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EXPLICIT RESULTS IN SINGLE COUNTER EXPONENTIAL QUEUES WITH HETEROGENEITY IN ARRIVAL PROCESS

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Abstract

The ensuing queuing model studies the transient and steady state behavior of a first-come-first-served single server Markovian queuing system wherein the arrival process remains in two stages said to be state A and B. It remains in a state for a random time which is exponentially distributed. Laplace transforms of the various probability generating functions are obtained and the steady state results are explicitly derived. The probability that the arrival process (Input) will be in state A and B is also obtained.

Key Words : *Queuing theory, Markovian process, Exponential distribution, Poisson distribution, Probability generating function.*