



## RESEARCH CONFERENCES

ESF-FWF Conference in Partnership with LFUI

# Ocean Controls in Abrupt Climate Change

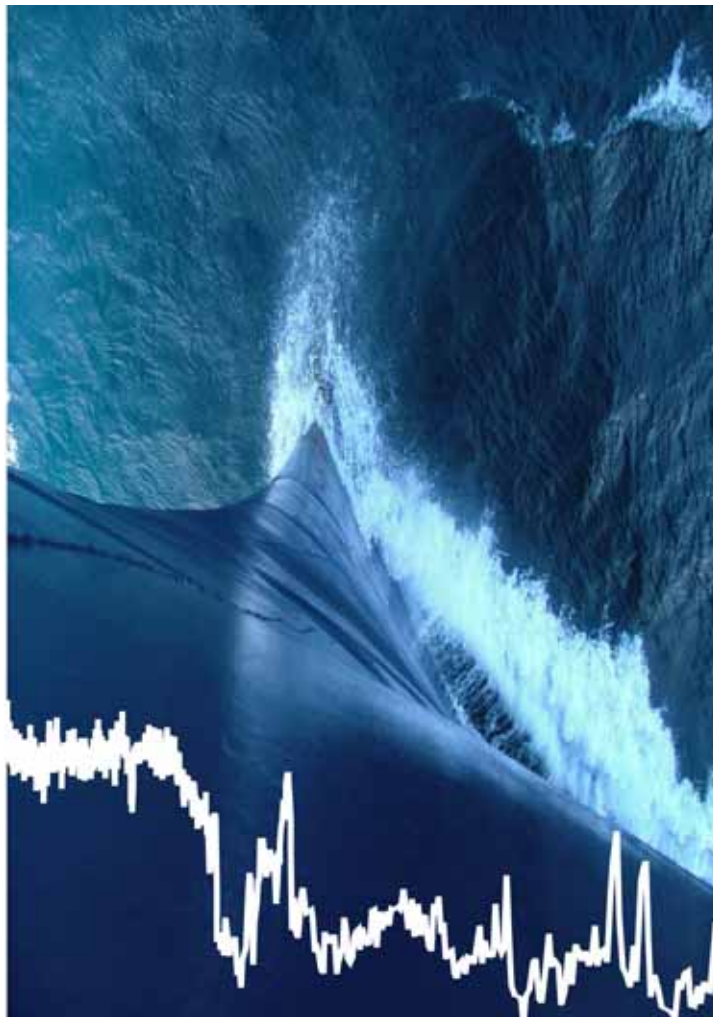
Universitätszentrum Obergurgl (Ötz Valley, near Innsbruck) • Austria  
19-24 May 2007

Chair: **Rainer Zahn**, Universitat Autònoma de Barcelona / ICTA / ICREA, ES  
Co-Chair: **Ian R. Hall**, Cardiff University, School of Earth, Ocean & Planetary  
Sciences, UK

[www.esf.org/conferences/07221](http://www.esf.org/conferences/07221)

With support from

- The International Marine Past Global Change Study (IMAGES)
- Natural Environmental Research Council (UK) (NERC)



# Final Programme

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## Saturday 19 May

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Late afternoon / early evening	Registration at the ESF-RC desk
19.00	Welcome Drink
20.00	Dinner

## Sunday 20 May

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08.45-09.00	Conference Opening
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### Session 1: Ocean Thermohaline Circulation – Linking the Hemispheres

