Volkovinskii, M. I.; **Volkovinskii, O. F.**

A queuing system with variable parameters. (English. Russian original) Zbl 0677.60104

Autom. Remote Control 49, No. 7, 903-913 (1988); translation from Avtom. Telemekh. 1988, No. 7, 107-120 (1988).

The authors consider a queueing system consisting of n servers with state-dependent Markovian input of rate λ_m if m customers are in the system. The required amount of work for a customer has a general probability density depending on the number of customers in the system at the beginning of his service. The service is accomplished with a service rate depending again on the number of customers in the system. For the distribution of the queue length, of the amount of work serving all customers present in the queue at time t and of the duration of the busy period the Laplace transform is obtained.

Reviewer: H.Schellhaas

MSC:

60K25 Queueing theory (aspects of probability theory)
90B22 Queues and service in operations research

Keywords:

queueing system; state-dependent Markovian input of rate; distribution of the queue length; Laplace transform