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Precision Measurement of Cosmic Ray Deuterons with Alpha Magnetic Spectrometer

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Deuterons are the most abundant secondary nuclei in cosmic rays and precise measurement of their properties will allow to test and constrain various cosmic ray propagation models.
The precision measurement of deuteron flux with kinetic energy per nucleon from 0.2 GeV/n to 9 GeV/n based on 15 million deuterons collected by Alpha Magnetic Spectrometer during the first 10 years of operation on the International Space Station is presented. The deuteron-to-proton and deuteron-to-4helium flux ratios are also shown, together with their time evolution over an almost complete solar cycle.

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