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STRUCTURE OF THE COMPUTER PROGRAM OF REALIZATION ALGORITHM IMPLEMENTATION

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Using a recursive approach to determine the thread tension before the working zone [1-5], in which the original thread tension in the current zone will be the input for the next we present a system of equations in the form

$$P_n = P_0 \prod \prod_{i=0}^{n} f_i(P_i).$$

In the block diagram of the algorithm, block 1 corresponds to the beginning of the algorithm [4-8]. In block 2 the values are set: kivuz - the number of nodes; vrux - the speed of the thread; dlinz - the length of the refueling line. In block 3, the time of movement of the thread after the descent from the spool to the moment of entry into the working area is calculated.

Block 4 includes three blocks of procedures: procedure.TForm2.N2Click; procedure.TForm2.N3Click; procedure. TForm2. N4Click.

Procedure procedure.TForm2.N3Click provides raw material diameter selection. The program provides the ability to use three options: the diameter of the thread or yarn is constant (procedure procedure.TForm2.N31Click); the diameter changes according to the periodic law (procedure procedure.TForm2.N12Click); change of diameter of raw materials occurs according to the law which is offered by the user (procedure procedure.TForm2.N14Click). To do this, the program uses a modified translator based on inverse Polish records [1].

In block 5, the first element of the thread feed system of a particular process machine is selected. Block 6 is used to select the material of the guide surface. To do this, the procedure procedure.TForm2.N43Click is implemented when selecting a steel or ceramic guide. Depending on the choice of material from the base, the appropriate coefficients of friction are used [7,8].

Block 7 of procedures includes three blocks of procedures: procedure procedure.TForm2.N5Click, procedure procedure.TForm2.N6Click, procedure procedure.TForm2.N7Click.

In block 8, the transition to the next element of the feed system. Block 9 is used to check the element number of the feed system with a given number of elements of the feed system of the thread of the process machine.

Figure 1 shows the results of calculating the tension of the thread in zones for 4 elements of the thread feed system of the process machine. The graphical diagrams show the relative tension in the zones, which allows you to assess the intensity of the process of interaction of the thread with the elements of the feed system and make appropriate adjustments to the parameters of their refueling.

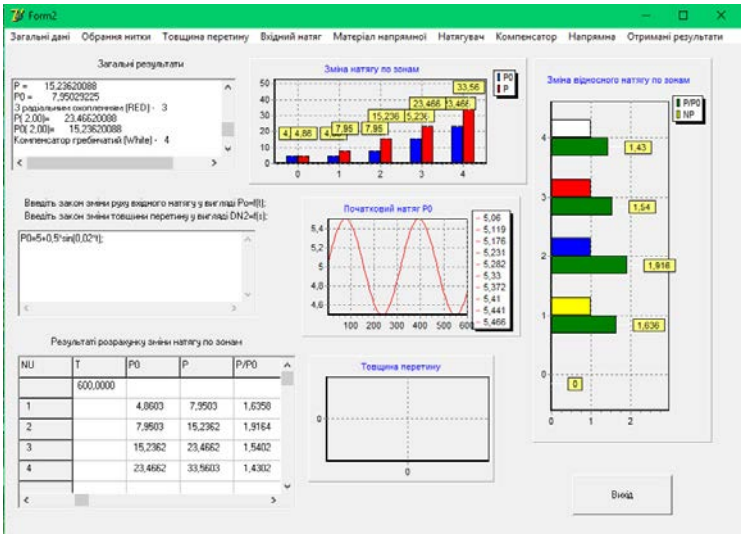

Figure 1 - The results of the calculation of the thread tension by zones for 4 elements of the thread feed system of the process machine

List of the used sources

1. Shcherban V.Yu. Computer systems design: software and algorithmic components / VY Shcherban, OZ Kolisko, GV Melnyk, MI Sholudko, VY Kalashnik. - K.: Education of Ukraine, 2019. - 902 p.

2. Scherban V.Y., Sholudko M.I., Kolisko O.Z., Kalashnik V.Y. Optimization of the process of interaction of a thread with guides, taking into account the anisotropy of frictional properties. Herald of Khmelnytskyi National University.2015.225(3).pp.30-33.

3. Scherban. V.Y., Kalashnik V.Y., Kolisko O.Z., Sholudko M.I. Investigation of the influence of the thread material and the anisotropy of friction on its tension and the shape of the axisю. Herald of Khmelnytskyi National University.2015.223(2).pp.25-29/

4. Mathematical Models in CAD. Selected sections and examples of application/V. Yu. Scherban, SM Krasnitsky, VG Rezanov.-K.:KNUTD.2011.220p.

5. Algorithmic, software and mathematical components of CAD in the fashion industry/V. Yu. Scherban, OZ Kolisko, MI Sholudko, V. Yu. Kalashnik.-K.: Education of Ukraine, 2017. - 745 p.

6. Scherban V.Y., Murza N.I., Kirichenko A.N., Sholudko M.I. Overall performance of compensators of the filament of knitted cars. Herald of Khmelnytskyi National University.2017. 245(1).pp.83-86.

7. Equalizations of dynamics of filament interactive with surface/V. Scherban, G. Melnik, A.Kirichenko, O. Kolisko, M. Sheludko//Intellectual Archive, Toronto: Shiny World Corp., Richmond Hill, Ontario, Canada.6(1).pp.22-26.

8. Scherban V.Y., Murza N.I., Kirichenko A.N., Sholudko M.I. Comparativec analysis of work of natyazhiteley of filament of textile machines. Herald of Khmelnytskyi National University.2016.243(6).pp.18-21.