

3rd BI-ANNUAL SYMPOSIUM FUTURE OCEAN

| 13.09. - 16.09.2010

Christian-Albrechts-Universität zu Kiel, Audimax, Kiel, Germany

FIRST CIRCULAR

SYMPOSIUM 2010

September 13 – 16, 2010 - Kiel, Germany

Profound knowledge on the future ocean is essential for the adequate handling of ocean risks and sustainable use of marine resources. The main challenge in this respect is the understanding of ocean changes, both man-made and natural, and its consequences. Detecting and understanding these changes, and linking key aspects of a changing ocean to a full picture are the overarching goals of the 3rd symposium on the Future Ocean.

SCIENTIFIC PROGRAMME

Today's knowledge of the future ocean is addressed and reflected in seven topics from processes at the ocean surface to those starting at the sea-floor; from river-mouths to coral-reefs, from estimating the past to future CO₂ intake capacity to valuing and managing ocean changes economically.

THE FUTURE OCEAN

The **Kiel Cluster of Excellence „The Future Ocean“** is a unique research group in Germany comprising 250 scientists from six faculties of the Christian-Albrechts-University zu Kiel (CAU), the Leibniz Institute of Marine Sciences (IFM-GEOMAR), the Institute for World Economy (IfW) and the Muthesius University of Fine Arts. These interdisciplinary groups comprise marine scientists, earth scientists and economists, as well as medical scientists, mathematicians, lawyers and sociologists to jointly investigate climate and ocean change, to reevaluate the opportunities and risks of global change for the oceans and develop a sustainable system of resource management of the world's oceans and

marine resources. The Cluster of Excellence „The Future Ocean“ is supported within the scope of the Excellence Initiative of the German Research Foundation on the behalf of the German government and the federal states of Germany. For more information see www.ozean-der-zukunft.de

INFORMATION

Venue

Christian-Albrechts-Universität zu Kiel, Audimax
Christian-Albrechts-Platz 2, 24118 Kiel, Germany

Abstract Submission

Please submit your abstract on the FUTURE OCEAN website www.ozean-der-zukunft.de/english/the-network/symposium by May 1, 2010.

Registration

Please register online on the FUTURE OCEAN website. www.ozean-der-zukunft.de/english/the-network/symposium
Registration deadline is September 6, 2010.

Contact

For further questions please contact Emanuel Söding and Kirsten Schäfer at symposium@ozean-der-zukunft.de

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SCIENTIFIC STEERING COMMITTEE

- ▶ Thomas Bosch | Kiel | Germany
- ▶ Gernot Friedrichs | Kiel | Germany
- ▶ Roland von Glasow | Norwich | UK
- ▶ Christoph Heinze | Bergen | Norway
- ▶ Benjamin Horton | Philadelphia, Pa. | USA
- ▶ Gernot Klepper | Kiel | Germany
- ▶ Sebastian Krastel | Kiel | Germany
- ▶ David J. Miller | Townsville | Australia
- ▶ Charles A. Nittrouer | Seattle, Wash. | USA
- ▶ Alexander Proelß | Kiel | Germany
- ▶ Birgit Schneider | Kiel | Germany
- ▶ Ralph Schneider | Kiel | Germany
- ▶ Kerstin Schrottke | Kiel | Germany
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- ▶ Friedrich Temps | Kiel | Germany
- ▶ Athanasios Vafeidis | Kiel | Germany
- ▶ Martin Visbeck | Kiel | Germany
- ▶ Doug Wallace | Kiel | Germany
- ▶ Colin Woodroffe | Wollongong | Australia

MONDAY 13.09.2010

8:00–9:00 Registration

9:00–10:30 Opening

COFFEE BREAK

11:00–12:30 Session 1 | River-Mouth System

J.P.M. Syvitski (Boulder, Colo., USA), C.A. Nittrouer (Seattle, Wash., USA)

RIVER-MOUTH SYSTEMS

River-mouth systems respond in various ways and on different time scales to global change. The style of deposition or erosion at the end of a river course, as well as the final locus of deposition at the sink – all influenced by climate change – have emerged as key to our understanding of coasts and shallow marine sedimentary environment. Enhancing the scientific underpinning will help to improve the success of coastal management and restoration.

LUNCH BREAK

14:00–18:00 Workshops, Poster Sessions, etc.*

18:00 Icebreaker

* Various scientific mini symposia, specialized scientific sessions, workshops and poster session will be announced later.

