The use of the stability radius of optimization problems to hide and verify correctness of information

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Possibilities of application of the theory of stability of optimizing tasks for concealment of information and check of a correctness of received information by its transfer on channels are considered. The relationship between the study of the stability of solutions of discrete optimization problems and methods of solving inverse problems is shown. (In the inverse problem to build a task based on the specified solution or set of solutions.) The author provides a general description of the two methods, as well as a brief description of some of the results of the theory of stability on the basis of which the described methods can be implemented. The first approach is based on the methods of the solution of inverse problems and some results of the theory of stability. The second approach focuses on the possibilities of recovery of distorted information based on knowledge of radius of stability of some discrete optimization problem.

Keywords*: discrete optimization problems, theory of stability, radius of stability, information security.*

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