ONE OF THE APPROACHES TO THE SOLUTION TO THE CLASS OF PROBLEMS FOR THE GEOMETRIC OBJECTS PURPOSE

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Nowadays it is necessary to create new models and methods of discrete optimization, efficient methods for solving optimization problems which arise during solving theoretical and applied problems in the economic, industrial, technological processes of various industries. Many geometric design combinatorial problems associate with the optimization of wide class of functions on combinatorial sets of complex structure. The basic idea of combinatorial methods is in transition from full exhaustion to abbreviate finite set of solutions. Impossibility of exact solution of combinatorial optimization problems which have large dimension and specific constraints leads to the development of approximate methods, but these methods have significant disadvantages such as obtained local extremum may not coincide with the global extremum, it is impossible to estimate the difference between obtained local and global extremum priori. All above-stated allows coming to the conclusion that the development of new approaches and methods for combinatorial optimization is topical problem. Separate class of geometric design discrete tasks is considered in the research. Formal statement of the problem of geometric objects purpose as optimization problem in Euclidean combinatorial sets is presented. One of approaches for solving of this class of problems on the base of immersion of combinatorial sets in arithmetic Euclidean space is proposed. The results have practical importance for solving a wide range of geometric design problems (placement, packaging, covering).

Keywords: discrete tasks, optimization, combinatorial sets, Euclidean space.