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A single  
machine

## scheduling problem with availability constraints and sequence-dependent setup costs (Article) (Open Access)

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### Abstract

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We study a single machine scheduling problem with availability constraints and sequence-dependent setup costs, with the aim of minimizing the makespan. To the authors' knowledge, this problem has not been treated as such in the operations research literature. We derive in this paper a mixed integer programming model to deal with such scheduling problem. Computational tests showed that commercial solvers are capable of solving only small instances of the problem. Therefore, we propose two ways for reducing the execution time, namely a valid inequality that strengthen the linear relaxation and an efficient heuristic procedure that provides a starting feasible solution to the solver. A substantial gain is achieved both in terms of the linear programming relaxation bound and in terms of the time to obtain an integer optimum when we use the enhanced model in conjunction with providing to the solver the solution obtained by the proposed heuristic. © 2010 Elsevier Inc.

### SciVal Topic Prominence

Topic: [Scheduling](#) | [Preventive maintenance](#) | [maintenance scheduling](#)

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