

Climate Change
The environmental and socio-economic response
in the southern Baltic region

Conference Programme
Preliminary version as of 23 April 2009

SUNDAY, 24 May 2009

16:00-20:00 **Registration** at the Conference Venue

19:00 **Ice Breaker** at the Conference Venue (Drinks / Snacks /Music)

MONDAY, 25 May 2009

09:00 **Registration** at the Conference Venue

10:30 **Opening Ceremony**

Chair: Andrzej Witkowski

10:30 **Welcome speeches** by representatives of Polish and German Governments and of the hosting University

Keynote Lectures

11:30 **Winter air temperatures in the Baltic Sea region during the past millenium**
Andres Tarand (Member of the EU Parliament)

12:00 **The BACC Strategy (BALTEX Assessment of Climate Change for the Baltic Sea Basin)**
Hans von Storch, Hans-Jörg Isemer, Marcus Reckermann, and the BACC Author Team

12:30 Lunch

Session A: “Marine and terrestrial proxies for reconstructions of paleo-climate”

Chair: Achim Brauer

14:00 *Invited Lecture*
Global Warming in the perspective of 20,000 years
Svante Björck

- 14:30 **BONUS programme: INFLOW project – providing information on forcing mechanisms of environmental changes of the Baltic Sea during the past 6000 years and future scenarios**
Aarno Kotilainen, Laura Arppe, Eystein Jansen, Juha Karhu, Mia Kotilainen, Antoon Kuijpers, Markus Meier, Matthias Moros, Thomas Neumann, Daria Ryabchuk, Ian Snowball, Mikhael Spiridonov and Andrzej Witkowski
- 14:50 **Sedimentation of a marine deposit in the "Szczecin Bay" during the Littorina transgression**
Ryszard Krzysztof Borowka, Andrzej Witkowski, Malgorzata Latalowa and Artur Skoweronek
- 15:10 **Multi-proxy record of climate and Holocene palaeohydrological events in SE Wolin Island (Southern Baltic Sea)**
Anna Pedziszewska, Kamila Mianowicz, Ryszard Krzysztof Borowka and Małgorzata Latałowa
- 15:30 Break
- Chair: Aarno Kotilainen*
- 16:00 **Environmental change during the Holocene in the Baltic Sea based on sediment core analysis of the Eastern Gotland Basin**
Michal Tomczak, J. Harff, A. Witkowski, R. Endler and M. Moros
- 16:20 **Debatable questions of Holocene geological history of the Eastern Gulf of Finland**
Darya Ryabchuk, Vladimir Zhamoida, Mikhail Spiridonov, Elena Nesterova and Andrey Grigoriev
- 16:40 **Lake Hańcza (Northeastern Poland) – a new multi-proxy record of late glacial and early Holocene climate and environmental change from the Eastern Baltic**
Stefan Lauterbach, Achim Brauer, Birgit Plessen, Peter Dulski, Katarzyna Zamelczyk, Krystyna Milecka, Tadeusz Namiotko, Matthias Hüls, Nils Andersen, Ulrich von Grafenstein, Dan L. Danielopol and *DecLakes* participants.
- 17:00 **Climatic changes reflected in high-resolution pollen diagram from Lake Hańcza, NE Poland**
Krystyna Milecka, Milena Obremaska and Kazimierz Tobolski
- 17:20 **Non-stationarities in the circulation-climate-relationship over the Baltic Sea and its effects on reconstructions of climate indices**
Frederik Schenk, Daniel Hansson, Sebastian Wagner and Eduardo Zorita
- 17:40 *Closing for the Afternoon*

19:30 *Evening Lecture*
Nuclear Astrophysics versus Global Warming
Konrad Czerski, Institute of Physics, University of Szczecin

20:30 *Closing for the Day*

TUESDAY, 26 May 2009

Session D: "Prehistoric communities and climate change"

