



## RESEARCH CONFERENCES

ESF Conference in Partnership with LFUI

### **Mechanisms of Quaternary Climate Change Modes of Variability in the Climate System: Past-Present-Future**

Universitätszentrum Obergurgl (Ötz Valley, near Innsbruck) • Austria  
27 May – 1 June 2012

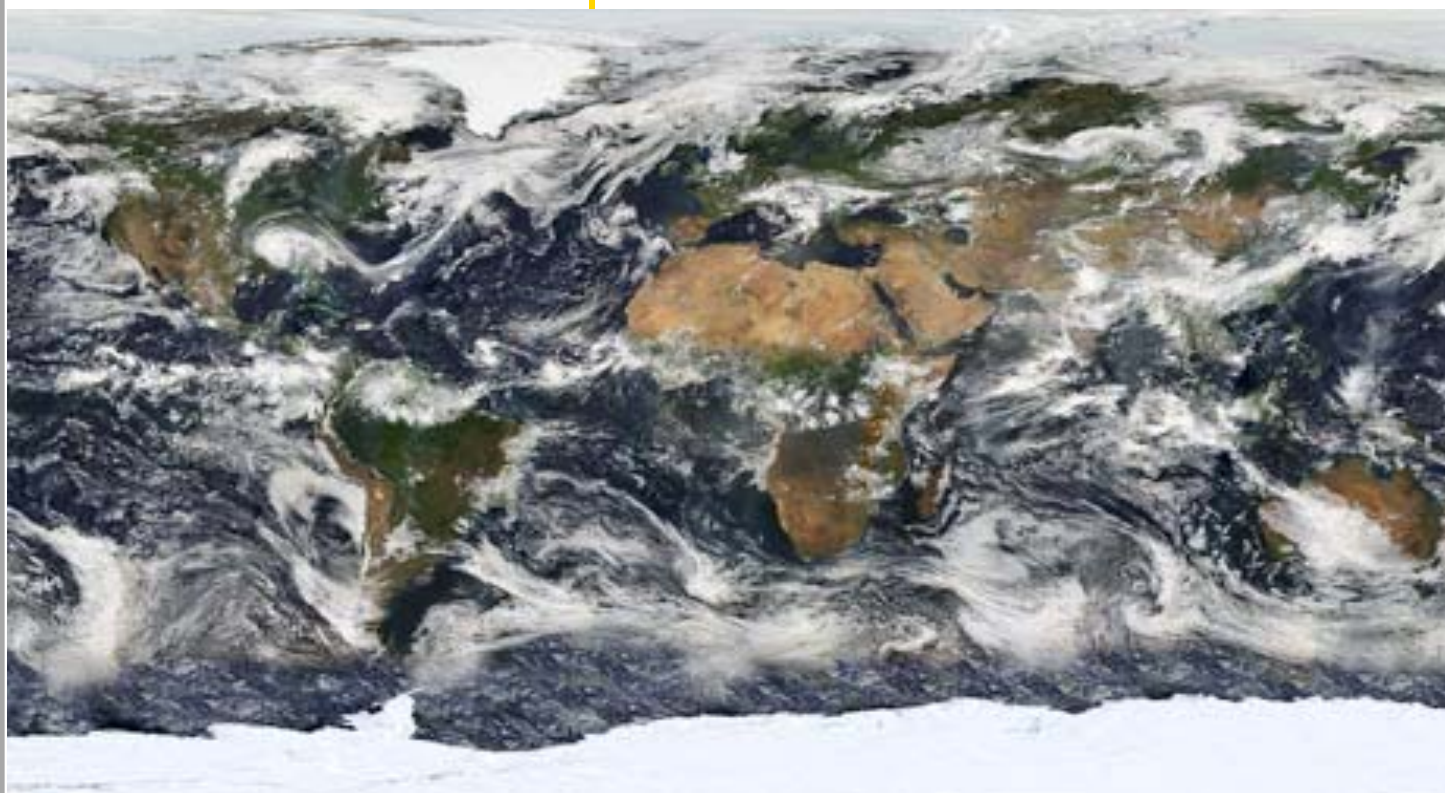
Chair: **Hubertus Fischer**, Climate and Environmental Physics,  
Physics Institute & Oeschger Centre for Climate Change  
Research, University of Bern, CH

