Scheduling for a Flowshop of Batch Processing Machines

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Abstract

This paper considers a scheduling problem for a multi-stage flowshop of batch processing machines. In the problem, each batch processing machine can process a batch of jobs simultaneously so that all jobs contained in each batch are released together to the next machine after their processing. With respect to any regular measure of performance, several solution properties are characterized to exploit a problem reduction procedure for removing dominated machines. The reduction procedure is incorporated into an efficient heuristic solution algorithm for minimizing makespan. Several numerical experiments show that the proposed reduction procedure contributes to remove many non-bottleneck machines for the heuristic to generate good schedules.

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