Japan Geoscience Union Meeting 2013
(May 19-24 2013 at Makuhari, Chiba, Japan)

ACC33-12 会場:105 時間:5 月 23 日 12:00-12:15

An updated chronology and inference of climate evolution for the GISP2 ice core from Summit, Greenland

An updated chronology and inference of climate evolution for the GISP2 ice core from Summit, Greenland

Jessica M. D. Lundin[1], Ralf Greve[2*], Sune O. Rasmussen[3], Inger K. Seierstad[3], Edwin D. Waddington[1]
Jessica M. D. Lundin[1], Ralf Greve[2*], Sune O. Rasmussen[3], Inger K. Seierstad[3], Edwin D. Waddington[1]

[1]Department of Earth and Space Sciences, University of Washington, Seattle, USA, [2]Institute of Low Temperature Science, Hokkaido University, Sapporo, Japan, [3]Centre for Ice and Climate, University of Copenhagen, Copenhagen, Denmark
[1]Department of Earth and Space Sciences, University of Washington, Seattle, USA, [2]Institute of Low Temperature Science, Hokkaido University, Sapporo, Japan, [3]Centre for Ice and Climate, University of Copenhagen, Copenhagen, Denmark

Accurate chronologies are paramount for properly assessing the timing of past climate events. The GISP2 ice core has been updated to the Greenland Ice Core Chronology (GICC05) for 840 sparse volcanic tie points. Using the thickness evolution for the GISP2 site from the three-dimensional dynamic/thermodynamic ice sheet model SICOPOLIS (sicopolis.greveweb.net), we determine a more continuous GISP2 chronology. The associated accumulation-rate history is determined for a suite of thickness reconstructions. The implications of this work include aligning the GISP2 ice core chronology and climate record with other Greenland ice cores (NEEM, NGRIP, and GRIP), improving our understanding of the Arctic climate from a suite of deep ice cores. Improving the GISP2 Greenland chronology has implications for both polar regions. Antarctic ice cores (Byrd, Siple) have been dated from the GISP2 record through inflection points in the well-mixed methane record.

キーワード: Greenland, Ice sheet, Ice core, Climate change, Modeling
Keywords: Greenland, Ice sheet, Ice core, Climate change, Modeling