

Abstract Submitted
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Measurements of Hydrogen and Helium Isotopes with the BESS-Polar II Instrument NICOLAS PICOT-CLEMENTE, Institute for Physical Science and Technology, University of Maryland, BESS-POLAR COLLABORATION — The Balloon-Borne Experiment with a Superconducting Spectrometer (BESS-Polar II) flew successfully over Antarctica for 24.5 days in December 2007 through January 2008 during a period of minimum Solar activity. BESS-Polar II is configured with a solenoidal superconducting magnet and a suite of precision particle detectors. It can accurately identify hydrogen and helium isotopes among the incoming cosmic-ray nuclei with energies from 0.2 up to about 1.5 GeV/n. The long duration of the flight, and the good stability of the detectors increased the number of cosmic-ray events previously recorded with BESS-Polar I by a factor of 5, reaching about 4.7 billion collected particles. This allows to study and measure energy spectrum of hydrogen and helium isotope fluxes with unprecedented precision. The isotope flux and ratio measurements with BESS-Polar II will be presented and compared to previous measurements and theoretical predictions. They provide essential information to constrain cosmic-ray propagation models.

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