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Towards understanding the origin of cosmic electrons and positrons: precision measurements of e+ and e- fluxes with the Alpha Magnetic Spectrometer on the ISS

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Precision measurements of cosmic ray positrons and electrons are presented based on 1.9 million positrons and 28.1 million electrons collected by the AMS-02 experiment on the International Space Station. For the first time, the positron flux is measured up to 1 TeV and the electron flux up to 1.4 TeV: in the entire energy range the electron and positron spectra have distinctly different magnitudes and energy dependences leading to a clear evidence that most high energy electrons originate from different sources than high energy positrons. The study of the anisotropies in their arrival directions is also presented, which can be provide further information to understand their origin.

Collaboration name

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