

The CERN Antimatter Factory: Performance and Perspectives

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Since the end of the CERN Long Shut down 2 (LS2), the Antimatter Factory consists of the old CERN Antiproton Decelerator (AD) to which has been added the Extra Low ENergy Antiproton (ELENA) decelerator, allowing to serve 100 keV antiprotons up to 4 experiments at each cycle, as compared to 5.3 MeV to a single experiment before LS2. The much lower extraction energy make it possible for the experiments to increase the number of trapped antiprotons with up to two orders of magnitude. Since 2021, first year of beam physics in the ELENA era, the performances of both machines are constantly improving, allowing to deliver twice the designed bunch intensity to the users. In this contribution, we will present the current status of the facility and review the main improvements that allowed record beam intensities to be delivered, with emphasis on the optimization of antiproton production and injection, progress made on the stochastic and electron cooling performance. Finally, we will conclude with the consolidation and upgrades planned for the coming years.

Footnotes

Funding Agency

I have read and accept the Privacy Policy Statement

Yes

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