Pa-005

Room: C102

Observation of cosmic ray antiprotons by BESS

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The BESS detector is a balloon-borne spectrometer with a superconducting solenoid, a three-dimensional tracking system, a time-of-flight hodoscope and an aerogel Cherenkov counter. It has a large geometrical acceptance and is capable of detecting rare cosmic ray particles such as low energy antiprotons with unprecedented sensitivity. Since 1993 the apparatus has been launched annually to the top of the atmosphere in northern Canada where the magnetic latitude is high. We have observed a peak in the energy spectrum at 2 GeV, characteristic of secondary antiprotons, based on ~500 antiprotons detected so far. It has been shown that the idea of cosmic ray propagation mechanism is basically correct. In this talk, the BESS detector is introduced and recent results from BESS will be presented.

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