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On a $M^{[x]}/M^{[b]}/1$ Queueing System With General Vacation Times

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Abstract

A queuing system with bulk input following a compound Poisson process and bulk output following the min(n $\geq$ 1,b) rule for batches has been studied. The server vacations have been assumed to start at time epoches, t_o, t_1, t_2 ,... of service completions of various batches and the vacation periods have been assumed to follow a general distribution with an arbitrary pdf. The probability generating functions for the number in the system have been obtained and some particular cases have been discussed. Finally, steady state results as well as the mean number in the system have been explicitly derived for some particular cases.

Keywords: Queueing system, Poisson Process.