

A plan of tree-ring isotopic analyses in Japan for SPE searching during the past 5300 years

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Tree-ring isotopic analyses has achieved remarkable technical innovation in recent years, and it's becoming capable of acquisition of high-resolution proxy data for explication of the universe global environment in the past. In this session, we show a plan of the tree-ring isotopic analyses of the Japanese tree during the past 5300 years for exploration range expansion of Solar Particle Event (in the following, SPE).

We established four floating chronologies during about 3700-5300 years ago using dendrochronology (based on ring-width) and radiocarbon dating in Japan. Composition wood samples of these chronologies are very valuable because the wood sample before 3000 years ago is very little in the northeast Asia including Japan.

We're planning oxygen isotope analyses for dendrochronological dating of these samples. Nakatsuka and Kimura has been building oxygen isotope master-chronology using the buried forest and the archeological woods, which has reached until about 4300 years ago recently. Our floating chronologies are overlapped about 600 years this master-chronology. Therefore when using oxygen isotope data for a parameter of the cross-dating, we expect a possibility that date of our chronology is decided.

We use sample to which a calendar date was decided for radiocarbon measurement. We get the proxy data which reconstructs solar activity in the past 5300 years by this measurement and consider the periodicity of SPE.

Keywords: tree-rings, oxygen isotopic ratio, SPE