Conference Programme

The conference opening is honoured by the presence of H.M. King Carl XVI Gustaf, King of Sweden

We would like to ask all participants to be seated ten minutes before the Opening Ceremony commences.

Sunday, 9 June 2013
16:00 – 18:00 Registration

Monday, 10 June 2013
8:00 – 9:45 Registration
9:50 All participants seated in Conference Hall

Opening Ceremony

Welcome on behalf of the local host and moderation:

10:00

Joakim Langner
Swedish Meteorological and Hydrological Institute (SMHI), Sweden

Welcome addresses:

Lena Häll Eriksson
Director General SMHI

Stefan Carlsson
County Administrative Board Kalmar

Jan Erici
Chair of City Council, Borgholm Municipality, Öland

Ian A. Nicholls
Dean of Faculty of Health and Life Sciences, and Deputy Pro Vice-Chancellor, Linnæus University at Kalmar
Opening Session

Chair: Anna Rutgersson

10:30  BALTEX – 20 years of international and interdisciplinary research for the Baltic Sea region
Anders Omstedt, University of Gothenburg, Sweden

Bringing together the East and West: Joining ideas, people, datasets
Sirje Keevallik, Tallinn University of Technology, Estonia

Challenges for the Baltic Sea region from the HELCOM perspective
Mikhail Durkin, Helsinki Commission, Helsinki, Finland

Climate change in the Baltic Sea region - The BACC Assessments
Hans von Storch, Helmholtz-Zentrum Geesthacht, Germany

A new science and outreach programme for the Baltic Sea region
Markus Meier, SMHI, Sweden

12:00  Lunch

Topic A: Improved understanding of energy and water cycles under changing conditions

Chair: Sirje Keevallik

14:00  BALTEX - 20 years ago and before (special invited talk)
Ehrhard Raschke

14:30  What do we know about the human impact on aerosol cloud-mediated climate processes in the Baltic Region?
Olaf Krüger

14:50  Surface radiation budget of the Baltic Sea from satellite data
Tomasz Zapadka, D. Stoltmann, M. Paszkuta and M. Sokólski

15:10  Long term measurements of the energy balance in the urban area in Łódź, central Poland
Krzysztof Fortuniak, W. Pawlak and M. Siedlecki

15:30  Break
16:00 Contributions of BALTEX towards the understanding of the Earth’s water and energy cycle (solicited)
Lennart Bengtsson

16:30 A new perspective on atmospheric requirements for major inflow events into the Baltic Sea
Semjon Schimanke, C. Dieterich and H.E.M. Meier

16:50 Freshwater outflow of the Baltic Sea and transport in the Norwegian Current: A statistical correlation analysis based on a numerical experiment
Robinson Hordoir, C. Dieterich, C. Basu, H. Dietze and H.E.M. Meier

17:10 Sea ice thickness variability in the Baltic Sea
Jari Haapala, M. Lensu, B.W. An, J. Lehtiranta and I. Ronkainen

19:00 Ice Breaker

Tuesday, 11 June 2013

Topic A (continued):
Improved understanding of energy and water cycles under changing conditions

Chair: Jüri Elken

09:00 Knowledge of the Baltic Sea physics gained during the BALTEX II and related programmes (solicited)
Anders Omstedt, J. Elken, A. Lehmann, M. Leppäranta, K. Myrberg, and A. Rutgersson

09:30 Upwelling dynamics in the Baltic Sea studied by a combined SAR/infrared satellite data and circulation model analysis
Andreas Lehmann, E. Gurova and A. Ivanov

09:50 A statistical approach to coastal upwelling in the Baltic Sea based on the analysis of satellite data for 1990–2009
Kai Myrberg, K. Höflich and A. Lehmann

10:10 Ground-based GPS networks for remote sensing of the atmospheric water vapour content: A review (solicited)
Gunnar Elgered

10:40 Break
Special session: Finalised BONUS+ projects

Chair: Andreas Lehmann

11:10  Advanced modeling tool for scenarios of the Baltic Sea ECOsystem to SUPPORT decision making (ECOSUPPORT, 2009-2011)
Markus Meier and the ECOSUPPORT co-workers

11:30  Baltic-C: Modeling and experimental approaches to unravel the Baltic Sea carbon (CO₂) cycle and its response to anthropogenic changes
Bernd Schneider, A. Omstedt, C. Humborg, J. Pempkowiak, M. Pertillä, A. Rutgersson and B. Smith

11:50  Methane cycling in shallow sediments and the overlying water column of the Baltic Sea: A synopsis of the project BALTIC GAS

12:10  Baltic Way: Towards the use of ocean dynamics for pollution control
Tarmo Soomere

12:30  Lunch

13:30 – 15:30 Poster Session (all topics)
See page 11 of this programme

16:00  Excursion by bus to touristic highlights on Öland including picnic dinner

Parallel to the excursion for conference participants, there will be a presentation of the GeoDome Theatre for the public.

