

SOLUTION TO DYNAMIC FACILITY LAYOUT PROBLEM (DFLP) FOR INSTALLATIONS OF EQUAL AREAS THROUGH THE HYBRID TABU SEARCH - GENETIC ALGORITHM

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ABSTRACT

The importance of metaheuristics appears when the complexity of the dynamic facility layout problem increases (notable number of periods and/or departments) since exact methods fail to find reasonable solutions. The main contribution of this research is to solve the dynamic facility layout problem (DFLP) in departments of equal area, through a hybrid method (HTG), which combines Tabu Search Method (TS) and Genetic algorithm (GA), the first is responsible for finding effective local solutions for building the "chains" of genetic algorithms to seek the global solution of the problem. The distances and flows between departments are known as well as transportation cost. The results are compare with the ones of different approach literature. A systematic review of the literature about the time and the basic structure of DFLP allows developing and running the proposed hybrid method. Finally, the numerical results for a sample of instances show that our approach is promising.

KEYWORDS. Dynamic facility layout problem. Tabu Search. Genetic algorithm.