QMIPS

Quantitative
Modeling
In
Parallel
Systems

Response Times in Two Random Queues

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Abstract The effect of two notions of random choice in an M/M/1 queue is investigated in terms of response time distribution. In the first queue, the next customer to be served is chosen at random whereas in the second, arriving customers join the queue at a random position (without preemption) but are served in order. We analyse the differences between these queues in terms of their response (or sojourn) time distributions, the Laplace–Stieltjes transforms of which we derive as analytical formulae.

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