

Tytuł publikacji:

Determination of the Lower Bounds of the Goal Function for a Single-Machine Scheduling Problem on D-Wave Quantum Annealer

Autorzy publikacji:

Wojciech Bożejko, Jarosław Pempera, Mariusz Uchroński, Mieczysław Wodecki

DOI:

10.1007/978-3-031-36030-5_16

Abstrakt:

The fundamental problem of using metaheuristics and almost all other approximation methods for difficult discrete optimization problems is the lack of knowledge regarding the quality of the obtained solution. In this paper, we propose a methodology for efficiently estimating the quality of such approaches by rapidly – and practically in constant time – generating good lower bounds on the optimal value of the objective function using a quantum machine, which can be an excellent benchmark for comparing approximate algorithms. Another natural application is to use the proposed approach in the construction of exact algorithms based on the Branch and Bound method to obtain real optimal solutions.

Opublikowano w:

Computational Science – ICCS 2023, str. 201–208

https://link.springer.com/chapter/10.1007/978-3-031-36030-5_16

