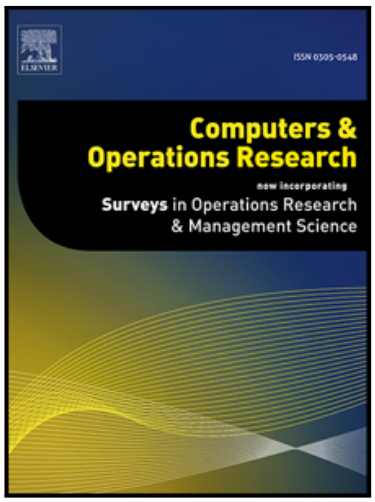

A Guided Local Search with Iterative Ejections of Bottleneck Operations for the Job Shop Scheduling Problem

Yuichi Nagata, Isao Ono

PII: S0305-0548(17)30246-0
DOI: 10.1016/j.cor.2017.09.017
Reference: CAOR 4329

To appear in: *Computers and Operations Research*

Received date: 18 June 2015
Revised date: 20 April 2017
Accepted date: 14 September 2017

Please cite this article as: Yuichi Nagata, Isao Ono, A Guided Local Search with Iterative Ejections of Bottleneck Operations for the Job Shop Scheduling Problem, *Computers and Operations Research* (2017), doi: 10.1016/j.cor.2017.09.017

Highlights

- The local search-based method that works in partial solution space is proposed for solving the job shop scheduling problem (JSP), where the current solution is represented as a feasible partial schedule.
- The best-so-far schedule is iteratively improved by solving the constraint satisfaction problem (CSP) defined as the original JSP with an additional constraint that the makespan is smaller than that of the best-so-far schedule.
- A dynamic programming-based algorithm efficiently enumerates possible local moves, creating feasible partial schedules under the constraint on the makespan.
- A tabu search algorithm is introduced as a re-optimization procedure.
- A mechanism similar to guided local search for selecting the next partial schedule from the neighborhood and random perturbation procedure improve the performance.