ABSTRACT

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Bi-objective optimization in flowshop problems

Machine scheduling problems appear in many production processes, and are an essential part of the supply chain. Among them, flowshop scheduling problems arisewhen a number of jobs have to be sequentially processed by a number of machines.

The Permutation Flowshop Scheduling problem with additional Resources during Setups (PFSR-S) assumes that machines need setups between the processing of different jobs, and that such setups require a number of additional resources, e.g. operators, of limitedavailability.

The PFSR-S has recently been proposed. In this talk, we show a bi-objective variant of the problem, in which both the makespan of the schedule and the amount of resources needed are simultaneously minimized. An exact approach and a heuristic approach are proposed, and compared over a benchmark of randomly generated instances.