



Worst Improvement based Iterated Local Search

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Résumé en anglais To solve combinatorial optimization problems, many metaheuristics use first or best improvement hill-climbing as intensification mechanism in order to find local optima. In particular, first improvement offers a good tradeoff between computation cost and quality of reached local optima. In this paper, we investigate a worst improvement-based moving strategy, never considered in the literature. Such a strategy is able to reach good local optima despite requiring a significant additional computation cost. Here, we investigate if such a pivoting rule can be efficient when considered within metaheuristics, and especially within iterated local search (ILS). In our experiments, we compare an ILS using a first improvement pivoting rule to an ILS using an approximated version of worst improvement pivoting rule. Both methods are launched with the same number of evaluations on bit-string based fitness landscapes. Results are analyzed using some landscapes' features in order to determine if the worst improvement principle should be considered as a moving strategy in some cases.

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