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On vacation models with bulk arrivals. (English) Zbl 0701.60099

Belg. J. Oper. Res. Stat. Comput. Sci. 30, No. 1, 53-66 (1990).

Summary: We consider a single server infinite capacity queueing system with Poisson arrivals of customer groups of random size and a general service time distribution, the server of which applies a general exhaustive service vacation policy. We are concerned with the steady-state distributions of the queue length at a post-departure epoch and at an arbitrary epoch. We give a probabilistic proof of a relation between each of these distributions and the corresponding one in the bulk arrival model without server vacations. Specific types of vacation policies are then considered.

MSC:

[60K25](#) Queueing theory (aspects of probability theory)

[90B22](#) Queues and service in operations research

Cited in 1 Review Cited in 1 Document
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Keywords:

single server infinite capacity queueing system; service vacation policy; bulk arrival model