

ON THE METHODS OF THE STATISTICAL THEORY OF CONTROL SYSTEM OF PRODUCTION LINES

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The analysis of modern methods of production and control of production flow lines are made. The necessity for the application of the statistical approach is justified.

The conceptual basics of statistical theory of control systems by production flow lines are designed [1]. The regularities of changes in the properties of the labor objects is explored. Mechanism of action of process equipment to object of labor and mechanism interaction of objects of labor between themselves is explored. Method of two-level simulation of the production flow line, based on the kinetic equation of the technological process is designed [2]. The two-level simulation method takes into consideration objective technological description of the production flow line at the micro level and streaming description at the macro level. A closed two-level models of PDE-production flow lines are built. Similarity criteria of processes are obtained. The two-level multiple moment models of optimal control and optimal stabilization parameters of the production flow line are designed. Control of the parameters determined from the conditions that ensure the sustainable operation of the production flow line. This reduces the costs of technological resources for building control actions by deviations of parameters and improve the stability of output lines. The method for constructing of system dynamics equations for a network of material flows is improved, and choice of equations is justified. The law of increasing entropy production process is explained. The mechanism of irreversible phenomena occurring process is presented. The developed models for control parameters of production lines are universal. They can be used on domestic and foreign enterprises in the manufacturing process of products in-line method.

Literature:

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