Towards the production of anti-hydrogen beams

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In Antiproton Decelerator (AD) at CERN, low energy antiproton beams of 5.6 MeV have been delivered for physics experiments. With the use of the unique RFQ decelerator (RFQD), Atomic Spectroscopy And Collisions Using Slow Antiprotons (ASACUSA) collaboration is capable of providing ~100 keV pulsed antiproton beams for its various experimental programs. This enables for Mono-energetic Ultra Slow Antiproton Source for High-precision Investigations (MUSASHI) trap to produce intense antiproton beams with the energy of 100 to 1000 eV [1].
Recently, the production of low energy anti-hydrogen atoms in the Cusp trap with the use of 150eV antiproton beams from MUSASHI trap was reported [2]. The purpose of producing low energy anti-hydrogen atoms in a cusped magnetic field is to extract a polarized anti-hydrogen beam to a field free region [3], so that the hyperfine structure of anti-hydrogen atoms can be measured with a good enough precision.
Recent results, developments and the current status of the CUSP trap experiment will be reported.

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