Tytuł publikacji:
An Exact Quantum Annealing-Driven Branch and Bound Algorithm for Maximizing the Total Weighted Number of on-Time Jobs on a Single Machine.

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DOI:
10.1007/978-3-031-35173-0_8

Abstrakt:
This paper considers the problem of maximizing the total weighted number of on-time jobs on a single machine. Using the problem as a case study, we present a new approach to solving *NP*-hard discrete optimization problems using D-Wave's QPU quantum processor architecture implementing quantum annealing. Although optimization on a quantum machine does not guarantee optimality, the hybrid method of construction of the partitioning and constraint algorithm proposed in this paper, using together CPU and QPU as well as Lagrange relaxation for upper bounds determination, makes it possible to determine the exact, optimal solution.

Opublikowano w:
PCC 2023: Advanced, Contemporary Control, str. 79-89
https://link.springer.com/chapter/10.1007/978-3-031-35173-0_8