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Measurement of Cosmic Ray Neutron Spectra in the Energy Region of 20-200 MeV at the Summit of Mauna Kea and Several Different Altitudes

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Abstract content

Nowadays, the information on the flux of cosmic ray neutrons has become very important for the computer technology. Since the reduction of LSI (large scale integrated circuit) scaling proceeds, the effect of cosmic ray neutrons becomes significant. Neutrons hit the LSI of the computer and make pseudo signals and false data. This phenomenon is known as the soft error of the computer. The soft error is defined as spontaneous change of the digital information in the computer due to "radiation effects". For evaluating the reliability of computer systems, the accurate estimation of the soft error rate has become essential. In this purpose, the accurate observation of the cosmic ray neutron spectra in the energy region up to several hundreds of MeV has been anticipated. In the conference, we will report the energy spectra of neutrons in the energy range of ca. 20 MeV - 200 MeV at various altitudes including Mauna Kea, Hawaii (4200 m) and Mt. Norikura, Japan (2770 m) and at the sea level. As far as we know, these are quite important data to have measured the neutron spectra by the detector that can measure the energy of neutrons.

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

Summary

Reference

Proceedings of the 30th International Cosmic Ray Conference; Rogelio Caballero, Juan Carlos D'Olivo, Gustavo Medina-Tanco, Lukas Nellen, Federico A. Sánchez, José F. Valdés-Galicia (eds.); Universidad Nacional Autónoma de México, Mexico City, Mexico, 2008; Vol. 1 (SH), pages 757-760

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