

Title: An Iterated Local Search Algorithm for a Real-Life Break Scheduling Problem

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Abstract:

Scheduling breaks within shift plans represents an interesting task emerging in many working areas. Solutions for these problems should satisfy constraints resulting from labour rules as well as the organizational requirements within a particular working field. Usually, due to a high number of breaks and various, conflicting constraints break scheduling problems are highly-complex and difficult to solve. We address a real-world break scheduling problem originating from industry and propose an iterated local search algorithm for solving it. We use simulated annealing and a min-conflicts-based heuristics as local search procedures and in addition we propose several perturbation mechanisms for the regarded break scheduling problem. Finally, we evaluate the iterated local search algorithm on real-world benchmark instances and draw a comparison between iterated local search and existing algorithms for the addressed break scheduling problem.