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Variable neighborhood search for Multiple Level Warehouse Layout Problem ☆

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Abstract

In this paper we present a variable neighborhood search algorithm (VNS) for solving Multiple Level Warehouse Layout Problem (MLWLP). The algorithm deals with a specific representation of the solution, enabling the effective application of the shaking and local search procedures. System of neighborhoods changes the assignment ordering for an increasing number of items, while local search procedure tries to locally improve the solution by swapping the assignment ordering for pairs of items. Numerical experiments are performed on instances known in the literature. Computational results show that the proposed VNS achieves all optimal solutions for smaller instances, while for larger instances it finds rather better solutions than previously known method.

Previous article

Next article

Keywords

Layout problem; Variable Neighborhood Search; Discrete Optimization

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