



6th Study Conference on BALTEX

14 - 18 June 2010, Międzyzdroje Island of Wolin, Poland

Draft Programme

Sunday, 13 June 2010

16:00 – 18:00 Registration

Monday, 14 June 2010

8:00 – 10:00 Registration

Opening Ceremony

10:00 *Janusz Pempkowiak*, Director of the Institute of Oceanology – Polish Academy of Science, Sopot, Poland
Member of the BALTEX Science Steering Group

Olgierd Geblewicz Chair of the West Pomeranian Regional Assembly (Sejmik of West Pomeranian Voivodship), Poland
Board member of Baltic Sea States Subregional Co-operation

Andrzej Borowiec, Director of the Maritime Office in Szczecin, Poland

Leszek Tomasz Dorosz, Major of Międzyzdroje, Wolin, Poland

Małgorzata Gutry-Korycka, University of Warsaw, Poland
Chair of the National Committee Poland of the International Geosphere-Biosphere Programme

Joakim Langner, Swedish Meteorological and Hydrological Institute, Norrköping, Sweden
Chairman of the BALTEX Science Steering Group

11:00 *Break*

Opening Session

Chair: Hans-Jörg Isemer

11:30 **Poland - A Baltic Country: - Climate, waters, people**
Zbigniew Kundzewicz, Polish Academy of Sciences, Research Centre of Agriculture and Forest Environment, Poznan, Poland, and
Rajmund Przybylak, Dept. of Climatology, Nicolaus Copernicus University, Torun, Poland

- 12:00 **BONUS-169 – Future perspectives of Environmental Research for the Baltic Sea Region**
Kaisa Kononen, BONUS EEIG, Helsinki, Finland
- 12:30 **NEESPI Current Status and its Objectives within Northwestern Eurasia**
Pavel Groisman, NOAA National Climatic Data Center, Asheville, North Carolina, USA
- 13:00 *Lunch*

TOPIC 1: Climate variability and change in the past and future

A. Observations and Impacts

Chair: Hans von Storch

- 14:00 **Detailed assessment of climate variability of the Baltic Sea area for the period 1958-2009 (solicited)**
Andreas Lehmann, K. Getzlaff and J. Harlass
- 14:30 **The response of the Baltic Sea to climate variability**
Klaus Getzlaff, A. Lehmann and J. Harlaß
- 14:50 **Changes in Snow Cover Characteristics over Northwestern Russia**
Olga Bulygina, P.Y. Groisman and V. Razuvaev
- 15:10 **Changes in wind directions in Estonia during 1966-2008 and their relationships with large-scale atmospheric circulation**
Jaak Jaagus
- 15:30 *Break*
- Chair: Sirje Keevalik*
- 16:00 **What do we know about sea-level change in the Baltic Sea? (solicited)**
Birgit Hünicke
- 16:30 **Is the Baltic sea-level change accelerating?**
Eduardo Zorita and B. Hünicke
- 16:50 **Climate variability and change detected from Baltic Sea level data since 1774 – an overview**
Martin Ekman
- 17:10 **Environmental changes of Pomeranian Bay in the Holocene on the basis of diatomological and geochemical studies**
Robert Kostecki and B. Janczak-Kostecka

- 17:30 **Holocene coastal morphogenesis at the southern Baltic Sea: an interplay of climate forcing and the geological environment – a case study of the Darss-Zingst Peninsula**
Wenyan Zhang, J. Harff, R. Schneider and E. Zorita
- 17:50 **Interference of climate change, geosphere and anthroposphere – a new focus of the Szczecin science community**
Andrzej Witkowski, Jacek Batóg, Ryszard K. Borówka, Kazimierz Furmańczyk, Jan Harff, Maciej Kowalewski, Przemysław Krajewski, Roman Marks, Stanisław Musielak, Marian Rębkowski and Hans von Storch
- 18:10 *End of the Day*
- 19:00 *Icebreaker*

