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The AMS-02 Silicon Tracker: After one Year in Space

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The Alpha Magnetic Spectrometer (AMS-02) is a high-energy physics experiment operating on the International Space Station since May 19th 2011.

It measures the different components of cosmic rays to search for primordial antimatter and annihilation products of dark matter.

With its large acceptance and at least 10 years of operation, AMS-02 will measure more than 10^{10} charged particles in the GV-TV rigidity range.

The tracking device consists of 7 planes of Silicon in the bore of a permanent magnet (0.14T) and of 2 planes at the ends of the detector.

It measures the rigidity and charge sign and identifies the ion species by dE/dx .

The tracker is composed by 2264 double-sided Silicon sensors ($72 \times 41 \text{ mm}^2$, $300 \mu\text{m}$ thick) assembled in 192 units, for a total of 200.000 read-out channels.

The status of the AMS-02 tracker and its operation, after first months of data taking in space, will be presented, as well as its performances and potentialities.

for the collaboration

on behalf of the AMS Tracker collaboration

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