

A35a **Diagnosis of modulation in an Antarctic ice core oxygen isotope record**

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Oxygen isotope ratio ($^{18}\text{O}/^{16}\text{O}$) record obtained from ice cores is a well-established temperature proxy in glaciology. Oscillation in such records has often been argued in relation with solar activity cycles. However, no consensus has still been obtained on the nature of the oscillation. Here we investigate the oscillation found in an oxygen isotope ratio depth profile obtained in a shallow ice core drilled in 2001 at Dome Fuji station, Antarctica, to gain more insight into the temperature–solar cycle correlation in the past.

We will report our result of time series analyses to the measured oxygen isotope ratio variations, in particular paying our attention on uncertainty in determination of the age of the ice core. We have two sets of time series; the first one is analyzed at NIPR (National Institute of Polar Research) with temporal resolution of about 5 years for the past 1900 years, and the second obtained at RIKEN very recently with temporal resolution of about 0.8 year for the past 200 years. A preliminary analysis of the former series shows ~ 200 year periodicity, which is close to that known as a solar period.

We note that ice cores obtained at Dome Fuji are very unique, because they contain much more information on conditions in the stratosphere rather than troposphere than any other ice cores recovered from other locations in either hemisphere. Considering this, we will also discuss possible mechanism to cause oscillation in oxygen isotope records in Dome Fuji ice cores.