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CAE ANALYZE OF REACTION FROM PLANETARY PRECESSIONAL TRANSMISSION

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Abstract: In order to valorize, on a large scale, precessional planetary transmissions, which are mechanical transmissions relatively complex on kinematical and dynamic levels, it is necessary to carry out supplementary fundamental research. For maximum consideration of the influence of dynamic load on the bearing capacity in the design phase it is strictly necessary to define the calculation method for processional gearing. In this respect the author made a number of original contributions to the definition of dynamicity factor of the load by designing a series of monograms in order to justify the selection of this factor. The results of complex research (analytical and CAE models) on the influence of basic geometrical parameters on the value and character of linear velocity variation, angular and linear accelerations of the teeth contact point subject to a precessional cycle have an important role in the prognostication of the precessional planetary transmissions dynamics behavior at the design phase.

Key words: precessional motion, gearing, gear wheel, profile, model, CAE, Motion Inventor.