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Antihydrogen 1S-2P Spectroscopy (G)*

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Antihydrogen and hydrogen are simple atomic systems which provide an ideal platform to study differences between antimatter and matter; current theories predict that the universe should be composed of equal quantities of matter and antimatter but cosmological observations place the ratio of the two near 10^{-4} . The ALPHA (Antihydrogen Laser PHysics Apparatus) collaboration at CERN studies the atomic structure of antihydrogen through electromagnetic interactions. The second generation of experimental hardware used by ALPHA, called ALPHA2, produces antihydrogen by mixing samples of antiprotons and positrons, using a Penning trap, inside a minimum B trap; the antiatoms that have a low enough kinetic energy can be confined and studied. This talk will report on recent measurements related to our ongoing studies of 1s-2p spectroscopy of antihydrogen.

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