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MULTIVARIATE OUTPUT ANALYSIS IN SIMULATION:

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Most of the research in the analysis of output data
from discrete event simulations has been concerned
with statistical inference for a single parameter us-
ing data from one or more simulation runs. In prac-
tice, however, the information one seeks from highly
complex and expensive simulation runs usually cannot
be summarized in a single system parameter. Therefore,
multivariate inferential procedures must be applied to
compute simultaneous confidence intervals or joint con-
fidence regions for multiple parameters, or to test hy-
potheses concerning the values of multiple parameters.

In this presentation we will discuss those procedures
for multivariate inference that are available for anal-
ysis of simulation data. These include multivariate
methods for independent observations, multivariate re-
generative methods, multivariate batch means and multi-
variate batch ratios. Finally, we will discuss partic-
ular problems with multivariate analysis and examine
potential directions for research to solve these prob-
lems.