

## Theory of gyroscopic effects

Ryspek Usubamatov

Kyrgyz State Technical University, Kyrgyzstan

### Abstract

The physics of the gyroscopic effects is more complex than represented in known theories. Recent investigations have demonstrated that the external torque applied on gyroscopes generate the system of eight inertial torques acting interdependently. This torques is produced by the rotating the mass elements of the spinning disc and manifest all gyroscopic effects. Gyroscopic inertial torques is generated by the centrifugal, common inertial, Coriolis forces, as well as the change in the angular momentum of the spinning rotor. This torques represents the fundamental principles of gyroscope theory. New mathematical models for the gyroscopic effects are validated by practical tests. It is proven analytically that gyroscope's precession velocities are variable. The action of the resulting precession torques leads to the gyroscope turn up that proves no anti-gravity effect. The interrelated action of several inertial forces on the gyroscope manifests phenomena of their deactivation. Practice demonstrates the deactivation of centrifugal and Coriolis forces that contradict to principles of physics. The phenomena of the deactivation of the inertial forces need a deep study. Probably, there are other situations that manifest the deactivation of the inertial forces for the moving objects. This is a new challenge for the physics of mechanics.



### Biography:

Ryspek Usubamatov has completed his PhD from Bauman Moscow State Technical University. He is a professional Engineer in Mechanical, Manufacturing, and Industrial Engineering. He worked as a Lecturer in Kyrgyz State Technical University of Kyrgyzstan and Malaysia. He is a Professor of Kyrgyz State Technical University, a premier research organization. His key research is Productivity Theory for Industrial Engineering and Gyroscope Theory that represented by eight books, 30 brochures, 61 patents of inventions and more than 350 manuscripts in reputed journals and has been serving as an Editorial Board Member of several reputed journals. Years of combined operations in space and will be the baseline for the nanosatellites supporting asteroid exploration and recovery.



### Speaker Publications:

1. R. Usubamatov, Z.M. Zain, A.M. Ahmed, Productivity rate of machine tools depending on the change of machining modes, IMechE, B, 2011, August 2011 Vol. 225, No. 8 pp. 1447-1456.
2. R. Usubamatov, A. Usubamatova, M.Z.A. Muin, Analysis of part jamming in a feeder of automatic machines, Assembly Automation Vol.: 31, No. 2, 2011, pp.130-136.
3. R. Usubamatov, Analysis of inertial forces acting on gyroscope precession, International review of aerospace engineering, Vol. 4, No. 2, 2011, p. 103-108.
4. R. Usubamatov, K.W. Leong, "Analyses of peg-hole jamming in automatic assembly machines", Assembly Automation, Vol. 31, No. 4, 2011, pp.358 - 362.
5. R. Usubamatov, A. Y. Qasim, Z. M. Zain, New vane type wind turbine of high efficiency, Journal of Science and Technology, Pertanika, 2012, pp.175-188.

[7<sup>th</sup> Global Meet on Wireless, Aerospace & Satellite Communications](#); Paris, France- February 12-13, 2020.

### Abstract Citation:

Ryspek Usubamatov, Theory of gyroscopic effects, Euro Satcomm 2020, 7<sup>th</sup> Global Meet on Wireless, Aerospace and Satellite Communications; Paris, France- February 12-13, 2020 (<https://wireless.conferenceseries.com/abstract/2020/theory-of-gyroscopic-effects>)