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## The conceptual project of the geophysical microsatellite

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SDO "Yuzhnoye" have developed a radio physical method of measurements of parameters gravitational field of the Earth, which is based on the measurement of size of change of frequency of electromagnetic radiation by gravity with the subsequent definition of a gradient or acceleration of free falling. This method has two versions:

- Differential radio physical method
- Integrated radio physical method

Technically the difference between these two versions of a method consists that gravitational displacement of frequency is measured in a differential method between two receivers of electromagnetic radiation, and in integrated - between a source of radiation and the receiver. Within the limits of project STCU № 3856 experimental researches of a radio physical method have been spent. Considering specific requirements on realisation of a differential radio physical method the project of the gravitationno-focused geophysical microsatellite has been developed. The project of the geophysical microsatellite is innovative as regarding a method of measurements, and a part of design-layout scheme microsatellite :

- The Radio physical method allows to measure gravitational potential, acceleration of free falling, a gravitational constant and weight of planets.
- The Design-layout scheme of the geophysical microsatellite excludes necessity of use of active system of stabilisation, provides constant light exposure of solar batteries, excludes the revolting moment caused by influence of external factors, and allows solving problems of measurement of parameters gravitational field of the Earth.
- The Radio physical method is based on measurement of relativistic effect of gravitational displacement of frequency of an electromagnetic signal which has not found till now practical realization.

## Biography

Matviyenko Sergiy Anatoliyovich, in 1984 finished the Dnepropetrovsk State University, physico technical faculty. Since 1986, he has been working in SDO "Yuzhnoye". In 2011, he completed the Master's thesis on "The radio physical method of measurement of parameters of a gravitational field of the Earth" which is based on five patents of Ukraine and eighteen publications in collections BAK of which five are made without co-authors. He has five copyright certificates of the USSR, 11 patents of Ukraine, three demands for the invention and eight certificates on registration of the copyright to product and also has published 43 scientific articles.

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