

A Cost-Effective Evaluation of Single Server Multiple Variants and the Working Vacation Queueing Approach with a Waiting Server

Authors : R. Remya

Abstract : We consider an M/M/1 multiple variant vacation queueing system and working vacation with waiting server. Here, comparing considering three models. First model, working vacation is taken after the server has exhaustively served all the customers in the system and waits random amount of time. After completing a working vacation, the server will wait for a random period of time before going on vacation. Then it goes to finite number of vacations same way. After end of Jth vacation server waits in busy or served immediately. Second model, working vacation is taken after the server has exhaustively served all the customers in the system and waits random amount of time. Third model, working vacation is taken after the server has exhaustively served all the customers in the system and waits random amount of time. It is expected that service times and vacation lengths are exponentially distributed . We provide a steady-state solution and cost comparison for the stated models.

Keywords : vacation, working vacation, waiting server, steady state analysis, cost analysis

Conference Title : ICQT 2024 : International Conference on Queueing Theory

Conference Location : Zurich, Switzerland

Conference Dates : July 29-30, 2024