Tuesday, 15 June 2010

TOPIC 1: Climate variability and change in the past and future (continued)

B. Models and Impacts

Chair: Anders Omstedt

- 8:30 **Climate change in the Baltic Sea area in an ensemble of regional climate model simulations (solicited)**
Erik Kjellström, G. Nikulin and L. Bärring
- 9:00 **Long term trend and decadal variability of the hydrological cycle in the Baltic Sea region as modelled by the ENSEMBLES regional climate models**
Philip Lorenz, K. Meraner and D. Jacob
- 9:20 **Analysis of the water balance and wind climate over the Baltic Sea drainage basin using dynamically downscaled climate simulations**
Björn Carlsson, I. Sjöström, A. Rutgersson and A. Omstedt
- 9:40 **Uncertainties in the projected climate changes of wind extremes over the Baltic region**
Grigory Nikulin, E. Kjellström and C. Jones
- 10:00 **Detection and attribution of an anthropogenic effect on temperature and precipitation changes in the Baltic Sea catchment**
Jonas Bhend and H. von Storch
- 10:20 **Categorical temperature data as indicators of warming in Poland**
Zbigniew Kundzewicz and H. Lorenc
- 10:40 *Break*

Chair: Andreas Lehmann

- 11:10 **Transient scenario simulations for the Baltic Sea for 1961-2099 (solicited)**
HE Markus Meier and ECOSUPPORT collaborators
- 11:40 **Estimates of the impact of potential climate change in the 21st century on the Baltic Sea ecosystem**
Vladimir Rybachenko, L. Karlin, I. Neelov, T. Eremina , O. Savchuk, R. Vankevich and A. Isaev
- 12:00 **Impact of climate change on biogeochemical fluxes of nitrogen and phosphorus in the Gulf of Riga**
Bärbel Müller-Karulis, J. Sennikovs, A.Valainis and J. Aigars
- 12:20 **Impact of climate changes on the water balance of a mesoscale catchment of the Western Bug**
Thomas Pluntke, K. Barfus, K. Schwärzel, C. Burmeister and C. Bernhofer
- 12:40 **Evaluating the Combined Effects of Nutrient Load Reduction and Climate Scenarios for the Baltic Sea Catchment**
Chantal Donnelly, Johan Strömqvist, Joel Dahné and Berit Arheimer
- 13.00 *Lunch*
- 14.00 – 15:30 **Poster Session (see page 10)**
- 16.00 *Excursion*

Wednesday, 16 June 2010

TOPIC 4: Regional adaptation to climate change

Chair: Andrzej Witkowski

- 8:30 **Climate services – Concepts and examples (solicited)**
Hans von Storch and I. Meinke
- 9:00 **Design practice for urban drainage incorporating climate change impacts (solicited)**
Qianqian Zhou, K. Arnbjerg-Nielsen, P.-S. Mikkelsen, K. Halsnæs and S. Balslev Nielsen
- 9:30 **“Ecohydrological dams” for compensation of climate change and reduction of fluxes nutrients and pollutants from the river basins to Baltic Sea (solicited)**
Maciej Zalewski

- 10:00 **Meteorologically possible potato yields for Estonia, derived from climate change scenarios**
Triin Saue and J. Kadaja
- 10:20 **The perceptions of Baltic Sea region climate scientists pertaining to climate change in the Baltic Sea region: Results of the survey SurBACC 2010 (solicited)**
Dennis Bray
- 10:50 *Break*
- Chair: Jörgen Nilsson*
- Special session**
EU strategy for the Baltic Sea Region and projects on regional adaptation to climate change in the Baltic Sea area
- 11:20 **Overview**
Jörgen Nilsson
- 11:40 **A northern European perspective on adaptation to climate change**
Sten Bergström
- 12:00 **BALTIC CLIMATE, an INTERREG project (*working title*)**
NN
- 12:20 **Open discussion**
- 12.40 *Lunch*