Chair: Nalan Koc, Norwegian Polar Institute, Tromsø, NO

09.00-09.30	<b>Joël Hirschi</b> University of Southampton, UK <i>Monitoring the Atlantic meridional overturning circulation: Advances and challenges</i>
09.30-10.00	<b>Olivier Marchal</b> Woods Hole Oceanographic Institution, US <i>On the use of inverse methods in paleoceanography: Combining noisy data with imperfect models</i>
10.00-10.30	<b>Jean Lynch-Stieglitz</b> Georgia Institute of Technology, Atlanta, US <i>Atlantic MOC variability over the past 20,000 years from ocean margin density reconstructions</i>
10.30-11.00	Coffee Break
11.00-11.30	<b>Regine Röthlisberger</b> British Antarctic Survey, Cambridge, UK <i>Rapid climate change during the last glacial period: Evidence from polar ice cores</i>
11.30-12.00	<b>Catherine Kissel</b> CNRS/CEA, Gif/Yvette, FR <i>Millennial-scale Water Mass Transfer in the Glacial Atlantic Ocean</i>
12.00-13.00	Plenary Discussion
13.00	Lunch
14.30-15.30	Poster Session
15.30-16.00	Coffee Break
16.00-16.15	<b>Jacqueline Flückiger</b> (short talk) ETH Zürich, CH <i>Modeled seasonality and timing of abrupt glacial climate events</i>
16.15-16.30	<b>Eric Galbraith</b> (short talk) Princeton University, US <i>A bipolar nutrient seesaw hypothesis</i>

- 16.30-16.45 **Oleg Saenko** (short talk)  
Canadian Centre for Climate Modelling and Analysis, Victoria, CA  
*Warm climate episodes in the subpolar Atlantic caused by large freshwater fluxes at the ocean boundaries*
- 16.45-17.15 Plenary discussion

## Session 2: Southern Component – Sources and Interocean Exchange

Chair: **Rainer Zahn**, Universitat Autònoma de Barcelona / ICTA / ICREA, ES

- 17.15- 17.45 **Alexander Piotrowski**  
University of Cambridge, UK  
*Emerging perspectives on glacial deep ocean circulation and nutrient storage from Nd isotope records*
- 17.45-18.15 **Ulysses Ninnemann**  
Bjerknes Center for Climate Research, Bergen, NO  
*Circumpolar circulation and AAIW properties during decadal to millennial scale climate change*
- 18.15-19.00 Plenary Discussion
- 19.00 Dinner

### Monday 21 May

## Session 2: Southern Component – Sources and Interocean Exchange - *continued*

Chair: **Rainer Zahn**, Universitat Autònoma de Barcelona / ICTA / ICREA, ES

- 09.00-09.30 **Eelco J. Rohling**  
Southampton University, UK  
*Abrupt sea level changes: sources and consequences*
- 09.30-10.00 **Delia Oppo**  
Woods Hole Oceanographic Institution, US  
*Intermediate water variability during abrupt climate change*
- 10.00-10.15 **Rainer Zahn**  
Universitat Autònoma de Barcelona / ICTA / ICREA, ES  
*Agulhas leakage stimulating the Atlantic meridional overturning circulation*
- 10.15-10.45 Coffee Break

## Session 3: Northern High-Latitude Ocean Dynamics – Abrupt Changes in Ocean Convection

Chair: **Ian R. Hall**, Cardiff University, School of Earth, Ocean & Planetary Sciences, UK

- 10.45-11.15 **Martin Visbeck**  
IFM-GEOMAR, Kiel, DE  
*Interannual to decadal climate variability and change in the Atlantic Sector, a challenge for observations and models*
- 11.15-11.45 **Nalan Koc**  
Norwegian Polar Institute, Tromsø, NO  
*Surface ocean climate variability of the high-latitude North Atlantic through the Holocene*

11.45-12.45	Plenary Discussion
13.00	Lunch
14.30-15.45	Poster Session
15.45-16.15	Coffee Break
16.15-16.30	<b>Paul Halloran</b> (short talk) Oxford University, UK <i>Sedimentary Evidence for Increased Phytoplankton Calcification Over the Last Two Centuries</i>
16.30-16.45	<b>Luke Cameron Skinner</b> (short talk) University of Cambridge, UK <i>Abrupt changes in the North Atlantic heat budget during the last glaciation</i>
16.45-17.00	<b>Joan Grimalt</b> (short talk) IIQAB-CSIC, Barcelona, ES <i>Changes in Iberian margin deep and surface water along the past four climate cycles</i>
17.00-18.00	Plenary Discussion
18.30	Dinner
20.00-21.30	Round Table

## Tuesday 22 May

### Session 4: Cross-Equatorial Transfers and Subtropical Gyre Circulation

Chair: **Susana Lebreiro**, National Institute of Engineering, Technology and Innovation, PT

