

## AEGIS - Latest results

Monday, 11 September 2017 14:00 (30 minutes)

The validity of the Weak Equivalence Principle (WEP) as predicted by General Relativity has been tested up to astounding precision using ordinary matter. The lack hitherto of a stable source of a probe being at the same time electrically neutral, cold and stable enough to be measured has prevented high-accuracy testing of the WEP on anti-matter.

The AEGIS (Antimatter Experiment: Gravity, Interferometry, Spectroscopy) experiment located at CERN's AD (Antiproton Decelerator) facility aims at producing such a probe in the form of a pulsed beam of cold anti-hydrogen, and at measuring by means of a moiré deflectometer the gravitational force that Earth's mass exerts on it.

Low temperature and abundance of the  $\bar{H}$  are paramount to attain a high precision measurement. A technique employing a charge-exchange reaction between antiprotons coming from the AD and excited positronium atoms is being developed at AEGIS and will be presented in the talk, alongside an overview of the experimental apparatus and the current status of the experiment.

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