

THE PROBLEM OF THE COMPARTMENTALIZED KNAPSACK: A PROPOSAL OF THREE NEW HEURISTICS

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Abstract. The problem of the compartmentalized knapsack is classified as NP-Hard and has several models, both for linear and non-linear cases. The development of new heuristics for a resolution in a runtime useful for applications becomes necessary. In this work, three new heuristics are proposed, using the particularity of the linear model proposed by Inarejos (2017), which are considered only p_k compartments available for each class, being p_kX , $p_kGREEDY$ and $p_kMTComp$, the latter is based on the algorithm of Martello and Totti (1991). The heuristic $p_kMTComp$ presents solutions close to optimum value, being a promising method in solving the problem of the compartmentalized knapsack, when compared with other heuristics recognized in the literature.

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