Contribution ID : **240** Type : **Oral**

Variation of C-14 concentrations of single-yr tree rings at the rapid change in 2600-yrBP

Saturday, 7 July 2007 10:54 (0:12)

Abstract content

C-14 concentrations of single-yr tree rings indicate solar modulations of cosmic rays such as 11-yr solar cycle. Old tree rings are a powerful tool to detect the variations of cosmic-rays in past time. From C-14 dating, the calendar age of the Choukai Jindai cedar in Japan (39°N) was ranged in from 2757 to 2437 cal BP with 320 tree rings. According to IntCal04 which is the standard internationally recommended radiocarbon calibration data set, a rapid change of the C-14 concentrations is seen in 50 years in 2650 to 2600 cal BP by calendar year. In order to investigate the structure in detail, we have measured the C-14 concentrations of single-yr tree rings using the Choukai Jindai cedar during the 50 years, because the data set of IntCal04 was for 5- year span. The C-14 of single-yr tree rings have been measured with the highly accurate liquid scintillation counting system with 0.2% accuracy synthesizing a large quantity of 5.3 g benzene for each alpha cellulose sample produced from tree rings. The measured C-14 concentrations showed a rapid change with the decreasing rate of 0.8% for 2 years. We report the structure of the C-14 variation.

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 673-676

Primary author(s) : Ms. TAKAHASHI, Yui (Department of Physics Yamagata University)

Co-author(s) : Ms. SUZUKI, Kayo (Department of Physics Yamagata University); Mr. SATOH, Taiichi (Department of Physics Yamagata University); Mr. KORIYAMA, Takeshi (Department of Physics Yamagata University); Dr. GUNJI, Shuichi (Department of Physics Yamagata University); Dr. TOKANAI, Fuyuki (Department of Physics Yamagata University); Prof. SAKURAI, Hirohisa (Department of Physics Yamagata University)

Presenter(s) : Ms. TAKAHASHI, Yui (Department of Physics Yamagata University)

Session Classification : SH 3.6

Track Classification : SH.3.6