A MEASURE OF ^{10}BE/^{9}BE RATIO ABOVE 1 GEV/NUCLEON: RESULTS FROM THE 1998 FLIGHT OF ISOMAX

G.A. de Nolfo (1), L.M. Barbier (1), M. Bremerich (3), E.R. Christian (1), A.J. Davis (2), S. Geier (2), H. Göbel (3), S.K. Gupta (1), T. Hams (3), M. Hof (3), W. Menn (3), R.A. Mewaldt (2), J.W. Mitchell (1), S.M. Schindler (2), M. Simon (3) and R.E. Streitmatter (1)
(1) Laboratory of High Energy Astrophysics, NASA/GSFC, Greenbelt, MD 20771, USA, (2) Space Radiation Laboratory, California Institute of Technology, Pasadena, CA 91125, USA, (3) Fachbereich Physik, Universität Siegen, 57068 Siegen, Germany.
georgia@cosmicra.gsfc.nasa.gov/Fax: 1-301-286-1682

The Isotope Magnet Experiment, ISOMAX, was a balloon-borne instrument designed to measure the isotopic composition of the light elements in cosmic rays ($3 \leq Z \leq 8$), with a particular emphasis on the measurement of the radioactive isotope ^{10}Be. ISOMAX, flown in August 1998 from Lynn Lake, Manitoba, Canada, measured isotope mass with excellent resolution by combining velocity measurements from a time-of-flight (TOF) system and two Cherenkov detectors with magnetic rigidity (charge/momentum) measurements from the magnetic spectrometer. Velocity from the TOF can be used to resolve isotopes from 0.2 GeV/nucleon to just above 1 GeV/nucleon. The Cherenkov counters employed silica-aerogel radiators with indices of refraction n=1.14, corresponding to an energy threshold of $\sim$1 GeV/nucleon. Thus, the velocity measurement from the Cherenkov counters complements and extends the energy range covered by the TOF. We discuss improvements to the mass resolution above Cherenkov threshold and present results for the ^{10}Be/^{9}Be ratio as well as ^{7}Be/^{9}Be ratio in the energy range covered by the Cherenkov counters (1.1-2.0 GeV/nucleon).