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Cosmic Rays Antideuteron Sensitivity for AMS-02 Experiment

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Abstract content

For energies less than ˜3 GeV/n, the Cosmic Rays Antideuteron component due to spallation becomes negligible for kinematic reasons and the detection of even a single antideuteron would strongly suggest the existence of new sources, like neutralino Dark Matter. The AMS-02 experiment, on board of ISS for a long duration mission (3 years), thanks to its large acceptance (˜ 0.5 m2 sr) and its good particle identification will be able to push down the current upper limit on the antideuteron flux into the region where some new physics effects are expected. We will report on the results of a detailed study, using Monte Carlo simulation, where the AMS-02 sensitivity for antideuterons has been estimated as of 5X10ˆ-7 (mˆ2 sr sec)ˆ-1 in the kinetic energy range between 0.2 and 1 GeV/n.

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

AMS Collaboration

Summary

Reference

Proceedings of the 30th International Cosmic Ray Conference; Rogelio Caballero, Juan Carlos D'Olivo, Gustavo Medina-Tanco, Lukas Nellen, Federico A. Sánchez, José F. Valdés-Galicia (eds.); Universidad Nacional Autónoma de México, Mexico City, Mexico, 2008; Vol. 4 (HE part 1), pages 765-768

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