Einladung zum Physikalischen Kolloquium

Invitation to the Physics Colloquium

Friday, 13. December 2019

Stefan Schael
RWTH Aachen

“The search for Dark Matter and Antimatter in Space – The AMS-02 Experiment on the International Space Station”

The Alpha Magnet Spectrometer (AMS) was brought to the International Space Station (ISS) in May 2011 with the last flight of the Space Shuttle Endeavour. With a weight of 7 tons and dimensions of 5m x 4m x 3m, AMS is by far the largest and most complex basic research experiment on the ISS. More than 500 scientists from 16 countries have been working on the development and construction of this unique research instrument for more than 15 years. Since May 2011, AMS has precisely measured more than 140 billion cosmic ray particles, far more than all previous experiments in this field of research combined. The precision measurements made possible for the first time in this way provide new and unexpected insights into high-energy processes in our Milky Way and make it possible to investigate questions about the nature of dark matter and the matter-antimatter asymmetry in the universe from new points of view. AMS will be in operation on the ISS at least until 2024. The most important scientific results of AMS will be summarized and the perspectives for this exciting field of research beyond 2024 will be presented.