

SELF-OPTIMISING STATE-DEPENDENT ROUTING IN PARALLEL QUEUES WITH BATCH SERVERS

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It is well-known that adding extra capacity to queues in networks where individuals choose their own route can sometimes severely degrade performance, rather than improving it. We will discuss two examples of queueing networks containing batch service queues where this is the case under probabilistic routing, but where under state-dependent routing the worst case performance is no longer seen in numerical examples. This raises the more general question of whether giving arrivals more information about the state of the network can lead to better performance, and the performance of state-dependent routing with other types of queue, such as processor sharing.

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