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Abstracts of Short Communications and Posters

Section:

9. Ordinary Differential Equations and Dynamical Systems

1991 Mathematical Subject Classification: 34, 70

Chebanov, Dmitriy A., Institute of Applied Mathematics & Mechanics of NASU, Donetsk, Ukraine:

New exact solutions of the problem about motion of Lagrange's gyroscopes system.

The new class of nonstationary exact solutions of motion equations of n heavy Lagrange's gyroscopes coupled by ideal spherical hinges system is constructed. It contains P. V. Kharlamov solutions. The mechanical system motions when axes of symmetry of some bodies are collinear to the vertical axis and axes of other bodies are in vertical plane and they make equal angles with vertical correspond to the constructed solutions. Thanks to the obtained results some dynamical properties of the system of gyroscopes are determined.

Reference: P. V. Kharlamov, Some classes of exact solutions of the problem about motion of Lagrange's gyroscopes system, Math. physics **32** (1982), 63-76 (in Russian).