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## Cosmic-ray Astrophysics with the AMS-02 experiment

### Abstract content

Precise knowledge of the hadronic component of cosmic rays is needed to describe the cosmic ray production, acceleration and propagation mechanisms in our galaxy. Present measurements suffer from limitations coming from short exposure time, intrinsic instrumental limitations and restricted energy range. The AMS-02 experiment is a large acceptance magnetic spectrometer to perform high statistics studies of cosmic rays in space. The detector will operate on the International Space Station for more than 3 years. AMS-02 will precisely measure the cosmic ray fluxes of individual elements up to  $Z \sim 25$  in the rigidity range from  $\sim 1\text{GV}$  to  $\sim 2\text{TV}$ . Moreover, one solar cycle (11 yrs) duration spectra measurements of these elements with energy up to  $25\text{ GeV/nuc}$  would be made possible. AMS-02 will allow to test propagation models through the precise measurements of secondary-to-primary ratios as  $D/p$ ,  $^3\text{He}/^4\text{He}$  in the energy range few hundreds MeV to tens of GeV, and  $B/C$ , sub- $\text{Fe}/\text{Fe}$  up to  $\sim 1\text{TV}$ . In particular the original measurements of  $^{10}\text{Be}/^9\text{Be}$  will be performed with high accuracy allowing the understanding of the age of the cosmic-ray confinement and constraint models of the size of the galactic halo.

**If this papers is presented for a collaboration, please specify the collaboration**

### Summary

### Reference

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