樹木年輪から探る過去の大規模SPE

三宅 芙沙 [1]
[1] 名大・ISEE

Investigation of past extreme SPE using tree-rings

Fusa Miyake[1]
[1] ISEE, Nagoya Univ.

Radiocarbon is one of the cosmogenic nuclides, which is produced by cosmic rays in the atmosphere. After the production, ^{14}C is oxidezed rapidly and forms $^{14}CO_2$. Since trees absorbe CO_2 and fix carbon in tree-rings, ^{14}C concentrations in tree-rings would record past cosmic-ray intensities.

Rapid ^{14}C increases in AD 775 and AD 994 were found by measurements of ^{14}C concentrations in tree rings. It is considered that these ^{14}C increases are occurred by a huge input of cosmic-ray particles to the Earth. The most probable explanation of the origin of this cosmic ray input is extreme Solar Proton Events (SPEs). I will discuss a connection of rapid ^{14}C increase events and SPEs, and a search of past ^{14}C increase events.