

Latest Results of AMS Experiment on the International Space Station (ISS)

Chanhoon Chung(chchung@physik.rwth-aachen.de)

RWTH Aachen University

Abstract

The Alpha Magnetic Spectrometer (AMS-02) is a state-of-the-art particle physics detector designed to operate as an external module on the International Space Station (ISS). It has used the unique environment of space to study the universe and its origin by searching for antimatter, dark matter while performing precision measurements of cosmic rays composition and flux. In seven years on the ISS, AMS has collected more than 115 billion charged cosmic rays with energies up to multi TeV. The measured positron spectra agrees well with dark matter models. The energy dependence of elementary particles (electrons, positrons, protons and antiprotons) as well as the rigidity dependence of primary cosmic rays and secondary cosmic rays are unique and distinct. These results require a new understanding of the cosmos.

Keywords: *Cosmic rays, AMS02, ISS*

References

- [1] Towards Understanding the Origin of Cosmic-Ray Positrons, PHYSICAL REVIEW LETTERS 122, 101101 (2019)
- [2] Towards Understanding the Origin of Cosmic-Ray Positrons, PHYSICAL REVIEW LETTERS 122, 041102 (2019)

Biography

Chanhoon Chung, a astro-particle physicist at RWTH Aachen University in Germany. In 2007, he received the PhD in the high energy physics experiment from RWTH Aachen University for studies of dark matter search in space. He participated in the design, commissioning and later in operation AMS experiment leaded by Nobel Laureate, Samuel Ting (MIT). He is a visiting scholar at CERN in Europe, and at NASA in USA.