

Abstract Submitted  
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**Nonneutral plasma diagnostic commissioning for the ALPHA Antihydrogen experiment** S. KONEWKO, Marquette University, T. FRIESEN, Aarhus University, T. D. THARP, Marquette University, ALPHA COLLABORATION — The ALPHA experiment at CERN creates antihydrogen by mixing antiproton and positron plasmas. Diagnostic measurements of the precursor plasmas are performed using a diagnostic suite, colloquially known as the "stick." This stick has a variety of sensors and is able to move to various heights to align the desired diagnostic with the beamline. A cylindrical electrode, a faraday cup, an electron gun, and a microchannel-plate detector (MCP) are regularly used to control and diagnose plasmas in ALPHA. We have designed, built, and tested a new, upgraded stick which includes measurement capabilities in both beamline directions.

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