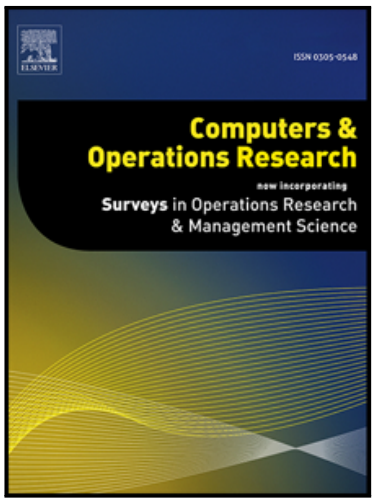

A dynamic scheduling approach for optimizing the material handling operations in a robotic cell

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Highlights

- We investigate a new real-time dynamic robotic scheduling problem with the consideration of newly arriving jobs, transportation operations of a robot and processing time windows.
- A strengthened mixed integer programming model is developed by adding a set of speed-up constraints.
- An iterative algorithm based on the characteristics of the problem is proposed to solve the problem in an efficient way.
- Computational results validate effectiveness and efficiency of the strengthened MIP model and the iterative algorithm.