

OPTIMIZING RESOURCE ALLOCATION BASED ON THE USE OF ANTAGONISTIC GAMES

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In the article the game-theoretic method of decision-making on the optimal allocation of resources, based on the use of antagonistic games. Particular attention is paid to the accounting for incomplete information, uncertainty, conflict and economic risk, as well as on the use antagonistic games with incomplete information, the combined application of the theory of antagonistic games with the theory of linear optimization problems with inexact data.

Statistical game proposed identified with the corresponding antagonistic game. This antagonistic game may not have a model of decision-making. However, this antagonistic game characterizes this process.

The article introduces the concept of neoclassical antagonistic game. The neoclassical antagonistic game is the final game of a two-person with zero-sum, which is set partially known payment matrix. The use of neoclassical antagonistic game for decision-making can take into account the uncertainty, incomplete information, conflict and economic risk.

A method of solving the neoclassical antagonistic game which takes place depends on the information situation. The simplest way to solve the neoclassical antagonistic game is to bring this game to the classic antagonistic game, that is, to the final game of the two-person with zero-sum, which is set entirely certain of the payment matrix. The solution of the classical antagonistic game is the optimal solution of the original neoclassical antagonistic game. To estimate the values of the unknown elements of the payoff matrix can be used interpolation methods, extrapolation, regression analysis.

The decision neoclassical antagonistic game may include an award of several classic antagonistic games. For the final selection of the optimal solutions of the original neoclassical antagonistic game, you can apply the methods of operations research, pattern recognition, and theory of expected utility. Also, to use the information and other economic character.

The economic interpretation of optimal solutions antagonistic game depends on the economic situation of the content of the original decision.

Keywords: decision-making, optimal allocation of resources, antagonistic game, incomplete information, uncertainty, conflict, economic risk.