Chair: Marian Rebkowski

9:00 *Invited Lecture*
Hunting-gathering communities on the Kashubian Shoreland
Marcin Waś

9:30 **Hunters and fisher in a changing world - Preliminary results of the archaeological fieldwork 2003-2008 of the SINCOS research unit in Wismar Bay, Germany**
Harald Lübke and Friedrich Lüth

9:50 **Palynological data on the Late Mesolithic and the transition to the Neolithic economy in Wolin Island, the Southern Baltic coast**
Malgorzata Latalowa and Anna Pedziszewska

10:10 **Climate change influence on the human settlement in the region of Dziwna River (NW Poland)**
Marek Dworaczyk, Andrzej Piotrowski, Justyna Relisko-Rybak and Jan Seidler

10:30 Break

11:00 **Poster Discussion**

See the poster programme on page 7

13:00 Lunch

Session B: "Modeling of past climate and future projections"

Chair: Jan Harff

14:00 *Invited Lecture*
Contribution of regional climate drivers to future winter Baltic Sea-level changes: An application of statistical downscaling to the output of global climate model simulations
Birgit Huenicke

- 14:30 **Detailed assessment of climate variability of the Baltic Sea for the period 1950/70-2008**
Andreas Lehmann, Klaus Getzlaff, Jan Harlass and Karl Bumke
- 14:50 **Modern and future changes of snow accumulation of the south-east Baltic region**
Lev Kitaev and Alexander Kislov
- 15:10 **Variability of droughts in Poland, 1951-2006**
Joanna Wibig and Gintautas Stankunavicius
- 15:30 Break
- Chair: Eduardo Zorita*
- 16:00 **Seasonal structural front in the Baltic Sea under changing climate conditions: Field data analysis and numerical modeling results**
Natalia Demchenko and Esuikova Elena
- 16:20 **The weather generator, a tool for modeling environmental and socio-economic response of future climate**
Leszek Kuchar
- 16:40 **Past and future changes in Latvian river runoff: The Cases of Bērze and Salaca River Basins**
Elga Apsite, Anda Bakute and Līga Kurpniece
- 17:00 **Mechanisms of formation of the Baltic Sea cold intermediate layer: What to expect due to climate warming**
Irina Chubarenko
- 17:20 **The Fahrenheit scale and three hundred years of thermometry over the Baltic Sea**
Roman Marks
- 17:40 *Closing for the Afternoon*
- 20:00 **Conference Dinner** (Buffet at Szczecin Castle)

WEDNESDAY, 27 May 2009

Session C: "Climate and anthroposphere interaction"

Chair: Barbara Batóg

- 9:00 *Invited Lecture*
Climate Change: New Challenges for State Geological Surveys of Germany
Ralf-Otto Niedermeyer

9:30 **Impact of climate change on long-term variability of ecological state of the Curonian Lagoon of the Baltic Sea**
Sergey Aleksandrov

9:50 **Synchronous regime shifts in Baltic Sea ecosystems: Similarities and dissimilarities in response to climate, nutrients and fisheries**
Thorsten Blenckner, Rabea Diekmann, Christian Möllmann, Anna Gårdmark, Michele Casini, Lena Bergström, Juha Flinkman, Bärbel Müller-Karulis, Martin Lindegren, Georgs Kornilovs and Maris Plikss

10:10 **Quantitative inventory of exhaust gas emission from coastal fishing vessels in Poland**
Tadeusz Borkowski and Jaroslaw Myskow

10:30 Break

Chair: Maciej Kowalewski

11:00 **On the influence of anthropogenic factors and regional climatic changes on the dynamics of the bottom sediments of the Vistula Lagoon**
Vladimir Chechko and Viktoria Kurchenko

11:20 **Global environmental change and urban climate in Central European cities**
Krzysztof Fortuniak

11:40 **Extreme weather event in the Baltic region in July 2006: Its causes and consequences**
Krzysztof Jarzyna

