RESEARCH TASK DISTRIBUTION OF THE VEHICLE PARK ON THE ROUTE NETWORK IN RISK CONDITIONS.

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At the present stage, urban passenger transport rapidly evolving, changing and emerging new traffic flows, increasing their complexity. This situation contributes to the problem of dissatisfaction of the population’s demand for urban passenger transport services. Thus, the distribution task in conditions of risk is relevant at this point in time.

The paper analyzes the problem and formulates the formulation of the research problem. A review of approaches and methods for solving the problem. A deterministic model of the distribution problem is formed and a stochastic model is developed on its basis.

The objective function displays the necessary maximize profits from operations. Restrictions of the first type require the satisfaction, if possible, of the full demand for transportation. Restrictions of the second type require to use for transportation the existing amount of transport of the park.

The stochastic model is presented in the M-setting. In the objective function, the random variables are replaced by their mathematical expectations. The first type of constraint is performed with a given probability, not less than α_i The second limitation remain sun changed.

Stochastic model transformed into a deterministic equivalent, which is the task with which it non-linear programming. To solve the problem, the method of penalty functions was chosen, namely the method of an interior point. To solve problems and unconditional optimization, the Hook-Jeeves method is used.

Proved any numerical studies. The purpose of the experiment is to study the effect of the value of the probability coefficient of the first type of constraints on the solution of the problem.

It is found that the larger the value of the coefficient probability performance constraints, the greater value of the objective function (gains).

It can also be concluded that in order to optimally distribute the vehicle fleet along the route network, it is necessary to have additional resources with a certain probability in order to fully satisfy the demand for transportation. Otherwise, the profit will be less.

Thus, when solving a distribution task, it is necessary to choose the value of the probability of fulfilling the restrictions as close as possible to one, in order to satisfy the demand for transportation and to get the maximum profit.