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"Uma Metaheurística Genética não Convencional para uma Generalização do problema do Caixeiro Viajante"

This work proposes a new method to obtain an approximate solution to a generalisation of the Travelling Purchaser Problem (PTPP).

Although this problem has several applicationsin the areas of vehicle routing, in product scheduling, in task scheduling, and in data communication problems on multiple computers, few works are available in current literature.

The work proposed employs a non-conventional Genetic Algorithm (GA) that uses a new structure to encode feasible solutions. In relation to Gas, a literature survey is presented for this class of metaheuristic in which the historical aspects and descriptions of fundamental components are focused.

Due to the absence of problem exemples for the PTPP in the literature, the proposed algorithm was tested with exemples which were randomly generated. An empirical study to determine the best values of the algorithm's parameters is also presented.

The good quality of the obtained results indicates the outstanding potential to applying genetic metaheuristic in order to solve problems of high complexity (such as product scheduling or the NP-hard task scheduling problem).