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Title	**The laboratory platform for achieving the positioning of the satellite in the orbital magnetic field**
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Patent no.	-
Description EN	The research/testing of nano-microsatellite attitudes with simulation satellite attitude in orbital conditions is a current issue, especially for nanosatellites, the attitude control of which is done with reaction wheels and magnetorquers. The proposed installation includes 2 simulators: - for experimental research in laboratory the kinematic and dynamic of nano-microsatellites with spherical space movement with a fixed point; - for experimental research of the dynamic attitude of the satellite in the simulated geomagnetic field. The simulator of research a kinematics of nano-microsatellite with a fixed-point spherical space motion reproduces the rotation of the satellite around 3 axes of the orbital reference system. It also allows experimental research on the intervention of the onboard systems on the orientation of nano-microsatellites in orbit, including the determination and calibration of the physical intervention efforts developed by

the two board systems on the stability and the dynamics of the positioning of the nano-microsatellite on the axes of the coordinate orbital system. The simulator allows the experimental research of nano-microsatellite in laboratory and vacuum conditions.

The simulator of geomagnetic field for computerized testing of various equipment. It features a 1.4 m section in a chamber designed to calibrate the magnetic properties of the sensors to test the nanosatellite attitude control, as well as for other areas.

The simulator is able to reproduce the power and direction of the geomagnetic field measured anywhere in orbit. The magnetic fields generated by the simulator will be varied by modulation of the current in the Helmholtz coils so that we can test the entire magnetic intensity range, which could be encountered anywhere in the orbit.

Both simulators work under the command of the computing system, which requires the generation of similar conditions in orbit, including the magnetic field or the dynamic field of certain direction and intensity.

Class no. 5