Co-/Vice-Chair(s): **Eric. W. Wolff**, British Antarctic Survey,  
Cambridge, UK

<http://www.esf.org/activities/esf-conferences/details/2012/confdetail381.html>

With support from

**EPICA Descartes Prize  
Oeschger Centre for Climate Change Research  
Past Global Changes (PAGES)  
DFG Focus Program INTERDYNAMIK**



# Preliminary Programme

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## Scope

The ongoing climate warming requires a detailed understanding of global and regional climate variations and forecasting of their future changes using climate models. These changes pertain not only to the average global warming but also to changes in regional climate, circulation patterns and their temporal variability. To decrease the uncertainty in these model predictions, climate models have to be validated using paleoclimate data as provided by natural climate archives. Spatially representative climate modes and teleconnection patterns and their temporal variability allow for this validation and represent the vehicles to contrast rather coarsely resolved climate models to point-wise paleoclimate data.

Accordingly, the Conference “Modes of Variability in the Climate System: Past-Present-Future” aims at putting together the world’s most renowned scientists in the field of past and future global change and in particular experts in the current operation of modes in the climate system and their past variability. The conference presentations will characterize the mechanisms behind the most important modes and teleconnection patterns in the ocean, atmosphere and on land at all latitudes and their changes in the past in order to improve predictability of climate variability in the future. This includes past and future changes of modes and climate variability as well as feedbacks of those changes in climate modes on biogeochemical cycles that may lead to amplification of climate changes.

## Invited Speakers will include

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- Zhengyu Liu  
University of Wisconsin, USA  
Global teleconnections in the atmosphere and ocean – An overview
- David Thompson  
Colorado State University, USA  
Polar annular modes
- Thomas Felis  
University of Bremen, D  
NAO teleconnections in middle latitudes from coral records
- Matthew England  
University of South Wales, AU  
Links of modes and physical oceanography
- Bette Otto-Bliesner  
NOAA, Boulder, USA  
Deglacial changes of climate modes
- Jerome Chappellaz  
LGGE-CNRS, Grenoble, F  
Climate mode impacts on the global methane cycle
- Fillipo Giorgi  
Abdus Salam International Centre for Theoretical Physics, Trieste, I  
Projections of regional climate changes
- Yongjing Wang  
Nanjing University, China  
Past Hydrological Changes in the Monsoon System?
- Bo Vinther  
University of Copenhagen, DK  
The North Atlantic Oscillation in Greenland
- Rainer Zahn  
University of Barcelona, E  
Southern Ocean circulation modes: Driver or co-driver
- Camille Li  
Bjerkness Center, Bergen, N  
Changes in atmospheric modes during the glacial
- Amaelle Landais  
LSCE-CNRS, Paris, F  
Impact of rapid climate changes on bioproductivity

- Gerald Haug  
ETH Zurich, CH  
Changes in climate modes – Effects on human societies in the late Holocene
  - Joy Singarayer  
University of Bristol. U.K.  
Transient changes in the climate system
  - Clara Deser  
NCAR, Boulder, USA  
Ocean and sea ice response to climate modes in high latitudes
  - Joellen Russell  
University of Arizona, USA  
Carbon feedback of ocean ventilation changes in past and future climates
  - Johann Jungclaus  
Max Planck Institute for Meteorology, D  
Impacts of rapid changes in the North Atlantic Overturning Circulation
  - Natalie Mahowald  
Cornell University, USA  
The influence of aerosol on the climate system - Present and Past
- Masa Kageyama  
CNRS-LSCE, Paris, F  
Coupling of atmospheric circulation and changes in the AMOC
  - Alexander Tudhope  
University of Edinburgh, U.K.  
Past El Nino variability
  - David Bromwich  
Ohio State University, USA  
Ice sheet influence on extratropical teleconnections in the glacial
  - Christine Klaas  
Alfred Wegener Institute  
The impact on marine ecosystems and the carbon cycle today and in the past
  - Jens Christensen  
DMI, Copenhagen, DK  
Climate modes in the future – risk and effects
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