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SUMMAIES

DYNAMIC ANALYSIS OF RRRRT TYPE SPHERICAL FIVE-BAR HINGED MECHANISM WITH TWO DEGREES OF FREEDOM. **A. Talakvadze, N. Davitashvili.** "Problems of Mechanics". Tbilisi, 2019, № 3(76), pp. 7-16, (Engl.).

Is stated the dynamic analysis of RRRRT type spherical five-bar hinged mechanism with two degrees of freedom, for carrying out of that on the first stage are give the kinematic parameters of mechanism. Further are determined: kinetic energy, reduced moment and reduced force of mechanism. Are obtained non-linear second order differential equation of motion that determines the movements, velocities and accelerations of input links of mechanism. The obtained results of ideal and real mechanisms are presented as diagrams. 9 ill. Bibl. 13. Engl.; sum. in Russian.

DETERMINATION OF PLANT MATERIAL CRITICAL SPEED OF CUTTING. **R. Makharoblidze, Z. Makharoblidze, V. Margvelashvili.** "Problems of Mechanics". Tbilisi, 2019, № 3(76), pp. 17-20, (Engl.).

For execution of cultural-technical works on the agricultural plots was developed the cutting machine of plant material. The method of calculation of critical speed and cutting force of rotational type working member is developed. Is considered the practical example, are obtained specific values of technological parameters that gives the possibility to theoretically calculate the basic technological parameters and make the optimal selection of towing vehicle. 1 ill. Bibl. 2. Engl.; sum. in Russian.

THE FORMATION OF THE SURFACE LAYER OF COMPONENTS INFLUENCED BY FACTORS OF INSTABILITY IN THE MILLING PROCESS. **M. Iremadze, A. Khvadagiani, G. Tutberidze.** "Problems of Mechanics". Tbilisi, 2019, № 3(76), pp. 21-30, (Engl.).

The article considers the possibility of forming the surface layer of components influenced by factors of instability in the milling process. The properties of the surface layer in terms of size, nature of change and stability were studied in this work when face milling of some alloy steels (40XHM, 35GCA, 1X18H9T) and gray cast irons. 10 ill. Bibl. 8. Engl.; sum. in Russian.

ANALYSIS OF KINEMATIC SCHEMES OF RADIAL-FORGING MACHINES AND THE SHOICE OF RATIONAL SCHEME. **S. Mebonia, R. Kavtaradze, T. Natriashvili, A. Shermazanashvili.** "Problems of Mechanics". Tbilisi, 2019, № 3(76), pp. 31-38, (Engl.).

Kinematic schemes of different types of rotary and radial forging machines are considered, their positive sides and disadvantages are revealed. Classification of rotary and radial forging machines is given. A new design of radial forging machine eccentric-rocker type, which is reliable and provides a smooth change in the distance between the strikers when forging stepped shafts and axes is proposed. 12 ill. Bibl. 8. Engl.; sum. in Russian.

TO THE STUDY OF DYNAMICS OF ELECTROMECHANICAL DRIVE SYSTEMS WITH ELASTIC CONSTRAINTS AND BACKLASH JOINTS IN THE MECHANICAL PART. **T. Mchedlishvili, Z. Surmava, G. Goletiani, V. Chitaishvili, T. Kipiani, L. Kobakhidze.** "Problems of Mechanics". Tbilisi. 2019, № 3(76), pp. 39-44, (Engl.).

Dynamic studies of modern high-speed electromechanical follow-up drives are coupled with taking into account of elastic properties and backlash elements in mechanical transmission devices that in turn, requires further improvement of the methods and methodologies of their dynamic researches. Due the latter, tasks related to optimization structural-parametric synthesis of the systems under study are of particular importance. In the presented paper are considered issues related to the revealing of original laws and methodological approaches for carrying out of dynamic researches. 1 ill. Bibl. 7. Engl.: sum. In Russian.

MODERNIZED MICROPROCESSOR DISPATCH CENTRALIZATION. M. Chaladze, L. Lomsadze, M. Grigorashvili. "Problems of Mechanics". Tbilisi, 2019, № 3(76), pp. 45-50, (Engl.).

Analysis of the dispatch centralization (DCD) systems in Georgia and their operational experience indicate that the relay system has been in use and operating for more than 60 years, resulting in a significant increase in the number of leaks, the depreciation of equipment, and the deterioration of its contacts. At present, in many industrial enterprises and in rail transport, electrical centralization systems are changing to microprocessor centralization. The DTC microprocessor system will provide additional information to the transmission dispatcher and other rail transport users about the transmission status and manifestations of system elements malfunctions. The microprocessor system facilitates the exchange of information between other computing and management systems. The principles, advantages and disadvantages of building a modernized dispatch centralization are discussed. Structural installation scheme for the simplest site is given, in particular the developed station "Vakhtang Gorgasali" in the form of TV control and TV alarm. Extensive conclusions have been drawn by comparing dispatch centralization with old and new systems. 4 ill. Bibl. 5. Engl.; sum. in Russian.

INTERACTION OF TWO ELONGATED CIRCULAR CIRCUITS WITH RECTANGULAR CUTS ON AN INFINITE PLATE. V. Sulashvili. Tbilisi, 2019, № 3(76), pp. 51-56, (Engl.).

The numerical solution of the system of finite spatial equations with wounds is given by the mechanical quadratic method. Since the equation on the outline of the circuit is a singular integral equation of the second genus, we proceed to $2n$ linear algebraic equations for $3n$ unknown values. The method for calculating spin-like spherical structures with linear and nonlinear deformation conditions allows one to determine stresses and moments with equal accuracy both in the continental region and at the edges of the wound and near the tip. 1 ill. Bibl. 8. Engl.; sum. in Russian.