

## **An M/G/1/1 Queue with Unreliable Server and No Waiting Capacity**

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### **Abstract**

An M/G/1 queueing system with no waiting room is considered. The server is assumed to provide two types of services-regular and optional with the provision of server breakdown. Explicit expressions for the transient probabilities for the system being idle, busy and breakdown are obtained. The reliability and availability analysis of the system are carried out. For the specific choice of distributions and parameters involved, numerical illustrations are provided. Earlier results are deduced as special cases of this more general model.

*Keywords:* Queueing System, Regular and Optional Services, Server Breakdown, Reliability, Availability, Transient Solution.