
THE PROBLEM OF GEOMETRIC COVERING

N.V. Koshlakov

nikitakoshlakov@ya.ru
SPIN-код: 4047-3905

Bauman Moscow State Technical University, Moscow, Russian Federation

Abstract

The article considers the problem of geometric covering with the smallest area of overlaps and holes of the objects. It is a particular case of the optimal design problem and it belongs to the “cutting and wrapping” class of problems. The complexity of the optimal design problems considered is conditioned by their belonging to the class of nondeterministic polynomial time hard problems, which does not allow solving them by precise methods and requires constructing approximate optimization methods and algorithms. It is efficient to use metaheuristic methods. The article examines “the first appropriate”, probabilistic, extremal, genetic and ant colony optimization algorithms. Their application will allow increasing the efficiency of the systems and reducing the expenditures for their designing and realization.

Keywords

The problem of optimizing the geometric covering, nondeterministic polynomial time hard problem, metaheuristic algorithms

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Koshlakov N.V. — student, Department of Computer Software and Information Technologies, Bauman Moscow State Technical University, Moscow, Russian Federation.

Scientific advisor — Filippov M.V., Cand. Sc. (Eng.), Assoc. Professor, Department of Computer Software and Information Technologies, Bauman Moscow State Technical University, Moscow, Russian Federation.
