

Heuristics and metaheuristics for mixed blocking constraints flowshop scheduling problems

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Abstract:

Storage or buffer capacities between successive machines in flowshop problems may be unlimited, limited or null. The last two cases can lead to blocking situations. In flowshop scheduling literature, many studies have been performed about classical flowshop problems and also about some problems with only one blocking situation between all machines.

This paper deals with makespan minimization in flowshop scheduling problems where mixed blocking constraints are considered. After a problem description and definitions of different blocking constraints, a mathematical model is presented and heuristics are developed to propose quick solutions to these kinds of problems. Then, metaheuristics are used to improve found solutions. A comparison between heuristics and metaheuristics is then performed.

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