

ICEHAP Seminar

July 25th, Friday, 2pm, 2014

place: Fac. of Sci. Bldg 2, 3F, room No.308

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"Quest for antimatter in the Universe: The BESS-Polar experiment over Antarctica"

abstract

BESS experiment aims to study elementary particle phenomena in the universe through the precision measurements of various cosmic-ray radiation with a balloon-borne superconducting spectrometer. Based on an ultra thin superconducting solenoid and detector technologies developed for high energy physics experiment, it realized large geometrical acceptance, precise momentum measurement, and redundant particle identification, which are essential for precision measurement and/or search of rare cosmic-ray species such as antiproton, antideuteron and antihelium. The BESS experiments have been carried out mainly in northern Canada 11 times since its first flight in 1993. The last two flight in 2004 and 2007/8 were performed as longduration flights over Antarctica (BESS-Polar I and II). The BESS-Polar II enabled cosmic-ray observation for about a month at the solar minimum period. In this seminar, brief history of BESS experiment and recent highlight results of antiparticle search will be presented.