Optimizing Storage Locations for Transshipment Inventories

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Abstract

It is discussed how to determine the storage locations for transshipment inventories. The transshipment inventories include works-in-process in manufacturing systems, transshipment cargoes in ports, containers in temporary stocking yards, etc. The main issue is how to share spaces of storage areas among different competing inventories that arrive at different times and stay during different periods of time. Storage areas are characterized by different locations, amounts of spaces, and handling costs. A mixed-integer linear programming model is suggested for optimizing storage locations. The sub-gradient optimization technique is used to solve the problem. Numerical experiments were conducted to evaluate the performance of the algorithm suggested.