

A new Branch and Bound Algorithm for Solving the Maximum Edge-Weighted Clique Problem

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Abstract: In this work, we consider the Maximum Edge-Weighted Clique Problem (MEWCP). This problem belongs to the Binary Quadratic Program, one of the most important classes of optimization problems appearing in many areas including economics, machine scheduling, solid-state physics, traffic message management, computer-aided design and location, facility location, frequency assignment, etc. By the binary property of MEWCP, Branch and Bound is suitable for finding its resolution. We speed up the Branch and Bound algorithm by combining a well-known local approach called DCA (DC Algorithms) and using an adapted branching procedure. Preliminary computational experiments on some benchmarking examples show the efficiency of the new algorithm.

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