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SUMMARIES

ANALYSIS OF KINEMATIC AND DYNAMIC PRECISION OF PLANAR RRRRT TYPE FIVE-BAR HINGED MECHANISM WITH TWO DEGREES OF FREEDOM WITH CLEARANCE IN THE CONNECTION OF TWO COUPLERS. **N. Davitashvili, A. Sharvashidze.** "Problems of Mechanics". Tbilisi, 2018, № 3(72), pp. 5-15, (Engl.).

Is stated the research of kinematic and dynamic precision of planar RRRRT type five-bar hinged mechanism with two degrees of freedom with one clearance in the connection of two couplers that are applied in the special engineering for improvement of precision of reproduction of required geometry of surface of antenna mirror. The obtained results contribute to elimination of error and improvement of precision of reproduction of given law of motion. 4 ill. Bibl. 18. Engl.; sum. in Russian.

MECHANICAL MODELING AND SIMULATION OF A PORTABLE SYSTEM FOR MOTION INDUCED EDDY CURRENT TESTING. **K. Zimmermann, E. Gerlach, I. Zeidis, J. M. Otterbach, H. Töpfer, H. Brauer, M. Ziolkowski, R. Schmidt.** Tbilisi, 2018, № 3 (72), pp. 17-28, (Engl.).

The paper deals with the mechanical modeling of a sensor concept in the framework of Motion Induced Eddy Current Testing (MIECT). The system consists of a magnet arrangement with two axially magnetized cylinder magnets, which are fixed to a shaft, driven by a motor with a constant angular velocity. A pick-up coil, assembled around the magnet arrangement and fixed to the sensors framework, measures the magnetic flux varying in time. The mechanical behavior of this experimental setup is analyzed using analytical and numerical methods. The main conclusions concerning the systems behavior are made with the asymptotic method. The investigations based on methods of Bogoliubov & Mitropolski show, that the main contribution to the solution is given by the first fundamental harmonic. The exact equation of motion is integrated numerically. The results of the theoretic investigations are compared with experimental data. 4 ill. Bibl. 11. Engl.; sum. in Russian.

THE STRESS-STRAIN STATE OF A COUNTOUR TOOL DURING THE CUTTING PROCESS. **N.P. Sakhanberidze.** "Problems of Mechanics". Tbilisi, 2018, № 3 (72), pp. 29-33, (Engl.).

The paper dwells on the differential equations of a two-dimensional non-stationary thermoelasticity problem of calculating a contour tool machining the external cylindrical surfaces and formulates the initial and boundary conditions. 1 ill. Bibl. 4. Engl.; sum. in Russian.

OPERATIONAL POWER INPUTS AT AGGREGATE OPERATION ON SLOPE. **R. Makharoblidze, Z. Makharoblidze.** "Problems of Mechanics". Tbilisi, 2018, № 3(72), pp. 35-40, (Engl.).

The operational energy inputs of machine-tractor aggregates stipulate material costs. It is known that operational characteristics of the aggregate in the plains and mountains conditions significantly differ from each other. Power inputs in mountain conditions are increased that is caused by skidding of the unit, slip on the slope, increased fuel consumption and deterioration of other factors. In the work is stated method of calculation of operational energy inputs of agricultural aggregates at operation on the slope, taking into account the characteristic for operation on the slope factors. Bibl. 4. Engl.; sum. in Russian.

METHODOLOGY FOR CALCULATING STATISTICAL CHARACTERISTICS OF PARAMETERS OF THE MOBILE VEHICLE SUSPENSION. **Ts. Beradze.** "Problems of Mechanics". Tbilisi. 2018, № 3(72), pp. 41-49, (Engl.).

Using the calculation methods of statistical characteristics determining the running smoothness of mobile vehicle, the paper dwells on the calculation of the equivalent coefficient of the linearized resistance of shock absorber with non-symmetrical characteristics.

As a result of calculation, it has been established that shows that shock absorbers with non-linear characteristics, dry friction in the springs and the specific composition of the road's micro-profile have a significant impact on the low-frequency movement of vehicle on the real road.

There is proposed theoretical method, which allows us for calculating the elastic-damping characteristics of the suspension of mobile vehicle, the endurance life and durability of the spring in the design process. 5 ill. Bibl. 4. Engl.: sum. In Russian.

TO MODELING OF DYNAMICS OF DRIVE MECHANICAL SYSTEMS WITH ELASTIC CONSTRAINTS AND BACKLASH JOINTS IN INTERMASS CONSTRAINTS. **T. Mchedlishvili, Z. Surmava, A. Tavadze, Z. Natsvlishvili, G. Parunashvili.** "Problems of Mechanics". Tbilisi. 2018, № 3(72), pp. 51-56, (Engl.).

One of the most urgent tasks related to improving the efficiency of dynamic studies of modern machines drive systems represents the task of developing such dynamic models of mechanical systems of drives (mechanical transmissions) that together with the consideration of specific features, are effectively used for subsequent studies of dynamic processes in purely mechanical as well as in electro- and hydromechanical drives. In this paper, is proposed an original methodology for constructing of dynamic models, taking into account the elasticities of the links as well as the nonlinearities determined by the gaps and frictional forces. 1 ill. Bibl. 11. Engl.: sum. In Russian.

DIAGNOSIS OF THE PARAMETERS OF THE MOBILE VEHICLE SUSPENSION USING SIMULATION MODELING. **Ts. Beradze.** "Problems of Mechanics". Tbilisi. 2018, № 3(72), pp. 57-65, (Engl.).

For the purpose of simulating the movement of mobile vehicle, the paper dwells on the method of simulation modeling, considering road conditions and the vibrations dynamics.

Based on the imitation modeling, there is proposed the methodology for the selection and diagnosis of the rational values of the parameters of the suspension of mobile vehicle, when operating in various road conditions.

For the purpose of reducing significant inertial forces arising during the movement of mobile vehicle on a rough road and for improving the friction wheel on a road, there has been proposed a new design scheme of the relaxation-type hydraulic shock absorber. 6 ill. Bibl.4. Engl.: sum. In Russian.

MACHINE TECHNOLOGY OF REHABILITATION OF TEA PLANTATIONS. **Z. Makharoblidze.** "Problems of Mechanics". Tbilisi, 2018, № 3(72), pp. 67-70, (Engl.).

In the work is stated the existing situation on the Georgia tea plantations, are considered the machine technology and machines for overgrown and foresting tea plantations. Is stated the implementation of manufacturing application of machines for rehabilitation of tea plantations. 4 ill., Bibl. 3. Engl.; sum. in Russian.