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First Results of the AMS-02 Experiment on the ISS

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AMS-02 is a general purpose cosmic ray detector operating on the International Space Station since 19 May 2011. The results based on the data collected during the first 2 years of the mission include high precision measurements of the proton, helium, electron and positron fluxes, and the boron to carbon ratio in the energy range from ~1GeV/n to ~1TeV/n. Proton and helium spectra are consistent with single power laws with no fine structures or breaks. The boron to carbon ratio shows no evidence for a structure within the studied energy range. The positron fraction is determined in the energy range from 0.5 to 350GeV and its energy spectrum shows an steadily increasing fraction from 10 to ~250GeV with no fine structure. The positron to electron and positron to proton ratios are consistent with isotropy within this energy range.

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