

## **ANTIMATTER GRAVITY MEASUREMENT IN A BEAM - THE AEGIS EXPERIMENT**

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The gravitational interaction between matter and antimatter has never been precisely measured, despite its fundamental nature. With the successful formation of antihydrogen atoms at the Antiproton Decelerator of CERN, a test of the Weak Equivalence Principle for antimatter by determining the acceleration of antihydrogen atoms in the Earth's gravitational field becomes possible. The AEGIS collaboration aims at performing such a test by producing a horizontal beam of cold antihydrogen atoms and measuring its gravity-induced fall over a distance of about one meter. The beam will be produced by a charge exchange reaction between excited Rydberg positronium and traverse a moiré deflectometer. The vertical displacement of the beam will be determined by a position and time sensitive detector. The produced antihydrogen beam can ultimately also be used for precision hyperfine spectroscopy as a test of CPT symmetry. The status of the experiment which is currently taking data at the AD will be reviewed.