ABSTRACT OF SCIENTIFIC SPECIALTY

2.3.1. SYSTEM ANALYSIS, MANAGEMENT AND PROCESSING INFORMATION

Provides for the study of the problems of development and application of methods of system analysis of complex applied research objects; information processing; modeling, optimization, improvement of management and decision-making, in order to increase the efficiency of the functioning of research objects. The principles of human impact on the objects of research, human management of objects of research using modern methods of information processing are also considered.

Includes the following areas of research

Theoretical foundations and methods of system analysis, optimization, management, decision making, information processing and artificial intelligence.

Formalization and problem setting of system analysis, optimization, management, decision making, information processing and artificial intelligence.

Development of criteria and models for describing and evaluating the effectiveness of solving problems of system analysis, optimization, management, decision making, information processing and artificial intelligence.

Development of methods and algorithms for solving problems of system analysis, optimization, control, decision making, information processing and artificial intelligence.

Development of special mathematical and algorithmic support for systems of analysis, optimization, control, decision making, information processing and artificial intelligence.

Methods for identifying control systems based on retrospective, current and expert information.

Methods and algorithms for structural-parametric synthesis and identification of complex systems.

Set-theoretic and information-theoretic analysis of complex systems.

Development of problem-oriented control systems, decision-making and optimization of technical objects.

Methods and algorithms for intellectual support in making managerial decisions in technical systems.

Methods and algorithms for forecasting and evaluating the efficiency, quality, and reliability of complex control systems and their elements.

Visualization, transformation and analysis of information based on computer methods of information processing.

Methods for obtaining, analyzing and processing expert information.

Development of fundamentally new methods of analysis and synthesis of elements of control systems in order to improve their technical characteristics.

Theoretical analysis and experimental study of the functioning of elements of control systems in normal and special conditions in order to improve the technical, economic and operational characteristics.