

On the Behavior of LIFO Preemptive Resume Queues in Heavy Traffic

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Abstract

This paper studies heavy traffic behavior of a G/G/1 last-in-first-out (LIFO) preemptive resume queue, by extending the techniques developed in Limic (1999). The queue length process exhibits a perhaps unexpected heavy traffic behavior. The diffusion limit depends on the type of arrivals (and services) in a fairly intricate way, related to the Wiener-Hopf factorization for random walks.

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