



Contribution ID: 814

Type: **Poster contribution**

## Analysis of GCR Spectra and Composition Using Penetrating Particle Data from the CRIS Instrument on ACE

*Saturday, August 1, 2015 3:30 PM (1 hour)*

The Cosmic Ray Isotope Spectrometer (CRIS) on NASA's Advanced Composition Explorer (ACE) spacecraft has been making precise measurements of cosmic-ray elemental and isotopic composition and energy spectra for nearly 18 years. This instrument uses the  $dE/dx$  versus total energy technique to identify nuclei that stop in thick stacks of silicon solid-state detectors and to measure their energy. The energy range covered for these stopping particles extends up to  $\sim 280$  MeV/nuc for O and  $\sim 570$  MeV/nuc for Fe. We have developed a new technique for identifying particles that penetrate the entire detector stack that relies on a combination of the total energy deposited in the stack and the change of  $dE/dx$  from the front to the back of the stack. This technique allows us to extend energy spectra for cosmic-ray elements to higher energies and can be used for bridging the energy gap between the CRIS stopping-particle spectra and measurements made in low-Earth orbit by instruments such as HEAO-C2, PAMELA, and AMS-02. We will describe the technique, show some applications to extending the energy limit of the CRIS spectra, and discuss the limitations on the energy coverage that can be achieved.

### Collaboration

– not specified –

### Registration number following "ICRC2015-I"

703

**Primary author:** WIEDENBECK, M. (JPL/Caltech)**Co-authors:** CUMMINGS, A. (Caltech); DAVIS, A. (Caltech); LABRADOR, A. (Caltech); CHRISTIAN, E. (NASA/GSFC); STONE, E. (Caltech); DE NOLFO, G. (NASA/GSFC); ISRAEL, M. (Washington Univ.); LESKE, R. (Caltech); MEWALDT, R. (Caltech); VON ROSENVINGE, T. (NASA/GSFC); BINNS, W. (Washington Univ.)**Presenter:** WIEDENBECK, M. (JPL/Caltech)**Session Classification:** Poster 2 CR**Track Classification:** CR-EX