WEDNESDAY 15.09.2010

9:00–10:30 Session 4 | Chemistry at Marine Interfaces

Michael Grunze (Heidelberg, Germany), Heather C. Allen (Columbus, Ohio, USA)

CHEMISTRY AT MARINE INTERFACES

The sea-surface microlayer influences the ocean-atmosphere coupling as well as the surface chemistry of sea-borne aqueous aerosols by modulating the physical, chemical and biological processes at the interface. Contributions for improving our understanding of the underlying processes are solicited from experimental, numerical modelling, and theoretical groups working in a diversity of fields, e.g., surface science, spectroscopy, chemical kinetics, or environmental chemistry.

COFFEE BREAK

11:00–12:30 Session 5 | The Oceanic CO₂ Sink: From the Past into Future

Sara Mikaloff-Fletcher (Wellington, NZ), Christoph Heinze (Bergen, Norway)

THE OCEANIC CO₂ SINK: FROM THE PAST INTO FUTURE

The ocean has presently taken up roughly 30 % of anthropogenic CO₂. Weathering of CaCO₃ from seafloor sediments will greatly enhance the uptake and CO₂ storage capacity of the ocean. As such the ocean constitutes the ultimate CO₂ sink, having a strong potential of regulating climate and the carbon cycle. Paleo records and present day observations, aligned by models help to reconstruct climate carbon cycle interactions, understand natural fluctuations of the carbonate system, and to give future projections of the behaviour of the oceanic CO₂ sink. Data assimilation, i.e. the use of modern mathematical methods of optimization, is an important tool to increase the reliability of model results.

LUNCH BREAK

14:00–18:00 Workshops, Poster Sessions, etc.*

19:00 Symposium Dinner

TUESDAY 14.09.2010

9:00–10:30 Session 2 | Recent Breakthroughs in Coral research

Terry Hughes, David J. Miller (Townsville, Australia), Virginia Weis (Corvallis, Oreg., USA), Thomas Bosch (Kiel, Germany)

RECENT BREAKTHROUGHS IN CORAL RESEARCH

Understanding corals at a molecular and physiological level and examining potential mechanisms of coral reefs for adaptation and acclimatization to environmental change is in the focus of today's coral research. Coral genomics as well as coral diseases will be addressed in this session.

COFFEE BREAK

11:00–12:30 Session 3 | Sea-level Rise

Anny Cazenave (Toulouse, France), Colin Woodroffe (Wollongong, Australia), Mark Siddall (Bristol, UK)

SEA-LEVEL RISE: PAST, PRESENT AND FUTURE

Sea-level rise (SLR) is one of the most certain consequences of climate change. Potential social and economic impacts are significant but uncertain. Quaternary geologic records enable the quantification of the characteristics of past rises in sea levels and provide a baseline for predicting future sea levels, while satellite observations and numerical models are employed for quantifying current and future SLR. We invite field- and modelling-based contributions addressing quaternary and ongoing sea-level changes as well as future predictions. We also welcome contributions assessing the potential impacts of accelerated SLR.

LUNCH BREAK

14:00–18:00 Workshops, Poster Sessions, etc.*

THURSDAY 16.09.2010

9:00–10:30 Session 6 | Tracing Tsunami Impacts On- and Offshore

Benjamin Horton (Philadelphia, Pa., USA), Philip Liu (Cornell, N.Y., USA)

TRACING TSUNAMI IMPACTS ON- AND OFFSHORE

Tsunamis are among the largest catastrophic events in the world. They are a major threat to coastal communities and infrastructure. They have been recorded for centuries and numerous investigations have been done concerning their origin, wave distribution and energy release along coastlines. Despite steady advances in research, numerous fundamental questions on the origin, destruction force and risk prediction remain open. The session will be open for all contributions on tsunami generation, tsunami modeling and tsunami impact.

COFFEE BREAK

11:00–12:30 Session 7 | Climate Engineering

Catherine Redgwell (London, UK)

CLIMATE ENGINEERING

„Climate Engineering“ may become an option of last resort if catastrophic climate change takes place and adaptation measures are not sufficient. Research on the risks and opportunities of „Climate Engineering“ should help to be prepared for such an event. Improving our understanding regarding effectiveness and environmental risks of different climate engineering methods requires close interaction among experts from climate physics, biology, oceanography, economics, ethics and law.

LUNCH BREAK

14:00–18:00 Workshops, Poster Sessions, etc.*