TOPIC 2: Water, energy and biogeochemical cycles in the regional Earth system

A. Water and energy cycles

Chair: Michael Lautenschlager

- 14:00 **Current status of the BALTEX in-situ reference sites in CEOP (solicited)**
Frank Beyrich, C. Heret, U. Rummel, F. Bosveld, E. Kyrö and R. Kivi
- 14:30 **Energy and Water Budget Over the BALTEX Domain From a Suite of Atmospheric Regional Climate Models (Present and Future)**
Burkhardt Rockel
- 14:50 **An advanced weather radar network for the Baltic Sea Region – BALTRAD**
Daniel Michelson
- 15:10 **New Dataset of Highly Resolved Atmospheric Forcing Fields for 1850-2009**
Frederik Schenk and E. Zorita

- 15:30 **Wind parameters in the centre of the Gulf of Finland from measurements and HIRLAM outputs**
Sirje Keevallik
- 15:50 *Break*
- Chair: Jüri Elken*
- 16:20 **Introducing air-sea interaction processes in numerical models (solicited)**
Anna Rutgersson, Ø. Sætra, A. Semedo, B. Carlsson, R. Kumar and Ø. Breivik
- 16:50 **Impact of aerosol optical properties on climate change processes. The Baltic case study**
A. Ponczkowska, P. Makuch, J. Kowalczyk, T. Zielinski, T. Petelski, J. Piskozub, A. Smirnov, B. Holben, J. Pasnicki and K. Zielinski
- 17:10 **Air-sea interaction model for momentum and mass in the presence of wind waves**
Christoph Zülicke
- 17:30 **A reliability study of wave climate modelling in the Baltic Sea**
Andrus Räämet and Tarmo Soomere
- 17:50 **Sensitivity of the CCLM to changing land use in Eastern Europe**
Dennis Söhl, D. Pavlik and C. Bernhofer
- 18:10 *Break*
- 18:20 **Workshop** on the EU strategy for the Baltic Sea Region and projects on regional adaptation to climate change in the Baltic Sea area

Thursday, 17 June 2010

TOPIC 2: Water, energy and biogeochemical cycles in the regional Earth system (continued)

B. Biogeochemical cycles

Chair: Janusz Pempkowiak

- 8:30 **Phosphate release at the sediment surface during anoxic conditions: Myths, mysteries and facts (solicited)**
Bernd Schneider
- 9:00 **Dissolved organic phosphorus in the Baltic Sea: Temporal and spatial variations**
Monika Nausch, G. Nausch, D. Setzkorn, B. Sadkowiak and A. Welz.

- 9:20 **Response of Polish rivers (Vistula, Oder) to reduced pressure from point sources and agriculture during the transition period (1988-2008)**
Marianna Pastuszak and K. Pawlikowski
- 9:40 **Utilization of spatially-irregular simulation model to study processes of nitrogen and phosphorus' compounds transformation and dynamics of dissolved oxygen in the ecosystem of the Neva Bay, Gulf of Finland**
K.A. Podgorny
- 10:00 **Modeling nutrient balance for Western Bug catchment under global change and data scarce conditions**
Tatyana Terekhanova, B. Helm and J. Tränckner
- 10.20 *Break*
- Chair: Bernd Schneider*
- 10:50 **Can observational pH data confirm the predicted acidification of Baltic Sea surface water? (solicited)**
Anders Grimvall, A. Omstedt and M. Pertillä
- 11:20 **Simulation of nutrient transport from different depths during an upwelling event in the Gulf of Finland**
Germo Väli, V. Zhurbas, J. Laanemets and J. Elken
- 11:40 **Carbon budget of the Baltic Sea**
Karol Kuliński and Janusz Pempkowiak
- 12:00 **Simulating dissolved organic carbon in the Baltic Sea catchment area**
Guy Schurgers, P. Miller, C.-M. Mörth, T. Wällstedt, A. Yurova and B. Smith
- 12:20 **Quality assessment of state-of-the-art coupled physical-biogeochemical models for the Baltic Sea**
Kari Eilola, B.G. Gustafson, R. Hordoir, A. Höglund, I. Kuznetsov, H.E.M Meier, T. Neumann and O.P. Savchuk
- 12.40 *Lunch*
- Chair: Marcus Reckermann*
- 14:00 **Modelling biogeochemical fluxes in the Vistula Lagoon**
Mariusz Zalewski, Z. Witek and M. Wielgat-Rychert
- 14:20 **Towards a comprehensive biogeochemical model of the Baltic Sea**
Letizia Tedesco, Tapani Stipa, Antti Westerlund and Alexsi Nummelin
- 14:40 **Impact of climate change on the distribution of phytoplankton biomass in the Baltic Sea**
J. Jakacki, L. Dzierzbicka-Glowacka and M. Janecki

