



## Boosting the performance of metaheuristics for the MinLA problem using a more discriminating evaluation function

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Résumé en anglais

This paper investigates the role of evaluation function used by metaheuristics for solving combinatorial optimization problems. Evaluation function (EF) is a key component of any metaheuristic algorithm and its design directly influences the performance of such an algorithm. However, the design of more discriminating EFs is somewhat overlooked in the literature. We present in this work the first in-depth analysis of the conventional EF for the Minimum Linear Arrangement (MinLA) problem. The results from this study highlighted its potential drawbacks and led to useful insight and information which guided us to design a new more discerning EF. Its practical usefulness was assessed within three different algorithms: a parameter-free Steepest Descent, an Iterated Local Search and a Tabu Search. The analysis of the data produced by these comparisons showed that the performance of the three adopted approaches could be boosted by using the proposed more discriminating EF.

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