30th International Cosmic Ray Conference



Contribution ID : 260

Type : Oral

Space weather diagnosis using cosmic rays: observation with a global network of cosmic ray muon detectors

Abstract content

The galactic cosmic ray (GCR) intensity often shows a dramatic variation responding to the arrival of interplanetary disturbances at the Earth. Aiming to observe such a variation with muon detectors, we constructed a prototype network of multidirectional detectors in March 2001 by installing a small detector in Brazil in addition to two existing detectors in Japan and Australia. By March 2006, the network was upgraded by expanding the Brazilian detector in size and also by putting an additional detector in operation at Kuwait City in Kuwait. This new global network, currently consisting of four detectors at Nagoya (Japan), Hobart (Australia), Sao Martinho (Brazil) and Kuwait City (Kuwait), can continuously monitor the GCR intensity in a total of 60 directional channels covering almost the entire sky and can precisely measure the variation of the GCR streaming separately from the variation of the GCR density. In this paper, we summarize results derived from observations using the prototype network and also report on initial performance of the new global network.

If this papers is presented for a collaboration, please specify the collaboration

Summary

Reference

Primary author(s) : Prof. MUNAKATA, Kazuoki (Physics Department, Faculty of SCience, Shinshu University)

Co-author(s) : FUSHISHITA, Akira (Department of Physics, Shinshu University, Matsumoto 390-8621, Japan.); NARUMI, Takuya (Department of Physics, Shinshu University, Matsumoto 390-8621, Japan.); CHIBA, Tatsuo (Department of Physics, Shinshu University, Matsumoto 390-8621, Japan.); YA-SUE, Shin-ichi (School of General Education, Shinshu University, Matsumoto 390-8621, Japan.); KATO, Chihiro (Department of Physics, Shinshu University, Matsumoto 390-8621, Japan.); KATO, Chihiro (Department of Physics, Shinshu University, Matsumoto 390-8621, Japan.); KATO, Chihiro (Department of Physics, Shinshu University, Matsumoto 390-8621, Japan.); KATO, Chihiro (Department of Physics, Shinshu University, Matsumoto 390-8621, Japan.); KUWABARA, Takao (Bartol Research Institute and Department of Physics and Astronomy, University of Delaware, Newark, DE 19716, USA.); BIEBER, John (Bartol Research Institute and Department of Physics and Astronomy, University of Delaware, Newark, DE 19716, USA.); EVENSON, Paul (Bartol Research Institute and Department of Physics and Astronomy, University of Delaware, Newark, DE 19716, USA.); Delaware, Newark, DE 19716, USA.); EVENSON, Paul (Bartol Research Institute and Department of Physics and Astronomy, University of Delaware, Newark, DE 19716, USA.); EVENSON, Paul (Bartol Research Institute and Department of Physics and Astronomy, University of Delaware, Newark, DE 19716, USA.); EVENSON, Paul (Bartol Research Institute and Department of Physics and Astronomy, University of Delaware, Newark, DE 19716, USA.); EVENSON, Paul (Bartol Research Institute and Department of Physics and Astronomy, University of Delaware, Newark, DE 19716, USA.); EVENSON, Paul (Bartol Research Institute and Department of Physics and Astronomy, University of Delaware, Newark, DE 19716, USA.); EVENSON, Paul (Bartol Research Institute and Department of Physics Astronomy, University of Delaware, Newark, DE 19716, USA.); EVENSON, Paul (Bartol Research Institute Astronomy, University Astronomy, University Astronomy, University

USA.); DULDIG, Marcus (Australian Government Antarctic Division, Kingston, Tasmania 7050, Australia); HUMBLE, John (School of Mathematics and Physics, University of Tasmania, Hobart, Tasmania 7001, Australia.); SCHUCH, Nelson (Southern Regional Space Research Center, PB-5021, 97110-970 Santa Maria, RS, Brazil.); SILVA, Marlos (National Institute for Space Research, PB-515, 12201-970 Sao Jose dos Campos, SP, Brazil.); DAL LAGO, Alisson (National Institute for Space Research, PB-515, 12201-970 Sao Jose dos Campos, SP, Brazil.); SABBAH, Ismail (Department of Physics, Faculty of Science, Kuwait University, Kuwait City, Kuwait.); FUJII, Zenjirou (STE lab., Nagoya University, Nagoya 464-8601, Japan)

Presenter(s) : Prof. MUNAKATA, Kazuoki (Physics Department, Faculty of SCience, Shinshu University)

Session Classification : SH 3.6

Track Classification : SH.3.6