12:00 **Anthropogenic changes in the region of Gdansk Zulawy (Vistula Delta) resulting from climatic effects**
Wojciech Majewski

12:40 Lunch

Session E: "Climate variability and change impacts on Baltic Sea coasts"

Chair: Peter Fröhle

13:40 *Invited Lecture*
Sea level and coast changes of the southern Baltic Sea during the last 9,000 calendar years and their controlling factors
Karol Rotnicki

14:10 **Using SEDSIM to predict the response of coastal sediments to climate change in Australia**
Cedric M. Griffiths, Tristan Salles, Fangjun Li and Chris P. Dyt

14:30 **Modelling historical coastline change with SEDSIM: The development of the Darss-Zingst peninsula since 1696 AD**
Michael Meyer, Jan Harff, Lars Tiepolt and Chris P. Dyt

14:50 **From the field to the map: The landslide inventory and geohazard assesment of the steep cliff coast in NE Germany**
Karsten Obst and Karsten Schütze

15:10 Break

Chair: Zygmunt Meyer

15:40 **Measured sea level rise at the Baltic Sea Cost of Mecklenburg-Vorpommern and implications for the design of coastal structures**
Steffi Dimke and Peter Fröhle

16:00 **Coastal abrasion of the coasts of the Świna Gate Sandbar caused by the heavy storm surge on November 2004**
Tomasz A. Labuz and Halina Kowalewska-Kalkowska

16:20 **Sand barriers: Disappearing resources, Hel Peninsula case**
Stanislaw Rudowski, Benedykt Hac, Łukasz Gajewski, Leszek Łęczyński, Jarosław Nowak and Kazimierz Szeffler

16:40 **Development of conceptions of alongshore sediment drifts structure and coast defense strategy under rising sea-level**
Alexander Babakov

17:00 **Climate change and anthropogenic impact on bottom sediment environment in recent 30 years, Pearl River Estuary**
Cheng Tang, Wenhuan Zhan, Zhen Xia, Bjoern Heise

17:20 *Closing Ceremony*

20:00 **Concert**

THURSDAY, 28 May 2009

All Day Excursions (alternatively)

- **The inner and outer coasts of Wolin Island**
- **The coasts of Rügen Island**
- **Expedition with R/V NAWIGATOR XXI to the Pomeranian Bay (by invitation only)**

FRIDAY, 29 May 2009

Departure of Participants

Poster Discussion

Tuesday, 26 May 2009, 11:00 – 13:00

Session A: Marine and terrestrial proxies for reconstructions of paleo-climate

Poster A10

Dating of paleo-shoreline terraces of Lake Lisan high stands

Shahrazad Abu Ghazleh and Stephan Kempe

Poster A11

Geomorphic evolution of small river-lake-systems in Northeast Germany during the Late Quaternary

Knut Kaiser, Henrik Rothery, Sebastian Lorenz, Peter Gärtner and Ralf Papenroth

Poster A12

Sediments of the Gulf of Gdańsk as the indicator of short term climatic oscillation

Urszula S. Paczek and Szymon Uścińowiczirje

Poster A13

Palaeobiological and palaeobiogeochemical data in the models of global and regional climate change

A. Y. Romanchuk and E. V. Krasnov

Poster A14

Development of paleo-environment within the Gdansk Basin in the Late Pleistocene – Holocene according the data of investigations of the core-section #303700-7 sampled in R/V Poseidon cruise

Mikhail Spiridonov, Vladimir Zhamoida, Andrey Grigoriev, Alla Shaparova, Vadim Sivkov and Darya Ryabchukrko

Poster A15

Holocene climate variability in millenial time scale based on palaeolimnological evidences (Great Poland Lowland)

Adamuido Wojciechowski

Session B: Modelling of past climate change and future projections

Poster B10

Probable response of the Baltic Sea Cold Intermediate Layer to climate warming: Field data analysis and numerical modelling

