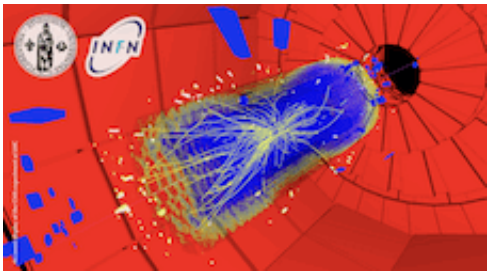

Contribution ID: **57** Type: **Talk**

The AMS-02 Silicon Tracker Status

Wednesday, 6 July 2011 15:20 (20 minutes)

The Alpha Magnetic Spectrometer (AMS-02) is a high-energy physics experiment operating in space on the International Space Station since the 16th of May. Thanks to a large acceptance and a data taking period of, at least, 10 years, AMS-02 will measure over 1010 charged particles in the rigidity range 500 MV - 2 TV. AMS-02 is able to measure the energy spectrum of the cosmic ray components (antideuterons, antiprotons, electrons, positrons, ⋯) allowing the searching of primordial antimatter and dark matter annihilation products.

7 planes of Silicon sensors in the permanent magnet (0.15T) bore and 2 planes at the ends of the detector act as tracking device. The measurement of the curvature radius of the charged particles bent trajectories allows the computation of the particle rigidity and charge sign.

With an effective sensible area of 6.2m2 the AMS-02 Silicon Tracker is the largest tracker never built for space application. It is composed by 2264 double-sided Silicon sensors (72x41mm2, 300μm thick) assembled in 192 read-out units, for a total of 200.000 read-out channels.

At the end of July 2010 the AMS-02 Silicon Tracker has been successfully integrated and installed within the AMS-02 detector. Then an extensive muon data acquisition on ground, a beam test, and the first month of data taking in space, allowed for the study of the Si Tracker performances that will be presented.

Primary author: Mr DURANTI, Matteo (Università di Perugia and INFN)

Presenter: Mr DURANTI, Matteo (Università di Perugia and INFN)

Session Classification: DAY 1

Track Classification: Tracking Systems