- 15:00 **Methodological approach for the assessment of the ecological status of urban water bodies (Saint-Petersburg as a case study)**
Valery Vuglinsky, T. Gronskaya and N. Lemeshko
- 15:20 *Break*
- Chair: Pavel Groisman*
- 15:50 **Atmospheric deposition of particulate Nitrogen, Sulphur and Benzo(a)pyrene into the Baltic Sea between 1995 and 2005 considering the influence of ship emissions (solicited)**
Armin Aulinger, Volker Matthias and Markus Quante
- 16:20 **Variability of the marine boundary layer parameters over the Baltic Sea sub-basins in HIRLAM parameterizations since 1993 and their impact on the nitrogen deposition**
Marke Hongisto

TOPIC 3: Hydrological modelling, water management and extreme hydrological events

- 16:40 **Extreme storm surge events in the Pomeranian Bay and its impact on water levels in the Lower Odra River (solicited)**
Halina Kowalewska-Kalkowska
- 17:10 **Tsunami waves in coastal zone due to asteroid impact**
Stanisław R. Massel
- 17:30 **Frequencies of spring floods in Belarus part of the Baltic Sea basin according to the atmospheric circulation**
Irina Danilovich and Ryhor Chekan
- 17:50 *End of the Day*
- 19:00 *Conference Dinner*

Friday, 18 June 2010

TOPIC 3: Hydrological modelling, water management and extreme hydrological events (continued)

Chair: Berit Arheimer

- 8:30 **Baltic inflows – Extreme oceanographic events (solicited)**
Jan Piechura and R. Osieński
- 9:00 **Integrated Water Resource Management for Western Bug catchment as a multi scale - multi objective approach**
Björn Helm, T. Terekhanova and F. Blumensaat

- 9:20 **Hydrological modeling of the lake flow using “Hydrograph” model**
Sergey Zhuravlev and Y. Vinogradov
- 9:40 **Droughts in Poland, recent variability and future predictions**
Joanna Wibig
- 10:00 **Temporal variability of extreme precipitation in Estonia 1961-2008**
Kalev Päädam and P. Post
- 10:20 *Break*
- Chair: Joakim Langner*
- 10:50 **Utilizing Lagrangian Trajectories for Reducing Environmental Risks**
Bert Viikmäe, T. Soomere, N. Delpeche, H.E.M. Meier and K. Döös
- 11:10 **Using multi-year circulation simulation to identify areas of reduced risk
for marine transport. Application to the Gulf of Finland**
Oleg Andrejev, A. Sokolov, T. Soomere, K. Myrberg and B. Viikmäe
- 11:30 **Spatio-temporal changes in thunderstorm frequency in Estonia**
Sven-Erik Enno
- 11:50 **Identifying high risk areas of pollution in the western Baltic Sea**
Andreas Lehmann, H-H. Hinrichsen and K. Getzlaff
- 12:10 *Closing of the Conference*
- 12:30 *End of the Conference*

