

Documents

Korzhova, V.N., Saleh, M.F., Ivanov, V.V.

Mathematical models of information systems developing

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Abstract

The general mathematical theory of evolutionary systems development is applied to information system. It is shown that the equations of the respective basic two-subsystem (A. Subsystem of perfection of work places; B. Subsystem of production of external products) and three-subsystem (A., B., and C. Subsystem of new more effective technology) mathematical models have unique solutions under rather general natural restrictions. More complicated mathematical models are also introduced. Numerical methods for the solutions of the equations are considered. It is shown that the optimization problem maximization of the external products by distribution of given resources with regard to the models also has a unique solution. The optimal distribution for a sufficiently long period of time has to be maximal for the most part of that period for the subsystem C., then for the subsystem A, and at the end of that period for the subsystem B. Overall, description of advantages of considered models are given in the conclusion.

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