



Contribution ID: 27

Type: **oral**

Deuteron identification with the AMS-02 RICH detector

Wednesday, March 27, 2019 2:45 PM (20 minutes)

The Alpha Magnetic Spectrometer (AMS-02) is operating aboard the International Space Station since May 2011, measuring cosmic rays in the GeV to TeV energy range. The isotopic composition of cosmic ray nuclei is strongly connected to their propagation in the Milky Way. Deuterons can be efficiently separated from the background of protons and helium nuclei by means of their mass, reconstructed by combining the velocity, charge and momentum, measured by different sub-detectors, namely the RICH, the Time of Flight and the tracker.

In this work, we will present our deuteron identification strategy, based on the mass reconstruction with the AMS-02 Ring Imaging CHerenkov (RICH). Our method aims at identifying with great precision the signal among the background of protons and heavier nuclei fragmenting inside the AMS-02 detector.

Primary authors: FERRONATO BUENO, Eduardo (University of Groningen); VECCHI, Manuela

Presenter: FERRONATO BUENO, Eduardo (University of Groningen)