

Abstract Submitted
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Positron accumulation for the fueling of matter-antimatter pair plasmas E.V. STENSON, T. SUNN PEDERSEN, U. HERGENHAHN, H. SAITOH, X. SARASOLA, N. PASCHKOWSKI, F. SCHAUER, Max Planck Institute for Plasma Physics, G.H. MARX, L. SCHWEIKHARD, Ernst-Moritz-Arndt University, C. HUGENSCHMIDT, Technische Universitaet Muenchen, J.R. DANIELSON, C.M. SURKO, University of California, San Diego — Pair plasmas have been a topic of theoretical and astrophysical interest for decades. APEX (A Positron-Electron Experiment) aims to create them in the laboratory by building upon recent advancements in several areas: devices that can magnetically confine both quasi-neutral and non-neutral plasmas, the strength of positron beams, and the manipulation of non-neutral plasmas. This last is the focus of the Positron Accumulation Experiment (PAX). PAX will provide a necessary bridge between the source of APEX's positrons (Neutron-Induced Positron Source Munich) and the magnetic confinement device for the pair plasma. PAX will cool and store incoming positrons over a 10-15 minute period, thereby accumulating them at sufficiently low energies and in sufficiently high numbers that the resulting plasma will extend at least 10 Debye lengths. The current status of PAX's construction and tests will be presented.

Eve Stenson
Max Planck Institute for Plasma Physics

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