Irina Chubarenko, Olga Kozlova and Lilia Sachenko

Poster B11

Horizontal water exchange within the Baltic Sea: Results of numerical modelling

Elena Esiukova and Irina Chubarenko

Poster B12

Variability of cool, hot and very hot days in the zone of the Polish coast of the Baltic Sea

Czeslaw Kozminski and Michalska Bozena

Poster B13

Precipitation changes on the Polish coast of the Baltic Sea (1954-2003) due to intensity of westerlies over Europe

Malgorzata Swiatek

Poster B14

Changes of elements of water balance and their forecast against global climate fluctuation

A. A. Volchek and N. N. Sheshko

Poster B15

SST Retrieval from MSG/SEVIRI Data in the Baltic Sea Area

Monika Wozniak

Session C: Climate and anthroposphere interaction

Poster C10

Change of climate in the Baltic region for the last thousand years

G. M. Barinova and E.V Krasnov

Poster C11

Analysis of interactions between level of economic development, industrial production and environmental pollutions in the Baltic Sea Region

Jacek Batóg and Barbara Batóg

Poster C12

Substantiation for climate change at the Lithuanian coast in South-Eastern Baltic

Inga Dailidienė and Lina Davulienė

Poster C13

The application of the exploratory factor analysis in the study of heat power costs determinants in housing resources

Iwona Fory

Poster C14

Course of phenological phases of potatoe and its determination by multiannual variability of air temperature in Poland

Eliza Kalbarczyk, and Robert Kalbarczyk

Poster C15

Role of air temperature in shaping variability of phenological dates of onion and cucumber in Poland

Robert Kalbarczyk

Poster C16

Course of phenological phases of potatoes and its determination by multiannual variability of air temperature in Poland

Eliza Kalbarczyk and Robert Kalbarczyk

Poster C17

Coastal communities and climate change: Discussing environmental risk and perspectives of tourism development in sociological terms

Maciej Kowalewski and Sebastian Kołodziejczakwona

Poster C18

The utilisaton of geo-statistical methods in the analysis of erosive and accumulative systems' changes of the South Baltic Sea

Wojciech Kuzminski and Dariusz Kloskowskiacek

Poster C19

The sea erosion -Present state and simulation of coastal changes in the South Baltic Sea

Christian Lis and Dariusz Kloskowski

Poster C20

Theoretical foundations of common programme of the insurance sector

Mieczyslaw Lozowski, Zdzislaw Obstawski and Magdalena Mojsiewiczzona

Poster C21

Insurability of agricultural production in the region of Poland

Mieczyslaw Lozowski, Zdzislaw Obstawski and Magdalena Mojsiewicz

Poster C22

Indicators for Integrated Coastal Zone Management in South-Eastern Baltic

Rosita Mileriene, Saulius Gulbinskas, Blazauskas Nerijus and Inga Dailidiene

Poster C23

Is the European blocking the precursor for the droughts in the southern Baltic region?

Gintautas Stankunavicius and Joanna Wibig

Session D: Prehistoric communities and climate change

Poster D05

Climate change influence on the human settlement in the region of the Świna River Gate (NW Poland)

Andrzej Piotrowski, Marek Dworaczyk, Justyna Relisko-Rybak and Jan Seidler

Poster D06

Climate changes and the prehistoric exploitation of siliceous raw materials: Pomeranian and European perspectives

Mikolaj Urbanowski

Session E: Climate variability and change impacts on Baltic Sea coasts

Poster E10

Up-to-date seacoast condition of the South-Eastern Baltic according to remote sensing and monitoring data

Valentina Bobykina, Vadim Boldyrev and Konstantin Karmanov

Poster E11

Development over time of the pleistocene outcrops at the steep coast of the Stoltera west of the harbour Rostock-Warnemünde

Johannes Brumme, Karsten Schütze and Heiko Hüneke

Poster E12

Is the 8200 cal y BP climatic event recorded in the southern Baltic Sea lagoony deposits? Microfossils (diatoms, cladocera) based study from the Rega River

