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## Antiproton Flux and Properties of Elementary Particle Fluxes in Primary Cosmic Rays Measured with the Alpha Magnetic Spectrometer on the ISS

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We present the latest precision AMS measurements of the fluxes of all charged cosmic elementary particles, positrons, electrons, protons, and antiprotons based on the first 11 years of data collected on the International Space Station. These unique results, obtained with the same detector and with unprecedented precision in the uncharted energy range, provide precise experimental information and reveal new properties of cosmic charged elementary particles. In the absolute rigidity range of 60 to 525 GV, the antiproton-to-proton flux ratio is constant, and the antiproton flux and proton flux have identical rigidity dependence. This behavior indicates an excess of high-energy antiprotons compared with secondary antiprotons produced from the collision of cosmic rays. More importantly, from 60 to 525 GV, the antiproton flux and positron flux also show identical rigidity dependence. The positron-to-antiproton flux ratio is independent of energy and its value is determined to be a factor of 2 with percent accuracy. This unexpected observation indicates a common origin of high-energy antiprotons in the cosmos.

## Submitted on behalf of a Collaboration?

Yes

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