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STATUS REPORT ON THE ANTIPROTON DECELERATOR (AD)

T. Erikson, S. Maury, D. Möhl

Abstract

CERN's new Antiproton Decelerator (AD) has been delivering a 100 MeV/c antiproton beam to three experiments (ASACUSA, ATHENA, and ATRAP) since July 10th, 2000. In this status report, we summarise the initial performance of the AD, draw provisional conclusions from the first month of operation and finally give some prospects for the future.

LEAP 2000, 20th-28th August 2000, Venezia, Italy

20 November, 2000

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T. Erikson, S. Maury, D. Möhl
(for the AD machine team)

CERN, PS Division, Geneva, Switzerland

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1 Introduction

In November 1999, the Antiproton Decelerator (Fig. 1) delivered its first ejected antiprotons at 100 MeV/c. At that time, the emittances were still very large and the intensity was low ($\sim 10^6$ antiprotons) because several systems, including the beam cooling at 100 MeV/c, were not yet working. After the shut-down of the CERN machines, commissioning resumed in April 2000, and from the 10th July onwards, a beam with the characteristics summarized in Table 1 was more or less routinely delivered to the three experiments ASACUSA, ATHENA, and ATRAP.

The performances shown in Table 1, approach the design goal and were consistently obtained when all systems worked "correctly". However there were still many periods with reduced performance or complete break-down, due to difficulties with various hardware and software components. In this status report, we will draw first conclusions from the initial month of operation and give prospects for future improvements.

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Figure 1 : Layout of the Antiproton Decelerator and the Experimental Area.

