

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

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ADAPTION OF HPS TO THE MICROSCOPE MISSION

**Abstract**

The French space mission MICROSCOPE aims at testing the Weak Equivalence Principle (WEP) up to an accuracy of  $1E-15$ . The experiment will be carried out on a satellite which is developed and produced within the CNES Myriad series. The measuring accuracy will be achieved by means of two high-precision capacitive differential accelerometers, that are built by the French institute ONERA. Currently, the HPS (High Performance satellite dynamics Simulator), a tool to support mission modeling, is adapted to the MICROSCOPE mission for the simulation of test mass and satellite dynamics. This tool is developed at ZARM in cooperation with the DLR Institute of Space Systems. It includes possibilities for modeling environmental disturbances like solar radiation pressure as well as mission specific design aspects (e.g. geometry, number of accelerometers). At ZARM, which is member of the MICROSCOPE performance team, the upcoming data evaluation process is prepared by using the HPS. Therefore a comprehensive simulation of a real system including the science signal and all error sources is built. The talk will contain a description of the HPS structure as well as of the implementation of environment models. Secondly, the actual status of the mission modeling will be presented.