

$\bar{d}14$ 1st cosmic ray antideuteron workshop

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Antiproton identification with the AMS-02 detector

Thursday, June 5, 2014 3:00 PM (30 minutes)

The second generation of the Alpha Magnetic Spectrometer - AMS-02 - is a state-of-the-art detector that has been operating onboard the International Space Station (ISS) for the last 3 years; since then, more than 48 billion events have been detected. One of the goals of AMS-02 is to search for antimatter and dark matter. The AMS-02 detector is composed of several sub-detectors, which can be used for precise determination of particle species and its mass.

In this talk, we show a method for antiproton background separation in addition to separating particle species using the Tracker, Time-Of-Flight (TOF) and Ring Imaging Cherenkov Detector (RICH) subsystems in their optimal energy regimes.

Since antideuterons have yet to be detected in the current data, we also demonstrate how one can separate antiprotons from pions and kaons.

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