A Robust Heuristic for Scheduling the Loading and Unloading of Trucks

Abstract
In this paper, we present a robust scheduling optimization model for the loading or unloading of trucks at cross-docks. The problem considers different scenarios at a given time. A formulation of the scenario-based robust optimization problem is given and a robust surrogate heuristic algorithm is developed to solve the problem. We include numerical examples and the computational results of the experiments conducted. The computational results from the algorithm are tested against the actual solution of the optimization problem using the robust measures discussed in the paper. The bounds and worst case scenarios are discussed as well. We find that the surrogate heuristic is easy to use and it provides solutions close to the optimal solution.

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