

Simulation-based Response Surface Estimation in the Presence of Monotonicity

E. Lim and P. W. Glynn

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In many stochastic models, it is known that the response surface corresponding to a particular performance measure is monotone in the underlying parameter. For example, the steady-state mean waiting time for customers in a single server queue is known to be monotone in the service rate. In other contexts, the simulator may believe, on the basis of intuition, that the response surface is monotone. This paper describes an appropriate methodology for incorporating such monotonicity constraints into one's response surface estimator.