

ABSTRACT

The object of research - a complex technical system which is functioning in real time terms.

Subject of research - principles, models, methods, algorithms of functioning for complex technical systems in conditions of uncertainty and multifactorial risks.

The aim – formalization of resource of permissible risk in the case of operation methodology of complex technical systems with destabilizing risk factors.

Research method – system methodology, theory of risk, autoregression, kNN method, restoration of functional dependencies.

Urgency is based on providing a guaranteed functioning of complex systems which is necessary to detect the abnormal situations that can lead to major financial losses and casualties.

The results - the analysis of theory, confirmed the adequacy of the algorithm for real problems, received adequate tools for forecasting and analyzing of closed water recycling system in this subject area.

Future assumptions about the object of research - generalization the theory of operation for a wide class of practical problems, use of algorithm for complex technical systems with different natures.