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[376] Measurement of the Lamb shift of Antihydrogen atoms in GBAR

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This Fall the upgrade of the antiproton decelerator, the Extra Low ENergy Antiproton (ELENA) ring, will start operation at CERN opening a new era for antihydrogen research. In the context of the GBAR experiment aiming to study the gravitational behaviour of antimatter, our group from ETHZ proposed and is preparing a Lamb shift measurement of antihydrogen with an uncertainty of 100 ppm. This will allow to extract the antiproton charge radius at a level of 10% and will provide a sensitive test of Lorentz and CPT symmetry. I will present the results of the setup commissioning with hydrogen atoms and plans for the upcoming beamtime with antiprotons.

Authors: BLUMER, Philipp Peter (ETH Zurich (CH)); JANKA, Gianluca (ETH Zurich (CH)); OHAYON, Ben (ETH Zurich (CH)); REGENFUS, Christian (ETH Zurich (CH)); CRIVELLI, Paolo (ETH Zurich (CH))

Presenter: BLUMER, Philipp Peter (ETH Zurich (CH))

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