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A Continuous Review Inventory Model with Ordering Cost Dependent on Lead Time

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Abstract

This paper investigates the impact of lead time reduction on the modified continuous review inventory systems with a mixture of backorders and lost sales, where lead time and ordering cost reductions act dependently. The objective is to minimize the total related cost by simultaneously optimizing the order quantity, reorder point, and lead time. The lead time demand is assumed to be normally distributed. We first consider the case where the lead time and ordering cost reductions with linear function, then consider the logarithmic functional relationship. A procedure of finding the optimal solution is developed, and two numerical examples are given to illustrate the results.

Keywords: Inventory, Lead Time Reduction, Crashing Cost.