

## A SEARCH FOR ANTIHELIUM WITH BESS SPECTROMETER

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We have searched for antihelium nuclei in cosmic rays using the data obtained from balloon flights of the BESS magnetic spectrometer, flown in 1999 and 2000 at Lynn Lake, Canada. The search is mainly based on track quality selection and rigidity analysis and on the time-of-flight and  $dE/dx$  measurements of the scintillation counter hodoscope. No events were observed in the energy range from 1 to 14 GV. Combined with the data collected in the previous flights in 1993 through 2000, a new upper limit for the ratio of  $\bar{H}e/He$  at the top of the atmosphere has been obtained to be  $8 \times 10^{-7}$  or smaller after correcting for the interactions in the air and in the instruments.