

HOLIVAR2006 Open Science Meeting: Natural Climate Variability and Global Warming

Aurel PERŞOIU*

Department of Geology, University of South Florida, 4202 E. Fowler Ave., Tampa, FL 33620 USA
"Emil Racoviţă" Institute of Speleology, Clinicilor 5, Cluj Napoca, 400006, Romania

Global warming is one of the most actual challenges for the international scientific community, stakeholders and ultimately human society as a whole. In the context of recent climate changes, our understanding of the climate of the past two millennia became more important, as the changes we witness can be placed in this longer-term context, helping us decipher both natural and anthropogenic forcing on the climate system.

In this context, the University College London (UCL), hosted between 12 and 15 of June 2006 the **HOLIVAR2006 Open Science Meeting**, entitled "Natural Climate Variability and Global Warming". The meeting was organized by the *Environmental Change Research Centre, UCL*, and supported by the *European Science Foundation* and *IGBP-PAGES*. The meeting was co-ordinated by the HOLIVAR Science Steering Committee, led by dr. Rick Battarbee (UCL), while dr. Heather Binney ensured the local co-ordination.

The meeting was organized as a series of four thematic sessions, each including keynote lectures followed by poster sessions, and a concluding panel discussion. The presentations focused on natural variability of the Holocene climate at different time scales, as well as on the role played by both natural processes and human activity on global warming.

The themes of the four sessions were *Millennial Time Scales*, *Decadal to Centennial Time Scales*, *Climate Variability in the Last 2000 Years* and *Rapid Hydrological Change*. The topics of the keynotes covered a large variety of subjects, such as *Paradigms and problems of Holocene climate research* (J. Birks), *Climate modeling of the Holocene* (P. Valdes, M. Crucifix, H. Goose), *Holocene climate variability* (E. Jansen, J. Beer, M. Mann, B. van Geel), *future climate change* (R. Bradley).

Each section's keynotes were followed by an extensive poster session, focusing on climate reconstruction using different proxies (stable isotopes in ice cores, speleothems and lake sediments, tree rings, pollen in peat bogs), documentary and instrumental records, climate forcing, climate model development and inter-comparison, climate-model comparison, climate-environment-human society interactions etc.

The conclusions of the meeting were drawn during a panel discussion, where the participants were able to put questions to a panel of experts that included: Ray Bradley (Climate System Research Center, University of Massachusetts, MA), Gavin Schmidt (NASA Goddard Institute for Space Studies, Columbia University, NY), Catherine Pearce (Friends of the Earth), Chris Mottershead

(British Petroleum), Heike Langenberg (Nature) and Chris Sear (Climate and Stratospheric Ozone Science, Global Atmosphere Division, Defra).

Both posters and panel discussions concentrated mainly on the past 2000 years of the Holocene, this being considered representative for the natural climate variability of the past 150 years, in the absence of human impact (Jones and Mann, 2004).

Anthropogenic forcing of recent climate change was the strongest subject of debate, involving scientists, policy makers, spokesmen of both industry and NGOs.

The discussions revealed the existence of two distinct groups among scientists: those who accept that global warming is a consequence of human activities (R. Bradley, M. Mann, G. Schmidt, H. Goose), and skeptics, that proclaim the role of natural variability of the climatic system as being responsible for the warming witnessed in the past hundred years (B. van Geel, D. Sonechkin). However, all participants agreed that global warming is a certainty of the recent past, as seen from both direct temperature measurements and proxy data (Fig. 1).

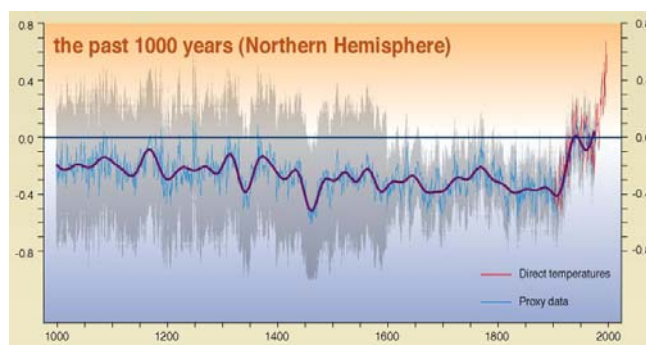


Fig. 1. Departures of temperature from the 1961-1990 average (after Houghton et al., modif.).

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