The GeoDome will be presented to conference participants on Wednesday afternoon. For a description of the GeoDome, see page 7 of this programme.
Wednesday, 12 June 2013

Special Session on the Future Programme and International Cooperation

Chair: Benjamin Smith

09:00  Future Earth: Research for Global Sustainability
Martin Visbeck, GEOMAR Helmholtz Centre for Ocean Research Kiel, Germany, Member of the Executive Group of the Future Earth Transition Team

09:20  The GEWEX Hydroclimatology Panel
Jan Polcher, Laboratoire de Météorologie Dynamique, CNRS, Paris, France, GEWEX-GHP Co-Chairman; J. Evans, Climate Change Research Centre, University of New South Wales, Sydney, Australia, GEWEX-GHP Co-Chairman; S. Benedict, International GEWEX Project Office

09:40  Grand Challenges defined for the new programme
Anna Rutgersson, University of Uppsala

10:00  Perspectives for Outreach and Education in the new programme
Marcus Reckermann, International BALTEX Secretariat

10:20  Break

10:50  Open Discussion
Based on the presentation of the morning and during the opening session on Monday, there will be an open discussion on the new programme and its scientific and outreach goals.

12:00  Lunch

Special session: GEWEX Regional Hydroclimate Projects (RHPs)

Chair: Hans-Jörg Isemer

13:00  The Northern Eurasia Earth Science Partnership Initiative (NEESPI) in the past two years
Pavel Groisman, University Corp. for Atmospheric Research at NOAA/NCDC, Asheville, North Carolina, USA; R.G. Lawford, International GEWEX Project Office, Washington D.C., USA

13:20  The La Plata Basin RHP: Rethinking the design of adaptation strategies
E. Hugo Berbery, University of Maryland, Earth System Science Interdisciplinary Center, College Park, Maryland, USA; J.-P. Boulanger, LOCEAN, UMR CNRS/IRD/UPMC, France; E. Gentile, University of Buenos Aires, Argentina; S. Schlindwein, Federal University of Santa Catarina, Florianópolis, Brazil
Topic B:
Analysis of climate variability and change, and provision of regional climate projections over the Baltic Sea basin for the 21st century

Chair: Franz Berger

Part 1: Analysis of climate variability and change

13:40 Climate variability in the Baltic Sea basin over the last 12,000 calendar years: Lessons from the past for the future (solicited)

14:10 Observed changes and variability of atmospheric parameters in the Baltic Sea region during the last 200 years
Anna Rutgersson, J. Jaagus, F. Schenk and M. Stendel

14:30 Spatio-temporal climate variations and trends over the Baltic Sea since 1850
Frederik Schenk and E. Zorita

14:50 Variability and trends in daily minimum and maximum temperatures and in diurnal temperature range in Lithuania, Latvia and Estonia
Jaak Jaagus, A. Briede and E. Rimkus

15:10 Break

Chair: Martin Stendel

15:30 Climate change and local trends in longer air temperature time series of the Baltic region
Andres Tarand

15:50 Sea level variations of the Baltic Sea in response to climate variability for the period 1970-2010
Andreas Lehmann, W. Huneke, K. Getzlaff and K. Myrberg

16:10 Detecting acceleration in long time series of Baltic sea level
Eduardo Zorita and B. Hünicke

16:30 Long-term variations of simulated sediment transport along the eastern Baltic Sea coast as a possible indicator of climate change
Maija Viška and T. Soomere
Presentation of the GeoDome Theatre
The GeoDome Theater of the SMHI provides a comfortable and experiential interface to virtual worlds, enabling participants to collectively and interactively explore a broad range of interdisciplinary subjects across multiple scales of space and time. The fully inflatable GeoDome Theater is a new way to bring scientific data and stories to life in a compelling, interactive, and globally networked immersive virtual environment.

This presentation shall be dedicated to conference participants only. The GeoDome Theatre shall be accessible to the open public on Tuesday afternoon.

