A Heuristic Algorithm for Designing Automated Storage/Retrieval

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ABSTRACT

The study focuses on the design of an AS/RS (Automa-ted Storage and Retri-eval Systems). Cost, equipment, and operation parameters necessary to definean AS/RS are given as input. A heuristic algorithm based on an optimizationmodel is developed. A best solution (i.e. near-optimal solution) is obtainedthrough the algorithm. The solution shows the best physical design which sati-sfies the operation requirement and has minimum total cost. The travel-timemodel developed by Hwang and Lee is used to calculate system throughput. Basedon the same model, it is also shown that maximum throughput will be achievedwhen the shape factor of the system equals to one.

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

Table of Contents

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