

## **BESS-POLAR LONG DURATION FLIGHTS IN ANTARCTICA**

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A new long-duration balloon payload is being developed for flights in Antarctica. Known as BESS-Polar, it aims at extremely sensitive measurement of low energy antiprotons to search for any novel primary origin, and at the same time to study the cosmic-ray propagation model. The search for cosmic-ray anti-deuterons is anticipated with a similar objective. The search for antihelium is fundamental to study baryon asymmetry/symmetry in the Universe. The BESS experiment, having an excellent rigidity resolution, and large geometrical acceptance, will maximize the advantage of long duration flights in Antarctica where the rigidity cut-off is below the lower limit of our detection ability. A more compact and thin superconducting magnet spectrometer is being developed to maximize the BESS-Polar scientific return. The progress and further plan will be presented.