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Stabilization by Rotating Rigid Bodies for Unstable Rotation of a Rigid Body with Cavities Containing a Fluid

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In Y.N.Kononov's work there is shown a possibility of rotation stabilization of the gyroscope by introduction in a cavity transversal and coaxial partitions. However, in practice it cannot always be carried out. Other possibility of stabilization for unstable rotation of a rigid body with a fluid can be the rotating rigid bodies connected with the basic body by a common point and the elastic regenerating moment. – The cases of free and not free (there is a fixed point) rotations of the Lagrange gyroscope with an ellipsoidal or cylindrical cavity containing a perfect fluid are considered. One or two rotating rigid bodies are connected by means of an elastic spherical joint with the gyroscope. – The possibility of stabilization by rotating rigid bodies for unstable rotation of a rigid body with a fluid is shown. The effect of angular velocities of rigid bodies rotation as well as the factors of elastic regenerating moments effecting stabilization are obtained.

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