



Contribution ID: 232

Type: **Presentation**

## Measurement of the Cosmic Rays Boron-to-Carbon Ratio with AMS-02.

*Tuesday, June 24, 2014 5:50 PM (15 minutes)*

AMS-02 is a high-energy particle physics experiment operating continuously since May 2011 onboard of the International Space Station.

Given the wide acceptance, long exposure time and particle identification capabilities, AMS-02 is able to determine the cosmic rays (CRs)

chemical composition from charge  $Z = 1$  up to at least  $Z = 26$  in a kinetic energy range from GeV/n to few TeV/n.

Among the CRs nuclei measurement the Boron-to-Carbon fluxes ratio is of particular importance, being the B/C one of the most sensitive

observables for the CRs propagation modeling.

AMS-02 is able to accurately identify Boron and Carbon samples using energy deposition in Silicon Tracker and in the Time-of-Flight.

Charge-changing interactions (as  $C \rightarrow B$ ) are controlled using the energy deposition distribution of the Silicon layer on the top of AMS.

Detection efficiencies differences of Boron and Carbon have been investigated and corrected using data driven approaches.

Difference of flux attenuation due to hadronic interaction in AMS materials are accounted using Monte-Carlo simulation, validated with comparisons with data.

**Primary author:** OLIVA, Alberto (Centro de Investigaciones Energ. Medioambientales y Tecn. - (ES))

**Presenter:** OLIVA, Alberto (Centro de Investigaciones Energ. Medioambientales y Tecn. - (ES))

**Session Classification:** Cosmic Rays

**Track Classification:** Cosmic Rays