Resource Leveling in Make-to-Order Production: Modeling and Heuristic Solution Method

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Abstract⎯We consider the mid-term production planning problem in make-to-order production, which consists in scheduling production orders so that the variability in the resource utilization over time is minimized. The problem is modeled as a resource leveling project scheduling problem, where production orders for final products and main components correspond to activities of a project. We present a new population-based resource leveling procedure of the iterated greedy type. The results of an experimental performance analysis including projects with up to 1000 activities indicate that the new method outperforms state-of-the-art resource leveling heuristics from literature.

Keywords⎯Make-to-order production, Resource leveling, Project scheduling, Stochastic local search, iterated greedy heuristic

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