A reversible loss system with multi-type customers and multi-type servers

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Abstract

We consider a memoryless loss system with servers $S = \{1, \ldots, J\}$, and with customer types $C = \{1, \ldots, I\}$. Servers are multi-type, so that server $j$ can serve a subset of customer types $C(j)$. We show that the probabilities of assigning arriving customers to idle servers can be chosen in such a way that the Markov process describing the system is reversible, with a simple product form stationary distribution.

Keywords: Service system; loss system; multi type customers; multi type servers; product form solution; reversible Markov chain.

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