New Estimators for Parallel Steady-State Simulations

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Proceedings of the 2009 Winter Simulation Conference, 469-474 (2009)

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When estimating steady-state parameters in parallel discrete event simulation, initial transient is an important issue to consider. To mitigate the impact of initial condition on the quality of the estimator, we consider a class of estimators obtained by putting different weights on the sampling average across replications at selected time points. The weights are chosen to maximize their Gaussian likelihood. Then we apply model selection criterion due to Akaike and Schwarz to select two of them as our proposed estimators. In terms of relative root MSE, the proposed estimators compared favorably to the standard time average estimator in a typical test problem with significant initial transient.