

Abstract Submitted
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Formation of antihydrogen positive ions D. VRINCEANU, S. X. HU, S. F. MAZEVET, L. A. COLLINS, Theoretical Division, Los Alamos National Laboratory, Los Alamos, NM 87545 — We have performed molecular dynamics (MD) simulations of an ultracold positron-antiproton plasma in a strong magnetic field (5.4 Tesla). Three-body recombinations produce magnetized cold antihydrogen atoms. Besides the neutral antihydrogen atoms, we also observed the formation of antihydrogen positive ions - two positrons bind to an antiproton. Similar to negative hydrogen ions, this new antimatter form is important because it can be trapped by the existing fields, which confine the positrons. The production of positive H-bar ions is enhanced by the magnetic field.

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