

ABOUT THE CHOICE OF PHASE-SPACE COORDINATES FOR DESCRIPTION OF THE PRODUCTION SYSTEMS WITH IN-LINE TYPE OF PRODUCTION

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A key issue in the construction of the PDE-model production lines is the choice of the coordinate system. A common approach is to use as a variable that defines the place of processing of work subject to the process flow, value S (\$) transferred technology resources on the subject of work [1], $S \in [0, S_d]$ (S_d (\$) - the production cost of manufacturing), the effective time of processing the object of labor τ_m (hour),

$\tau_m \in [0, \tau_M]$ ($\tau_M = \sum_{m=1}^M \Delta\tau_m$ (hour) - general effective the time of object of labor [1],

$\Delta\tau_m$ - average time labor object processing on m manufacturing operation) or the degree of work in progress product x [1], $x \in [0, 1]$. For the object of labor, past

treatment for m operation, you can record $x = \frac{\tau_m}{\tau_M} = \left(\frac{\sum_{k=1}^m \Delta\tau_k}{\sum_{k=1}^M \Delta\tau_k} \right)$. For each

processing time $\tau_m = \sum_{k=1}^m \Delta\tau_k$ one correspondence with the value of resources

$S_m = S(\tau_m)$, migrated for object of labor, and the total time $S_d = S(\tau_M)$. Thus, the degree of incompleteness of making an article x It can be determined through the time of processing τ or the value of costs incurred $S = S(\tau)$ for object of labor. It is advisable to be the generalized technological resources for modeling industrial of production line use dimensionless variable $x = \frac{S_m}{S_M}$, determining the position of the

object of labor in the process flow [2], $x \in [0, 1]$. If you enter the density function of objects of labor $\rho(t, x)$ able x in the moment of time t , the total number of work items that are in various stages of readiness is the value [3:

$$W(t) = \int_0^1 \rho(t, x) dx, \quad x \in [0, 1]$$

Literature:

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