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Precision Measurement of the Combined Electron and Positron Flux in Primary Cosmic Rays with AMS on the ISS

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We present the latest measurement of the combined electron and positron flux in cosmic rays based on the analysis of all the AMS data collected during more than 5 years of operations. The multiple redundant identification of electrons and positrons, and the match of energy measured by the 17 radiation lengths calorimeter and the momentum measured by the tracker in the magnetic field enable us to select a clean electron and positron sample up to the highest energies. The extensive calibration of the detector in the test beam at CERN verifies the energy scale and the proton rejection power.

These latest results, based on twice the statistics of our previous publication, disagree with the results of other experiments, especially at high energies. Our results in the region from 30 to 1000 GeV can be described accurately by a single power law dependence.

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