6th Study Conference on BALTEX
14 - 18 June 2010, Międzyzdroje, Island of Wolin, Poland
Tuesday, 15 June 2010

14.00 – 15:30 **Poster Session**

TOPIC 1: Climate variability and change in the past and future

ECOSUPPORT (Advanced tool for scenarios of the Baltic Sea ECOSystem to SUPPORT decision making): Project approach and selected results (Topic1 - 01)

Helèn C. Andersson and the ECOSUPPORT consortium

Role of modern changes of a snow cover and climate in formation of a river runoff of the Baltic sea basin of East European plain (Topic1 - 02)

Ala Bildziuh, L. Trafimova, I. Danilovich and R. Chekan

Precipitation changes in the Russian sector of the Baltic Sea Basin after accounting for comprehensive biases in their measurements (Topic1 - 03)

Esfir G. Bogdanova, B. Iljin, S-Y. Gavrilova and P.Y. Groisman

Long term water level and surface temperature changes in the lagoons of the South and East Baltic (Topic1 - 04)

Inga Dailidienė, H. Baudler and B. Chubarenko

Runoff Simulation in River Catchment using Spatial Weather Generator and Climate Change Scenario (Topic1 - 05)

Leszek Kuchar, S. Iwański and L. Jelonek

High Resolution Reanalysis for the Baltic Sea Region During 1965-2005 (Topic1 - 06)

Andres Luhamaa, K. Kimmel, A. Männik and R. Rõõm

Long-term changes in frequency and duration of southern cyclones influencing on climate variability in Estonia (Topic1 - 07)

Kaupo Mändla, M. Sepp and J. Jaagus

Comparison of the Sea Surface Temperatures and Sea Ice Concentration from ERA-Interim and BSH (Topic1 - 08)

Thomas Raub, T. Cesko, K. Getzlaff, A. Lehmann and D. Jacob

On Regime Shift in the General Atmospheric Circulation in winter over the Baltic Sea Region (Topic1 - 09)

Mait Sepp

Changes in some elements of the water cycle in the Baltic Sea areas of the former Soviet Union (Topic1 - 10)

Nina Speranskaya

TOPIC 2: Water, energy and biogeochemical cycles in the regional Earth system

A. Water and energy cycles

Wave conditions along the Latvian coast of the Baltic Proper derived from visual wave observations (Topic2a - 01)

Anita Draveniece

The space variability of thermohaline and dynamical parameters during wind-driven coastal upwelling in the South-East Baltic (Topic2a - 02)

Mariy Golenko and N. Golenko

Combining of MODIS and SAR images in research of water dynamics in the South-East Baltic Sea (Topic2a - 03)

Evgenia Gurova and A. Ivanov

Modeling of ice cover of the Baltic Sea (Topic2a - 04)

M. Janecki, J. Jakacki, L. Dzierzbicka-Glowacka and R. Osinski

Assessment of precipitation conditions in the Polish zone of the South-Baltic Coastland (Topic2a - 05)

Eliza Kalbarczyk and R. Kalbarczyk

A study of ASCAT wind measurements near coastal region of Estonia (Topic2a - 06)

Jekaterina Služenikina and A. Männik

Large Scale Skill in Regional Climate Modeling and the Lateral Boundary Condition Scheme: 32-day Ensemble Experiments (Topic2a - 07)

Katarina Veljovic, B. Rajković and F. Mesinger

Mesoscale patterns of wind and precipitation due to inertia-gravity waves in model simulations and observational networks (Topic2a - 08)

Christoph Zülicke

B. Biogeochemical cycles

Depositions of acidifying and neutralising compounds over the Baltic Sea drainage basin between 1960 and 2006 (Topic2b - 01)

Björn Carlsson and A. Rutgersson

Development of the marine planktonic copepod *Acartia spp* in the southern Baltic Sea (Topic2b - 02)

Lidia Dzierzbicka-Glowacka, I.M. Żmijewska, J. Jakacki, A. Lemieszek and S. Mudrak

