

CONCEPTUAL POSITIONS STATISTICAL MODELING OF PRODUCTION PROCESSES. BUILDING PDE-MODELS.

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In work formulated the concept of statistical modeling of technological processes of production and technical systems. In conformity with this concept, the state macroparameters of technological process determined by the state microparameters large number of objects of labour, distributed in a interoperational reserves on technological route. It is shown that at sufficiently large number of objects of labour located in interoperational reserves along technological route, appear special type laws characterizing state macroparameters of the technological process. The characters of these laws do not depend on the behaviour microparameters which determine the state an individual item of work. Although the with increasing amounts the objects of labor unimaginable increases complexity and intricacy of relations which determine the state macroparameters of the technological process, however, at that appear the peculiar laws which on no account can not be reduced to the laws of behaviour of an individual element of a macroscopic system.

Communication micro and macro-level description of the technological process carried out through the kinetic equation characterizing the evolution of the distribution function of the objects of labour on states. Macroscopic characteristics of the technological process are presented with moments the distribution function of the objects of labour on states, determined through terms of model representations of stochastic nature of the impact of technological equipment on the object of labour and collective interaction the objects of labour between themselves. The statistical distribution of the objects of labour by microstates found without solving the dynamic system of equations describing the state changes of technological parameters of the subject. This allowed to consider the problems of management technological process in which small stability initial data complicates use method of the simulation modelling.