

MEETING

Toward a Better Understanding of Climate of the Past Million Years

*Quaternary Climate: From Pole to Pole—EPICA Open Science Conference
Venice, Italy, 10–13 November 2008*

The European Project for Ice Coring in Antarctica (EPICA) has provided unique paleoclimatic data and is now widely recognized and cited in hundreds of scientific papers. EPICA is a multinational project that has successfully drilled and analyzed two Antarctic ice cores to bedrock. The first one, at Dome C (75°06'S, 123°21'E, 3233 meters above sea level, 3259.7 meter core length), has yielded a complete stratigraphically ordered sequence covering the past 800,000 years, almost doubling the length of previous Antarctic records (Vostok). The exceptional similarity of the Antarctic temperature and carbon dioxide (CO₂) records highlights the likely role of the Southern Ocean in the carbon cycle, while other trace gas and chemical profiles show the close coupling between different aspects of the Earth system. The second EPICA core, in Dronning Maud Land (75°00'S, 00°04'E, 2892 meters above sea level, 2774.2 meter core length), has provided a very high resolution record of a complete glacial cycle in the Atlantic sector, confirming theoretical predictions regarding the coupling of the two hemispheres during millennial-scale climate changes. In this ice core, Antarctic counterparts were found to each of the rapid Dansgaard-Oeschger climate change events prominent in Greenland and other Northern Hemisphere records of the glacial period; from Dome C data it appears that such events may have occurred in each previous glacial period.

The EPICA 2008 Open Science Conference brought together more than 150 scientists to highlight the progress made in understanding climate variability through the interglacial and glacial periods of the past million years. Participants contributed and discussed exceptional paleoclimate records from the marine, terrestrial, and cryospheric realms, and presented insights from topics such as paleoclimate modeling

and glaciology. The goals of the meeting were to better integrate international research groups in the different fields that study the climate of the past million years and to bring together researchers from different backgrounds. Emphasis was placed on how precise and accurate past climate reconstructions can contribute to a better understanding of possible future scenarios. EPICA 2008 covered the following themes: climate of the last million years, forcings and feedbacks, past interglacials; thermohaline circulation, methods for paleoclimate reconstruction, ice instabilities and sea level, and causes for glacial/interglacial climate change.

A special focus concerned the reliability of the data and the dating of different archives. Attendees recognized that

synchronization of records from different archives (marine cores, ice cores, speleothems) is a prerequisite to investigating processes in the climate system through the analysis of paleoclimatic data. The role of the Southern Ocean in the regulation of atmospheric CO₂ at orbital timescales over the past 1 million years was discussed from a combined marine-terrestrial perspective, highlighting the fundamental importance of a multidisciplinary approach to paleoclimate studies. The dynamics of glacial and interglacial periods, abrupt climatic changes, as well as the links between temperature proxies and sea level changes, were also duly debated at the conference, considering the forcing factors and feedbacks.

For additional information about the conference or to receive the book of abstracts, contact the authors or visit <http://www.epica2008.eu>. A special issue of *Quaternary Science Reviews* is planned for summer 2009.

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USU's interdisciplinary water conference, the
5th Spring Runoff Conference

together with the

14th Intermountain Meteorology Workshop

**Climate Change and the Intermountain
West: Downscaling the Future**

Abstract Deadline: March 6, 2009

Invited speakers include:

Cliff Dahm • Lead Scientist, CALFED Bay-Delta Program
Daniel McCool • University of Utah, Political Science Department
Brian McInerney • National Weather Service
Linda Mearns • National Center for Atmospheric Research (NCAR)
Thomas Reichler • University of Utah, Department of Atmospheric Sciences
Andrew Wilcox • University of Montana, Department of Geosciences
Mark Williams • Institute of Arctic and Alpine Research and
Department of Geography, University of Colorado, Boulder

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