

A Heuristic Algorithm for Designing Automated Storage/Retrieval

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ABSTRACT

The study focuses on the design of an AS/RS (Automated Storage and Retrieval Systems). Cost, equipment, and operation parameters necessary to define an AS/RS are given as input. A heuristic algorithm based on an optimization model is developed. A best solution (i.e. near-optimal solution) is obtained through the algorithm. The solution shows the best physical design which satisfies the operation requirement and has minimum total cost. The travel-time model developed by Hwang and Lee is used to calculate system throughput. Based on the same model, it is also shown that maximum throughput will be achieved when the shape factor of the system equals to one.

Keywords : AS/RS ; Heuristic ; Algorithm ; shape factor ; optimization ; Throughput

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