Abstract

Bulk arrival general service retrial queueing system is analyzed in this paper. Server provides two phases of service-essential and optimal. After each service completion, the server searches for customers in the orbit. Customers may balk or renege at particular times. Accidental and active breakdown of the server is considered. The repair of the failed server starts after a random amount of time known as delay time. After repair the server continues the service of the interrupted customer or waits for the same customer. The necessary and sufficient condition for the system to be stable is presented. By applying supplementary variable technique, the steady state distributions of the server state and the number of customers in the orbit are obtained. Numerical examples are presented to illustrate the influence of the parameters on several performance characteristics.
Bulk Arrival Two Phase Retrial Queueing System with Impatient Customers, Orbital Search, Active Breakdowns and Delayed Repair


**Index Terms**

Computer Science  
Algorithms

**Keywords**

Retrial Queue  
Server Breakdown  
Orbital Search  
Delayed Repair  
Reserved Time