

THE PROBLEM OF OPTIMAL LOADING OF THE LINE OF TECHNOLOGICAL EQUIPMENT

D.S. Rogalina, D. O. Sahaidachnyi
National Technical University
“Kharkiv Polytechnic Institute”, Kharkiv

In this report, a PDE-model of the production line is built, the flow parameters of which depend on the load factor of the process equipment for each operation. For the description of a distributed dynamic system, the PDE model of the production line was used. At the same time, the single-shift mode of operation of a production enterprise is considered as a basic mode of operation. Fig.1 shows scheme of a single-node flow conveyor line.

To ensure the smooth operation of the production line, it is necessary to synchronize the rate of processing of objects of labor in individual operations within the time interval between the beginning of the t_q -th and the beginning of the t_{q+1} -th work shift.

One of the common methods of synchronization of the production line within the interval of the 1st, 2nd and 3rd shifts is the condition determining the equality of the daily rates of product processing at adjacent technological operations for different values of the time of the production cycle.

The control of flow parameters carried out as a result of the use of additional equipment at the moment of time between the end of the q-th shift and the beginning of the (q+1)-th shift is defined via the Dirac delta function.

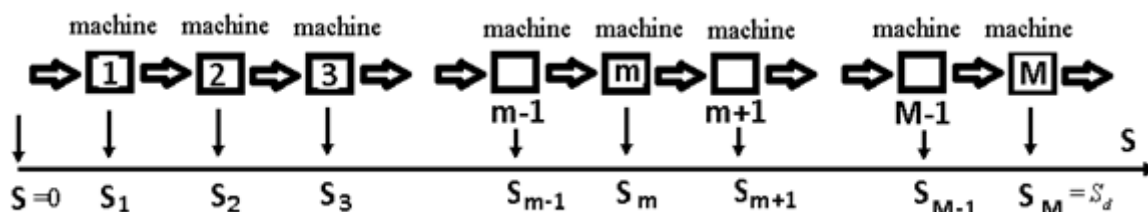


Fig.1 - scheme of a single-node flow conveyor line

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