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The first results of the MICROSCOPE space test of the equivalence principle.[1]

MANUEL RODRIGUES, ONERA

The MICROSCOPE space mission aims at testing the (weak) equivalence principle (WEP) with 10^{-15} precision level. The CNES microsatellite was launched on April 2016 with ONERA instrument on board and, since then, collected more than 2000 useful orbits for the WEP test. The first results are based on only 10% of the current available data and show that no violation is detectable at less than $2x10^{-14}$ level, improving by one order of magnitude the current ground experiments. The presentation will focus on these first results, showing how systematic and random errors have been established. These errors should be reduced by a better knowledge of the instrument and the satellite environment to better correct the systematics. Cumulating data will allow us to better reject the random noise. The satellite is managed as a space laboratory of Physics experiments as shown by the mission scenario. In particular, the instrument's scale factor and alignment on-board calibration experiments establish the good repeatability of the tests and the stability of the instrument. In conclusion, the ongoing process to further improve the accuracy will be exposed.

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