

Towards and antimatter gravity measurement with antihydrogen

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After the first production of cold antihydrogen by the ATHENA collaboration at CERN's Antiproton Decelerator, second-generation experiments are being performed and/or being set up with the aim of measuring its fundamental properties. Several experiments have recently succeeded in storing antihydrogen for extended times and even in performing first spectroscopic measurements aimed at a test of CPT symmetry. The goal of the AEGIS experiment is to measure the gravitational interaction between matter and antimatter. Antihydrogen will be produced by charge exchange of cold antiprotons with highly excited positronium. Subsequently, the free-fall acceleration will be measured with a moiré deflectometer in order to test the weak equivalence principle of General Relativity. In this talk, after an introduction to antimatter physics, the present status and medium term plan of the AEGIS experiment at CERN will be presented.