

An iterated local search algorithm for the multi-resource generalized assignment problem with flexible assignment cost

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We propose an iterated local search algorithm for the multi-resource generalized assignment problem (MRGAP) with flexible assignment cost. This problem generalizes the MRGAP so that the assignment cost function defined for each agent can be in any form. While this flexibility achieves a wide applicability, the computation of the assignment cost can be computationally expensive. Our algorithm features two types of oracles to evaluate this cost approximately; i.e., quick-evaluation oracle and accurate-evaluation oracle. In our computational experiments on the parallel machine scheduling and the capacitated vehicle routing, the algorithm combining two oracles performs well and is sometimes competitive with other existing algorithms tailored for the specific problem.