

Optimal Production Plan for Two-Level Production Process of a Single Product

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Abstract

This paper deals with the production plan model for two-level production process. Its aim is to minimize the total cost. Total cost is the sum of the production costs and inventory costs of semi-finished and finished goods. Research has shown that as the cost of producing semi-finished goods within a unit time is smaller, or if the cost of holding finished goods within a unit time is higher, or if the cost of producing finished goods within a unit time is higher, or if the cost of holding finished goods within a unit time is smaller, then during the entire production process, the difference between the production level of semi-finished goods and finished goods becomes smaller. This characteristic and the other properties presented in this article can serve as reference for a good production strategy.

Keywords: Production plan, Calculus of variations, Inventory.