
Ways to reduce computational complexity of the algorithms follow from the principle of creating solutions

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The article describes one of the classes ways to reduce the computational complexity of combinatorial optimization algorithms on graphs and sets. Consideration of methods based on the use of the principle of step-forming solutions. A classification group of these methods is given. Examples are considered to fulfillment of optimizing transformations in the iterations algorithm to improve the hypergraph cutting and sequential algorithm of its initial cut. The processes and formulas for determining the values of criteria and the vertex set of candidate these algorithms are discussed. We obtained estimates of the computational complexity of the above action for the cases with and without the use of methods to reduce the computational complexity. The evaluation of the effectiveness of these methods is performed. A possibility of formalizing consideration of optimizing transformations is determined.

Keywords: *algorithm, computational complexity, graph, set, optimizing transformations, step by step the principle of forming solutions, recurrence formulas.*

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