

Research of annual cosmic ray events using ^{10}Be in the Dome Fuji ice core II

*Fusa Miyake¹, Kazuho Horiuchi², Hirohisa Sakurai³, Kimiaki Masuda¹, Hideaki Motoyama⁴, Hiroyuki Matsuzaki⁵, Yuko MOTIZUKI⁶, Kazuya Takahashi⁶, Yoichi Nakai⁶

1. Institute for Space-Earth Environmental Research, Nagoya University, 2. Graduate School of Science and Technology, Hirosaki University, 3. Faculty of Science, Yamagata University, 4. National Institute of Polar Research, 5. MALT, The University Museum, The University of Tokyo, 6. RIKEN

Cosmogenic nuclides such as ^{14}C and ^{10}Be are produced by incoming cosmic rays and therefore their concentrations in natural archive samples record the past cosmic ray intensities.

It has been reported rapid ^{14}C increases in tree-rings for the periods AD 775, AD 994, 660 BC, 3371 BC and 5480 BC. Although it has been proposed that an origin of these events relates to solar energetic particles, information of production ratio between different nuclides are needed to determine the origin. As for the AD 775 and the AD 994 cosmic ray events, increments of concentrations in ^{14}C (tree-rings), ^{10}Be and ^{36}Cl (ice cores) were detected, and it has been reported that the origin of the events is not contradictory to extreme Solar Proton Event.

In this presentation, we will report the results of quasi-annual ^{10}Be measurements of ice core from Dome Fuji around ca. 660 BC.

Keywords: cosmogenic nuclides, cosmic ray event