

Abstract Submitted  
for the DNP16 Meeting of  
The American Physical Society

**Antihydrogen Electric Charge Neutrality: A New Limit from ALPHA at CERN** ANDREA CAPRA, TRIUMF, M. BAQUERO-RUIZ, University of California at Berkeley and CRPP, C. CARRUTH, A. CHARMAN, L. T. EVANS, University of California at Berkeley, N. EVETTS, University of British Columbia, J. FAJANS, University of California at Berkeley, M. C. FUJIWARA, D. R. GILL, TRIUMF, A. GUTIERREZ, W. N. HARDY, University of British Columbia, M. E. HAYDEN, Simon Fraser University, L. KURCHANINOV, J. T. K. MCKENNA, TRIUMF, S. MENARY, York University, J. M. MICHAN, TRIUMF, T. MOMOSE, University of British Columbia, J. J. MUNICH, Simon Fraser University, K. OLCHANSKI, ARTHUR OLIN, TRIUMF, A. POVILUS, University of California at Berkeley, C. SO, University of California at Berkeley and University of Calgary, R. I. THOMPSON, University of Calgary, J. S. WURTELE, A. I. ZHMOGINOV, University of California at Berkeley, ALPHA COLLABORATION — The equivalence of the absolute value of the electric charge of the electron and of the proton is experimentally well-established. It also finds strong theoretical motivations within the Standard Model. A similar measurement on positrons and antiprotons provides, in addition, a test of the CPT invariance. The ALPHA collaboration set a new upper limit on the electric charge  $Qe$ , where  $e$  is the elementary charge, of the antihydrogen atom by applying stochastic acceleration to the magnetically confined antiatoms. The limit  $|Q| < 7.1 \times 10^{-10}$  ( $1\sigma$  confidence level) is a 20-fold improvement on the previously best measurement. The present result places an improved limit on the positron charge anomaly of about 1 ppb.

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Date submitted: 30 Jun 2016

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