Bernhard Cedro, Andrzej Witkowski, Agnieszka Kierzek, Edyta Zawisza and Anna Pędziszewska

Poster E13

Long-term changes in the rate of coastal erosion in the Kaliningrad Oblast (South-East Baltic)

Boris Chubarenko, Eugenii Burnashov, Vadim Boldyrev, Valentina Bobykina and Konstantin Karmanov

Poster E14

Laser scanning application for volumetric changes of the beach and dune analyses

Joanna Dudzinska-Nowak and Kazimierz Furmanczyk

Poster E15

Application of MODIS satellite data for the analysis of coastal water dynamics and suspended matter distribution in the South-East Baltic

Evgenia Gurova

Poster E16

Sinking Coasts - Geosphere, Ecosphere and Anthroposphere of the Holocene Southern Baltic Sea (SINCOS)

Jan Harff, Reinhard Dietrich, Friedrich Lüth and Eduardo Zorita

Poster E17

Soft-sediment deformation in Pleistocene sediments on the SW Baltic Sea (NE Germany) – Evidences for neotectonic activity

Gösta Hoffmann and Klaus Reicherter

Poster E18

How stable is the cliff north of the ‘Königsstuhl’ (Jasmund/Rügen)? – Coastal evolution during the last 50 years

Michael Kenzler, Karsten Obst, Heiko Hüneke and Karsten Schütze

Poster E19

Extreme storm surges in winter 2007 in the Pomeranian Bay and Szczecin Lagoon and their modelling

Halina Kowalewska-Kalkowska and Marek Kowalewski

Poster E20

Palynological determination of the age and ecological character of sediment series in the Szczecin Lagoon, southern Baltic

Malgorzata Latalowa, Anna Pedziszewska, Marcelina Zimny, Dawid Weisbrodt and Ryszard K. Borowka

Poster E21

The sea-defence function of coastal brackish grasslands and reed beds at the southern Baltic Sea region

Jasmin Lenzion, Iris Möller, Tom Spencer, Adrian Hayes and Stefan Zerbe

Poster E22

On the move: The steep cliff coast of Jasmund (Rügen Island)

Maria Wahle and Karsten Obst

Poster E23

Historical tsunami events on the southern Baltic coast

Andrzej Piotrowski

Poster E24

Morphotectonic map of European Lowland Area, sheets Szczecin, Dziwnów – Preliminary report

Andrzej Piotrowski and Justyna Relisko-Rybak

Poster E25

Luminescence dating of coastal sand deposits from the Baltic Sea - Examples from Darss-Zingst and Swina Gate

Tony Reimann, Jan Harff, Ryszard Borowka, Krystina Osadczuk and Sumiko Tsukamotołga

Poster E26

The state of Cape Hel

Stanislaw Rudowski and Maria Rucinska-Zjadacz

Poster E27

Analysis of changes in meteorological and hydrological characteristics for marine coast and lagoons in the Kaliningrad Oblast (South-East Baltic)

Zhanna Stont and Boris Chubarenko

Poster E28

Sedimentary structures of the coastal zone in the area of Pogorzelica, Poland

Pawel Sydor, Anna Mankowska, Tomasz A. Labuz and Stanislaw Musiel

Poster E29

The influence of the North Atlantic Oscillation on air temperature and precipitation along the southern Baltic Sea coast

Szymon Walczakiewicz, Piotr Laniewski and Roman Marks

Poster E30

Maximum and minimum sea levels on the Polish coast

Bernard Wisniewski and Tomasz Wolski

Poster E31

A long-term morphodynamic model and its application to the southern Baltic coast

Wenyan Zhang, Jan Harff and Chaoyu Wu

Poster E32

**The extreme storm surge at the German coasts of the Baltic Sea in November 1872 -
Reanalysis of the wind fields for coastal purposes**

Gudrun Rosenhagen and Ingrid Bork