

Plenarvortrag

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Highlights from AMS: 7 years on the International Space Station — ●IRIS GEBAUER — Karlsruhe Institute of Technology, Karlsruhe, Germany

In May 2011 the Alpha Magnetic Spectrometer (AMS) was installed on the International Space Station (ISS). AMS is a complex particle detector designed to precisely measure the fluxes of cosmic rays between 0.5 GeV and a few TeV. The physics goals of the experiment include the search for possible signals of dark matter annihilation and hints for primordial antimatter in the fluxes of cosmic rays.

To date AMS has collected more than 100 billion events, consisting of protons and nuclei, few electrons and traces of antimatter. The precision of the measurements reveals many unexpected features, some of which challenge our current understanding of cosmic ray acceleration and galactic transport. For instance, the observed increase in the flux of energetic positrons could be explained by dark matter annihilation, as well as new astrophysical sources.

This talk provides an overview over some of the most exiting and often surprising results from the first 7 years of AMS data dating on ISS. I will briefly discuss their impact on our understanding of the origin and transport of galactic cosmic rays.