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Metaheuristics Applied to the Manufacturing Cell Formation Problem

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This work aims to present an Evolutive Algorithm (EA) and a Greedy Randomized Adaptive Search Procedure (GRASP) algorithm to solve the Manufacturing Cell Formation Problem (MCP). The MCP has been an important tool for many kinds of production systems, helping managers to obtain a better control and efficiency of them.

The EA and GRASP algorithms have successfully solved several combinatorial problems related to the otimization. In this work we propose some procedures of local search and construction of solutions and many combinations of them were tested in the EA and GRASP algorithms in order to conclude about the relevance of each procedure in the performance of the algorithms.

The proprosed algorithms are compared with some available algorithms in the literature and their results are promissing, indicating that they can be used as a tool to solve the MCP.