"Development of optimal control methods by flows in networks with using the theory of differential games"

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Results.

Research objective is development of new methods for control of dynamic and static flows in networks which based on application of differential games theory optimization methods. Investigation object is models and methods for distribution optimization of dynamic and static flows in networks with application of differential games theory. Effective methods of constraint problem solving for a wide linear games classes have been constructed. The notion of invariant sets for linear differential and difference games of constraint is introduced, the maximum and the minimum invariant sets have been constructed. Flows investigation in networks with generalised Kirchhoff's law is made. Stationary and dynamical flows are considered. New effective methods for research of optimal flows on the basis of graph structure change are developed.