FORMALIZATION OF THE INTERVAL VALUES RANKING IN THE NETWORK PLANNING PROBLEM

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The cases, when the temporal characteristics of the works are given in fuzzy or interval form, are typical for the network planning problems [1]. This raises the need for intervals ranking to determine the critical path.

Classical approaches to the problem solution are described, for example, in [2, 3] and characterized by the fact that in the case of intersecting intervals, they lead to ambiguity. This causes the appearance of modes in the decision support systems (DSS) work that require a user to choose the option of formalizing such special cases. In fact, we are talking about an analyst's preferences regarding the "gray" or underspecified solutions.

Considering that the apparatus of the classical interval analysis objectively cannot exclude the appearance of the above modes in the DSS work, an analyst has three fundamental possibilities:

1) to allow the presence of "gray" modes, taking into account the increase in the number of quasi-optimal solutions;

2) to take actions of the primary data clarification, i.e. to ensure the narrowing of the permissible intervals of the initial data;

3) to use one of the methods of the cases formalization (for example, [4]) to ensure the unambiguity of the ranking interval alternatives result. Note, that the choice of any of these paths requires an analyst to consciously transform the objective uncertainty of the data, as well as a DSS to ensure the interactivity of the modes and the visibility of the simulation results.

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