



## **RESOLuTION – Rapid climatic and environmental shifts during OIS 2 and 3 – linking high-resolution terrestrial, ice core and marine archives, presentation of a recent ESF Eurocore project**

S. J. P. Bohncke (1), F. d’Errico (2), K. F. Helmens (3), S. Johnsen (4), T. L. Rasmussen (5), H. Renssen (1), M. F. Sánchez Goñi (6), S. Wastegård (3), B. Wohlfarth (3)

(1) Vrije Universiteit, Faculty of Earth and Life Sciences, Amsterdam, THE NETHERLANDS, (2) Institut de Préhistoire et de Géologie du Quaternaire, Talence, FRANCE, (3) Dept of Physical Geography and Quaternary Geology, Stockholm University, Stockholm, SWEDEN, (4) Department of Geophysics, University of Copenhagen, Copenhagen, DENMARK, (5) Department of Geology, Tromsø University, Norway, (6) Département de Géologie et Océanographie, University Bordeaux 1, Talence, FRANCE

(Barbara@geo.su.se)

Understanding the complex palaeoenvironmental processes associated with the rapid centennial- to millennial-scale climate instabilities (Dansgaard-Oeschger oscillations; Heinrich events) during the last glacial period, is one of the major issues in paleoclimate research. These dramatic changes, seen in ice-core and marine archives, have rarely been recognized on land. The scarcity and fragmentary nature of relevant terrestrial records and the large dating uncertainties prevent detailed, time-synchronous correlations between land, ocean and ice core archives, which are necessary if the role played by each different component of Earth’s environmental system is to be understood.

The recently launched ESF Euroclimate project RESOLuTION will address these issues through studies of high-resolution terrestrial and marine sequences along a N-S and E-W transect to record and document the impact of Dansgaard-Oeschger oscillations and Heinrich events over Europe and the North Atlantic realm and through detailed geochronology and time-synchronous tephra horizons. It will perform transient

simulations with a coupled atmosphere-ocean-vegetation model to simulate realistic Dansgaard-Oeschger stadial - interstadial changes, and use results to model the impact of abrupt climatic changes on land biomass, and Paleolithic populations in Europe. An additional RESOLuTION research goal is that of identifying possible time-lags in the environmental response of Dansgaard-Oeschger climate variability on the Atlantic Ocean and the adjacent European regions. This will contribute significantly to the discussion on underlying mechanisms of sub-orbital climate variability.