

COMPARATIVE ANALYSIS OF CONTINUOUS FUNCTIONAL
REPRESENTATIONS OF SPECIAL CLASSES OF COMBINATORIAL
CONFIGURATIONS IN DISCRETE OPTIMIZATION PROBLEMS

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The purpose of the work to create software for solving discrete optimization problems in algebraic statement using nonlinear programming methods. To make a comparative analysis and to create recommendations regarding effective using of this statement.

Object of the study a class of nonlinear optimization problems on sets of permutations and Boolean configurations immersed in arithmetic Euclidean space, for which a series of analytic descriptions was previously constructed in the f-representation theory of combinatorial sets.

The main content of the work is experimental researching of the tools for solving discrete problems using methods that use the theory of f-representations, and comparative analysing of them.

Recommendations regarding effective using of algebraic formulas for some combinatorial optimization problems were worked out and the comparative analysis was made .

The work is interesting both for educational purposes for demonstration the possibilities of using classical optimization algorithms for solving discrete problems, as well as for scientific ones, since it allows to make recommendations for the application of one or another continuous model of a discrete set depending on the class of tasks and their dimensionality.

References

1. Himmelblau, D. Applied nonlinear programming [Text] / D. Himmelblau. – M.: Mir, 1975. – 525 p.

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