Thursday, 13 June 2013

Topic B (continued):
Analysis of climate variability and change, and provision of regional climate projections over the Baltic Sea basin for the 21st century

Chair: Hans von Storch

Part 2: Regional climate projections

09:00 A new generation of regional climate model scenarios for the Baltic Sea area
Erik Kjellström, G. Nikulin, P. Samuelsson and C. Jones (solicited)

09:30 Variations in projections of atmospheric climate change for the Baltic Sea region
Ole Bøssing Christensen and E. Kjellström

09:50 Simulation of present and future climate variability over the Baltic Sea area with the new SMHI atmosphere-ocean-ice coupled model RCA4_NEMO
Shiyu Wang, C. Dieterich and R. Döscher

10:10 How a two-way online coupled model system impacts regional climate simulations
Ha Thi Minh Hagemann, B. Rockel and B. Geyer

10:30 Future climate change A1B scenario downscaling - Results for the Baltic and North Sea
Dimitry V. Sein, U. Mikolajewicz, M. Groeger, E. Maier-Reimer, and D. Jacob

10:50 Break
Chair: Eduardo Zorita

11:20  Introducing the coupled atmosphere-ocean system: COSMO-CLM and NEMO for the North and Baltic Seas  
      Trang Van Pham, J. Brauch, B. Frueh and B. Ahrens

11:40  Consistency of recently observed trends over the Baltic Sea basin with  
      climate change projections  
      Armineh Barkhordarian and H. von Storch

12:00  Projected changes in Baltic Sea upwelling from an ensemble of RCP scenario  
      simulations  
      Christian Dieterich, G. Väli, S. Schimanke and H.E.M. Meier

12:20  Baltic Sea wave conditions under climate change scenarios  
      Nikolaus Groll, B. Hünicke and R. Weisse

12:40  Lunch

Topic C:  
Provision of improved tools for water management, with an emphasis on  
extreme hydrological events and long-term changes

Chair: Joanna Wibig

13:40  From BALTEX research to adaptation to climate change –  
      A Swedish perspective (solicited)  
      Sten Bergström

14:10  The impacts of climate change and nutrient reduction measures on river  
      discharge and nutrient fluxes to the Baltic Sea  
      Chantal Donnelly and B. Arheimer

14:30  Improved tools for river flood preparedness under a changing risk in Poland  
      Zbigniew W. Kundzewicz

14:50  Towards flood assessment over Eurasian watersheds using RCM and river  
      flow routing algorithm  
      Elena Stafeeva and I. Shkolnik

15:10  Estimation of the peak outflow from natural lakes within the Neva River  
      basin  
      Sergey Zhuralev

15:30  Break
Chair: Chantal Donnelly

16:00  Flood frequency on the rivers in the Belorussian part of the Baltic Sea basin and cyclonic activity
       Irina Partasenko and R. Chekan

16:20  Precipitation extremes projections for Poland for the period 2021-2050
       Joanna Wibig

16:40  Simulation of annual maximum runoff in a river catchment with a spatial weather generator and climate change scenarios
       Leszek Kuchar, S. Iwanski, L. Jelonek and W. Szalinska

**Topic D:**
Biogeochemical cycles in the Baltic Sea basin and transport processes within the regional Earth system under anthropogenic influence

Chair: Bernd Schneider

17:00  Land cover-climate interactions in the past for the understanding of current and future climate change: the LANDCLIM project (solicited)
       Marie-José Gaillard, A-K. Tondman, J.O. Kaplan, A. Poska and G. Strandberg

17:30  Modelling the extent of hypoxia and anoxia in the Baltic Sea for the period 1970-2010
       Andreas Lehmann, H.-H. Hinrichsen, K. Getzlaff and K. Myberg

17:50  Regime shifts and trends in the Baltic Sea area: A statistical approach
       Adolf Konrad Stips and M.-J. Lilover

19:00  Conference Dinner

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Friday, 14 June 2013

**Topic D (continued):**
Biogeochemical cycles in the Baltic Sea basin and transport processes within the regional Earth system under anthropogenic influence

Chair: Kai Myrberg

09:00  The role of the terrestrial dissolved organic matter mineralization for the acid-base system of the Baltic Sea (solicited)
       Karol Kulinski, B. Schneider, K. Hammer and D. Schulz-Bull
09:30  Influence of DOM on the CO₂ pressure in the Gulf of Bothnia surface water  
Moa Edman and L.G. Anderson

09:50  Remote sensing algorithms for sea surface CO₂ in the Baltic Sea  
Gaëlle Parard, A. Rutgersson and S.R. Parampil

10:10  Influence of coastal upwelling on the Air-Sea exchange of CO₂ in a Baltic Sea basin  
Maria Norman, S.R. Parampil, A. Rutgersson and E. Sahlée

