



Multi-neighborhood tabu search for the maximum weight clique problem

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Résumé en anglais	Given an undirected graph $G=(V,E)$ with vertex set $V=\{1,\dots,n\}$ and edge set $E\subseteq V\times V$. Let $w:V\rightarrow\mathbb{Z}^+$ be a weighting function that assigns to each vertex $i\in V$ a positive integer. The maximum weight clique problem (MWCP) is to determine a clique of maximum weight. This paper introduces a tabu search heuristic whose key features include a combined neighborhood and a dedicated tabu mechanism using a randomized restart strategy for diversification. The proposed algorithm is evaluated on a total of 136 benchmark instances from different sources (DIMACS, BHOSLIB and set packing). Computational results disclose that our new tabu search algorithm outperforms the leading algorithm for the maximum weight clique problem, and in addition rivals the performance of the best methods for the unweighted version of the problem without being specialized to exploit this problem class.
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Liens

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