Disturbing and Resonance Phenomena in the Rotation of Artificial Satellites and their Investigation.

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The analysis of the prolonged observations showed that the uncontrolled artificial satellites which are dinostinguished by their mass, size and shape can be a good indicator of different processes in the circumterrestrial cosmic space. Any such sate -llite "tries to please" disturbing moments. The latter are born by the unsymmetry of the Earth's and the Moon's gravitational fields, the aerodynamic processes, the Earth's magnetic field, the pressure of the Solar radiation, the reaction of the inner mobile parts of the satellite. The difficulty in the solution of this problem is connected with the separation of these moments into individual components of the resultant interaction. Researchs of the changing of the satellite rotation period around its own center of mass, and the Earth in the present case are insufficient. The definition of the orientation character of one of main object's axes, and its changing are an important step to success. These affirmations are caused by our experiment. We determined the secular precession period, and the sector of the ging charac -ter. According to the theory, the triaxial satellite will be regu -larly precess around the direction of the vector of the angular momentum in the gravitional field which acting with another field in resonance. The vector of the angular moment processes around the perpendicular to the orbital plane. The obtained data concerning the character of the secular precession allowed us to conclude about the mechanism of the influ -ence of the main disturbings moments in their interaction to the satellite. For example, the Moon's effect is clearly displaying on the rotation of the heavy satellites with the single stereometric shape. The resistance of the Earth's atmosphere at the dependence from the flight's altitude begins to outweigh, if the satellite has panels of the solar cell array. During the year seasonal changing of the rotation period has been noticed in light satellites especially of large diameters. The analysis of the orientation character of the satellite "Pageos" (m=56 kg, d=32 m, H= 4000 km) , and the theoritical calculations of the action of the all possible disturbing moments concerning it have been carried out. The obtained data displayed that the interaction of two disturbings moments such as the magnetic moment, and the solar radiation pressure have been the cause

of the seasonal changing of the rotation period of the present satellite. This interaction has a resonance character. Experimental results concerning satellites "Midas-7", "Pageos", "Cosmos-626", satellite rocket bearer "Cosmos-546" are presented in the paper as poster. The method of the orientation definition of the uncontrolled satellites have been carried out at the Uzhgorod University. Results of the photometric, and positional observations for the Earth's artificial satellites are the base of the abovementioned methods. All the experimental data have been obtained at the Uzhgorod University.