MICROGRAVITY SCIENCES AND PROCESSES SYMPOSIUM (A2)
Gravity and Fundamental Physics (1)

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MICROSCOPE MISSION: PRELIMINARY RESULTS

Abstract

The MICROSCOPE space mission aims at testing the Equivalence Principle with an accuracy of 1E-15. It will test for the first time in space this founding principle of General Relativity. Whether it confirms or not the Equivalence Principle, it will bring a major constrain on new theories aiming to unify Gravity to Quantum Physics. The payload developed by ONERA is composed of two double inertial sensors giving full 6-axis measurements to be processed with on board GPS and star-trackers collected data. The on ground data processing takes into account the fine datation of the measurement pick up and the position of the satellite along its orbit to correct for the effect of the Earth's gravity gradient in the difference of the acceleration of two bodies in free-fall. Once corrected the data will be analyzed to extract a possible signal of violation which is proportional to the Earth's gravity field. In April 2016, the MICROSCOPE satellite was launched from Kourou, French Guyana. At the time of this presentation, the commisioning has been completed and the science phase is well underway. We will present the mission preliminary results with a particular focus on the in-orbit calibration.