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Energy Spectrum Measurements of Cosmic-Ray 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 during 24.5 days in December 2007 through January 2008 during a period of minimum solar activity. The long duration of the flight, and the good stability of the detectors, improved by a factor of 5 the number of cosmic-ray events previously recorded with BESS-Polar I, reaching about 4.7 billion collected particles. Energy spectrum of cosmic-ray hydrogen and helium isotopes have been measured with the instrument from 0.2 to about 1.5 GeV/n, with unprecedented accuracy. These new flux and ratio measurements provide important information to better understand the propagation history of cosmic rays in the Galaxy. The results obtained with the BESS-Polar II instrument will be presented and compared with different propagation models.

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