

Complex open systems exposed to various external and internal factors are considered. The possibility of applying the entropy approaches to the development of the mathematical models describing the generalized state of the complex open system is estimated. Based on the used notion of the functional entropy, a mathematical model for the process of evolution of the training system is proposed. The possibility of applying the entropy approaches to the development of the mathematical models describing the generalized state of the complex open system and estimating the degree of the complex system flexibility needed for its safe operation is demonstrated. A generalized parameter for estimating a balance of the factors resulting in an increase or a decrease in the functional entropy of the complex open system is proposed.

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