

An exact method for the multi-product p-batch processing time maximization problem

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Abstract

Among the most complex multi-product batch problems are the multi-product p-batch scheduling (MPBS) problems, where jobs must be scheduled on parallel batch processing machines. When applying some local search heuristics to solve a MPBS problem, it can be necessary to iteratively solve a single stage multi-product p-batch sizing problem with different processing rates for different products, limited capacity units, and storage capacity defined both for each product and for all products. In this paper we name this problem multi-product p-batch processing time maximization (MBPTM) problem. Once a MBPTM problem needs to be solved in each iteration, the efficiency of the method developed for solving it has a huge impact on the computational cost of the local search algorithm used to solve some MPPBS problems. In addition, for some industries, efficiently solving a MBPTM problem can

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