A Tutorial on Statistical Analysis of Simulation Output Data

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Abstract

In many simulation studies a large amount of time and money is spent on model development, but little effort is made to analyze the simulation output data in a proper manner. Since most simulation models use random variables as input, the output data are themselves random and care must therefore be taken in drawing conclusions about the system under study.

In this talk we present a state-of-the-art survey of procedures which can be used for constructing confidence intervals for measures of performance of a simulated system. The emphasis will be on simple, easy-to-use procedures which have been shown to perform well in practice. We conclude with a discussion of computer packages for automatic output data analysis.

The complete content of this talk may be found in Law [1] and Law and Kelton [2,3], which are available from this author.

REFERENCES

1. Law, A. M., "Statistical Analysis of Simulation Output Data with SIMSCRIPT II.5," CACI, Inc., Los Angeles (1979).

2. Law, A. M. and W. D. Kelton, "Confidence Intervals for Steady-State Simulations, I: A Survey of Fixed Sample Size Procedures," Technical Report No. 78-5, Dept. of Industrial Engineering, University of Wisconsin (1979).

3. Law, A. M. and W. D. Kelton, "Confidence Intervals for Steady-State Simulations, II: A Survey of Sequential Procedures," Technical Report No. 78-6, Dept. of Industrial Engineering, University of Wisconsin (1978).

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