period beyond which the resulting batch means constitute an approximately stationary Gaussian process with lag-one correlation not significantly exceeding 0.8. Next ASAP3 computes an inverse Cornish-Fisher expansion for the classical batch means t-ratio; and finally ASAP3 delivers a correlation-adjusted confidence interval based on this expansion. We present an extensive experimental performance comparison of ASAP3 with other widely used simulation analysis procedures. We also demonstrate the operation of a stand-alone version of the ASAP3 software.

This is joint work with N. Steiger (Maine Business School); E. Lada (SAS Institute); J. Joines (NC State); and C. Alexopoulos and D. Goldsman (Georgia Tech).

Refreshments will be served in 401 Daniels Hall at 11:00 a.m.