10:30  Ten years of CO₂ measurements on a cargo ship reveal new insights and knowledge gaps in the Baltic Sea net community production  
Bernd Schneider and B. Sadkowiak

10:50  Break

Chair: Karol Kulinski

11:20  The Submarine Groundwater Discharge as a carbon source to the Baltic Sea  
Beata Szymczycha and J. Pempkowiak

11:40  Modelling the interaction between eutrophication, acidification and climate change in the Baltic Sea  
Anders Omstedt and M. Edman

12:00  Simulations of eutrophication scenarios using the current and an improved version of ERGOM  
René Friedland, T. Neumann and G. Schernewski

12:20  Urban snow and snowmelt runoff inorganic pollution and its impact on the receiving river in the city of Brest, Belarus  
Ina Bulskaya and A. Volchek

12:40  Impact of the emissions of the international sea traffic on the airborne deposition to the Baltic Sea and concentrations at the coastline  
Marke Hongisto

13:00  Closing of the Conference

13:15  Lunch and Farewell
Posters

On display Tuesday through Thursday
Dedicated poster session on Tuesday, 11 June 2013 after Lunch
Poster sequence alphabetically within topics

Topic A:
Improved understanding of energy and water cycles under changing conditions

A1 Different tracks of Mediterranean cyclones towards Europe and their associated precipitation fields in Poland
Jan Degirmendžić

A2 GNSS for global Earth observation: An update from the European coordination action Gfg²

A3 Surface energy balance and exchange of greenhouse gases in Eastern Poland wetland – A new EC site in Biebrza National Park
Krzysztof Fortuniak, W. Pawlak, M. Siedlecki, and M. Zielinski

A4 Snow cover impact on ground freeze-thaw in northern Sweden
Maria Nilsson

A5 A coupled Atmosphere Ice Ocean Model for the Baltic Sea
Thomas Raub, K. Getzlaff, D. Jacob and A. Lehmann

A6 Atmospheric circulation during dry periods in Lithuania
Egidijus Rinkus, J. Kazys, D. Valiukas, G. Stankūnavičius

A7 First long-term ARGO float experiment in the Baltic Sea
Petra Roiha, A. Nummelin, S. Siiriä and T. Purokoski

A8 Snow storage formation specifics for the Neman river basin
Alexander Volchak, N. Sheshko, D. Kostiuk, D. Petrov

A9 Forecasting sea level variations in the northern Baltic Sea with a three-dimensional hydrodynamical model
Antti Westerlund, P. Roiha, L. Tuomi, S. Siiriä, H. Boman

A10 Singularities of turbulent sensible heat flux in urban areas – Łódź case study
Mariusz Zielinski
### Topic B:
**Analysis of climate variability and change, and provision of regional climate projections over the Baltic Sea basin for the 21st century**

| B1 | Dynamics of the Baltic Sea environment under the influence of climate change (A case study of the most important Lithuanian coastal summer resorts)  
*Aldona Baubiniene and R. Morkūnai* |
| B2 | Estimations of social and economic consequences of modern climate change in St. Petersburg and the Leningrad region  
*Irina M. Baykova, N.F. Ivanova and V.L. Marich* |
| B3 | The variability of wind speed and wind direction of mean and extreme winds over the Baltic Sea  
*Svenja Bierstedt, H. von Storch, E. Zorita and B. Hünicke* |
| B4 | ECDS, an infrastructure for Swedish researchers in climate and environment and a source to find interesting data sets  
*Barry Broman, T. Klein, B. Frankenberg, J. Svensson and C. Bennet* |
| B5 | The influence of regional climate change on the local wave climate and the longshore sediment transport at the German Baltic Sea Coast  
*Norman Dreier, C. Schlamkow and P. Fröhle* |
| B6 | Towards a reconstruction of palaeoclimate: Research in the southeast Baltic Sea region during 2011-2013  
*Olga Druzhinina, Y. Kublitsky, D. Subetto and L. Syryh* |
| B7 | Diurnal variability of water vapour in the Baltic Sea region according to NCEP-CFSR and BaltAn65 reanalyses  
*Erko Jakobson, H. Keernik, A. Luhamaa and H. Ohvrl* |
| B8 | Trends in tropospheric humidity and temperature over Estonia and Finland derived from radiosonde measurements  
*Hannes Keernik, E. Jakobson and H. Ohvrl* |
| B9 | Regional aspects of climate in the southeast Baltic region in connection with global changes  
*Evgeny V. Krasnov, G. M. Barinova and D. V. Gaeva* |
| B10 | Reanalysis vs. regional climate model for the Baltic Sea region  
*Andres Luhamaa, M. Zirk and P. Post* |
| B11 | Multi-model estimates of sea ice cover changes in the Baltic Sea by 2090  
*Anna Luomaranta, J. Haapala, K. Ruosteenoja, K. Jylhä, H. Gregow and A. Laaksonen* |
B12 Features of climate change on the territory of the Republic of Belarus
Victor Melnik and E. Komarovskaya

