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【326】 Status of GBAR: First results of Antihydrogen production

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The GBAR collaboration at CERN aims to directly test the Weak Equivalence Principle with a free fall of ultracold antihydrogen $\bar{\text{H}}$ in Earth's gravitational field. The main principle is to first produce an antihydrogen ion $\bar{\text{H}}^+$ and sympathetically cool it to μK temperature. The excess positron is then photodetached and the neutral anti-atom experiences a classical free fall. By measuring the time of flight and the annihilation position of the $\bar{\text{H}}$ we determine its acceleration with a precision of 1% in a first phase. I will present first evidence of $\bar{\text{H}}$ production in 2022, a milestone for the experiment, as well as the status and future prospects of GBAR.

Theoretical Work

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