The distribution of phytoplankton biomass in the Baltic Sea simulated by a three-dimensional model (Topic2b - 03)

Maciej Janecki, L. Dzierzbicka-Glowacka and J. Jakacki

Determination of carbon return flux from the Baltic bottom sediments (Topic2b - 04)

Karol Kuliński, A. Szczepańska and J. Pempkowiak

Impact of climate change on the development of *Temora longicornis* in the southern Baltic Sea (Topic2b - 05)

Anna Lemieszek, L. Dzierzbicka-Głowacka and I.M. Żmijewska

Modeling of egg production of *Temora longicornis* (Topic2b - 06)

Anna Lemieszek, L. Dzierzbicka-Głowacka and I. M. Żmijewska

Particulate Organic Carbon in the southern Baltic Sea (Topic2b - 07)

Anna Maciejewska, L. Dzierzbicka-Głowacka, K. Kuliński and J. Pempkowiak

Factors influencing the acid-base (pH) balance in the Baltic Sea: A sensitivity analysis (Topic2b - 08)

Anders Omstedt, M. Edman, L. Anderson and H. Laudon

Importance of Szczecin Lagoon for the Odra River mouth area in the light of geochemical studies in the Polish part of the basin (Topic2b - 09)

Andrzej Osadczyk, A. Skowronek, A. Witkowski and Ł. Maciąg

Database of published nitrogen concentrations in air and precipitation around the Baltic Sea 1850-1960 (Topic2b - 10)

Tuija Ruoho-Airola, M. Parviainen and V. Tarvainen

Do the ratio of pigments and carbon content in main groups of algal classes depend on trophicity? Preliminary results (Topic2b - 11)

Mirosława Ostrowska, J. Stoń-Egiert, M. Łotocka and R. Majchrowski

Ecological and hydrological field studies in southern Karelia within the easternmost part of the Baltic Sea Basin in Onego/Ladoga Lakes system (Topic2b - 12)

Tatiana Sazonova, V. Bolondinsky and V. Pridacha

Long term changes in phytoplankton pigments characteristics in Southern Baltic region (Topic2b - 13)

Joanna Stoń-Egiert

TOPIC 3: Hydrological modelling, water management and extreme hydrological events

Towards quantification of areas of High and Low Risk of Pollution in the Gulf of Finland with the Application to Ecologically Sensitive Areas (Topic3 - 01)

Nicole Delpeche, T. Soomere and B. Viikmäe

Drought analysis of the Mediterranean region using z-score (Topic3 - 02)

Aleksandra Kržič and I. Tošić

Drought analysis of the Mediterranean region according to the A2 scenario using the Standard Precipitation Index (Topic3 - 03)

Aleksandra Kržič and I. Tošić, B. Rajković and V. Djurdjević

Circulation of groundwater below a rippled sea bed (Topic3 - 04)

Stanisław R. Massel

Recent Dynamic and Prediction of Heavy Precipitation Events in Lithuania (Topic3 - 05)

Egidijus Rimkus, J. Kažys and A. Bukantis

Submarine Groundwater Discharge to the Gulf of Gdańsk (Topic3 - 06)

Beata Szymczycha, L. Kotwicki and J. Pempkowiak

Changes of mean and extreme river runoff in Belarus during the 20th century (Topic3 - 07)

Alexander Volchek, J. Stefanenko, S. Parfomuk, V. Luksha, A. Volchek, O Natarova and T. Shelest

Physical characteristics of extreme storm surges and falls on the Polish coast (Topic3 - 08)

Bernard Wisniewski and T. Wolski

TOPIC 4: Regional adaptation to climate change

Connections between Circulation Type Incidence and the Modelled Potato Crop Yield in Estonia (Topic4 - 01)

Mait Sepp and T. Saue

Thermal resources of the southwestern part of Belarus and their dynamics (Topic4 - 02)

Alexander Volchek, O. Meshik and V. Luksha