09.00-09.30	<b>Claire Waelbroeck</b> CNRS-LSCE, Gif/Yvette, FR <i>Abrupt climate and circulation changes in the tropics</i>
09.30-10.00	<b>Isabel Cacho</b> Universitat de Barcelona, ES <i>Climate variability in the Eastern Equatorial Pacific Ocean: High-low latitudes linkages</i>
10.00-10.30	<b>Dirk Nuernberg</b> IFM-GEOMAR, Kiel, DE <i>Gulf of Mexico Loop Current variability, fluvial discharge and Atlantic THC</i>
10.30-11.00	Coffee Break
11.00-11.30	<b>Stefan Mulitza</b> Universität Bremen, DE <i>Response of the tropical Atlantic to Heinrich events and Dansgaard/Oeschger cycles</i>
11.30-11.45	<b>Anders Carlson</b> (short talk) Woods Hole Oceanographic Institution, US <i>Western subtropical Atlantic salinity variability and Atlantic meridional circulation during the last deglaciation</i>
11.45-12.45	Plenary Discussion
13.00	Lunch
Afternoon	Free afternoon
19.00	Get-together & Conference Dinner

## Session 5: Ocean Versus Ice Core Linking

Chair: Catherine Kissel, CNRS/CEA, Gif/Yvette, FR

- 09.00-09.15      **Jinho Ahn** (short talk)  
Oregon State University, Corvallis, US  
*Atmospheric CO<sub>2</sub> and abrupt climate change during the last glacial period: Implication for oceanic link*
- 09.15-09.30      **Nancy Bertler** (short talk)  
Victoria University, Wellington, NZ  
*Atmosphere - ocean interactions from coastal Antarctic ice cores*
- 09.30-10.00      **Elisabeth Michel**  
CNRS-LSCE, Gif/Yvette, FR  
*Southern Ocean variability and ocean circulation during abrupt climate change*
- 10.00-10.30      **Raimund Muscheler**  
Lund University, SE  
*Did the Sun trigger rapid climate changes in the past?*
- 10.30-11.00      Coffee Break

## Session 6: Hierarchical Modelling of Past Climate Variability

Chair: Philippe Huybrechts, Vrije Universiteit Brussel, BE

- 11.00-11.30      **Andreas Schmittner**  
Oregon State University, Corvallis, US  
*Impact of possible future changes in ocean circulation on the marine ecosystem and biogeochemical cycles*
- 11.30-11.45      **Peter Köhler** (short talk)  
Alfred Wegener Institute, Bremerhaven, DE  
*Simulated changes in vegetation distribution, land carbon storage, and atmospheric CO<sub>2</sub> in response to a collapse of the North Atlantic thermohaline circulation*
- 11.45-12.00      **Gregor Knorr** (short talk)  
University of Cardiff, UK  
*Dansgaard-Oeschger oscillations by sea-ice variations: A conceptual model approach*
- 12.00-13.00      Plenary Discussion
- 13.00              Lunch
- 14.30-16.00      Poster Session
- 16.00-16.30      Coffee Break
- 16.30-17.00      **Gavin Schmidt**  
NASA/GISS, New York, US  
*Forward modelling of proxies during abrupt climate change events*
- 17.00-17.30      **Andrej Ganopolski**  
Potsdam Institute for Climate Impact Research, DE  
*The role of the ocean-atmosphere-ice sheet interaction in the abrupt glacial climate changes*

17.30-18.00	<b>Matthias Prange</b> Universität Bremen, DE <i>Advancing the understanding of abrupt climate-change events using models of different complexity</i>
18.00-19.00	Plenary Discussion
19.00	Dinner
20.30-21.30	Plenary Discussion

### Thursday 24 May

## Session 7: Outlook – Future Perspectives and Developments

Chair: Rainer Zahn, Universitat Autònoma de Barcelona / ICTA / ICREA, ES

09.00-09.30	Tba
09.30-10.30	Forward Look Plenary Discussion
10.30-11.00	Coffee Break
11.00-12.00	Forward Look Plenary Discussion
12.30	Lunch & Departure

### Abstracts, Posters & Short Oral Presentations

Abstracts accepted for poster presentation are available on the conference website. Posters will be on display all day, with poster sessions after lunch.