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OPTIMIZATION OF A QUEUEING SYSTEM WITH INVERSE-GAUSSIAN SERVICE PATTERN

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Abstract: In this paper parameters involvedin a single server waiting line system with poisson arrivals and Inversegaussian service times are estimated. Also, the same result has been obtained when it is assumed that the service time distribution is a finite range model namely, Mukheerji-Islam model, which is a well-known life testing model.

Keywords: waiting line system; service time distribution; mean; variance; inversegaussian service time distribution.

2010 AMS Subject Classification: 90B22, 60K25.

1. INTRODUCTION

The Inversegaussian family of distributions are often used in analyzing many of the realistic situations arising at life testing, economical analysis, insurance studies etc. The major advantage of this distribution is the interpretation of the inversegaussian random variable as the first passage time distribution of Brownian motion with positive drift.In textile industries the printing or bleaching processed are distribution approximately as Inversegaussian distribution . Here unit of cloth is to be taken as customer, the printing or bleaching is viewed as service. In spite of wide applicability of the inversegaussian distribution as approximate model of skewed data and having simple exact sampling theory. It has been not much utilized in analyzing waiting line systems.

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