B13 New historical climate data of the southern Baltic Coasts
Gudrun Rosenhagen and B. Tinz

B14 Lessons from the almost seven decades of visual wave observations from the eastern Baltic Sea coast
Tarmo Soomere, M. Eelsalu, K. Pindsoo and M. Zujev

B15 Simulated halocline variability in the Baltic Sea during 1961-2007
Germo Väli, M. Meier and J. Elken

B16 Assessment of regional climate variability and change using ECA&D and E-OBS
G. van der Schrier, E.J.M. van den Besselaar, R. Leander and A.M.G. Klein Tank

Topic C:
Provision of improved tools for water management, with an emphasis on extreme hydrological events and long-term changes

C1 Causes and rates for erosion caused by the January 2012 storm surge on the accumulative Polish dune coast
Tomasz A. Labuz

C2 An emergency communication system against hydrosphere and atmosphere threats for the Baltic Sea and the Polish coastline: The role of new media in warning of extreme hydrological and marine hazards
Łukasz Legutko, A. Plygawko and M. Ostojski

C3 Characteristics of cyclones causing extreme sea levels in the Northern Baltic Sea
Piia Post and T. Kõuts

C4 Precipitation – Too much or too little for potato growth
Triin Saue and J. Kadaja

C5 'Stormy' circulation types of COST 733 classifications in Estonia
Mait Sepp

C6 Maximum sea levels at selected stations of the Baltic Sea coast
Tomasz Wolski and B. Wiśniewski
**Topic D:**
Biogeochemical cycles in the Baltic Sea basin and transport processes within the regional Earth system under anthropogenic influence

D1 **Tracing terrestrial DOC in the Baltic Sea – A 3D model study**
F. Fransner, C. Humborg, H.E.M. Meier, C.M. Mörth and J. Nycander

D2 **Will the growing season have changed in Poland by the end of the 21st century? Intra- and multi-model projections**
Joanna Jędruszkiewicz

D3 **Anthropogenic sources of nutrient pollution as a cause of degradation of the Baltic Sea and sustainable wastewater management for its prevention**
Edyta Kiedrzyńska, M. Kiedrzyński, M. Urbaniak, A. Magnuszewski and M. Zalewski

D4 **Biotic responses to post-glacial climate change in the Baltic Sea area**
Evgeny V. Krasnov, G. M. Barinova and A. Y. Romanchuk

D5 **Simulations of future sulphur and nitrogen deposition over the Baltic Sea drainage basin using meteorological data from three regional climate projections**
Joakim Langner and M. Engardt

D6 **The Gulf of Finland Year 2014 - ‘Clean Gulf of Finland ahead of time’**
Kai Myrberg and K. Kostamo

D7 **Energy flows, production and filtration activity of mollusks in the salinity gradient of estuaries of the southern Baltic Sea**
Dmitry Philippenko

D8 **Atmospheric phosphorus load to the Baltic Sea – An approach for the estimation in the Finnish sea area**
Tuija Ruoho-Airola, S. Knuuttila and J. Vuorenmaa

D9 **Estimates of possible changes in indicators of eutrophication of the Baltic Sea under different scenarios of climate change and nutrient loads**
Vladimir Ryabchenko, M. Molchanov, A. Isaev, T. Eremina, O. Savchuk and R. Vankevich

D10 **Climate change responses of the large aquatic ecosystems in the Baltic Sea basin**
Andrey N. Sharov, L. E. Nazarova, T. N. Polyakova and N. A. Berezina

D11 **Transport of PCDD/PCDF along the Pilica River continuum under different hydrological conditions – A possible impact on the Baltic Sea environment**
Magdalena Urbaniak, E. Kiedrzyńska, M. Zieliński and M. Zalewski
D12  Migration, retention and leaching of PCBs in soil fertilized with sewage sludge
*Magdalena Urbaniak, M. Szewczyk, W. Tołoczko and M. Zalewski*

D13  Influence of temperature on the long-term spring diatom development in the Baltic Sea
*Norbert Wasmund, G. Nausch and R. Feistel*