On steady-state simulation of some weak regenerative networks

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Abstract

The possibilities of the so-called *weak regeneration* in the steady-state analysis of multiserver queues and some Jackson-type and multiclass queueing networks when classical regenerative simulation is ineffective ARE discussed. A few constructions of weak regeneration for open Jackson-type and multiclass queueing networks are given in an explicit form. Conditions are found when efficiency of weak regeneration (expressed in the simulation time needed for confidence estimation with a given precision) stays very high while the efficiency of classical regeneration is rapidly decreasing. Numerical results are also considered which illustrate an advantage of the weak regeneration in simulation of some tandem queueing networks.

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