



2<sup>nd</sup> Baltic Earth Conference

## **The Baltic Sea in Transition**

Helsingør, Denmark, 11 to 15 June 2018

## Programme Participant List



Danmarks  
Meteorologiske  
Institut



**Baltic Earth**  
Earth System Science for the Baltic Sea Region

Cover photo: Kronborg Castle (Marcus Reckermann)

## Conference Organizers and Sponsors

**Danish Meteorological Institute**  
Denmark



**Helmholtz-Zentrum Geesthacht**  
Germany



**Leibniz Institute for Baltic Sea Research  
Warnemünde**  
Germany



**Uppsala University**  
Sweden



**Swedish Meteorological and  
Hydrological Institute**  
Sweden



**Merge**  
Modelling the Regional and Global Earth System  
A joint initiative of Lund University, University of Gothenburg,  
Rossby Centre/SMHI, Linnaeus University, Chalmers University  
of Technology and Royal Institute of Technology





# Programme Overview

Time	Sunday 10 June	Monday 11 June	Tuesday 12 June	Wednesday 13 June	Thursday 14 June	Friday 15 June					
08:00		Registration									
08:10											
08:20											
08:30											
08:40											
08:50											
09:00							Overarching Talk	Overarching Talk	E	Overarching Talk	
09:10							Welcome Addresses	B	C	Regional variability of water and energy exchanges	G
09:20								Land-Sea-Atmosphere biogeochemical linkages	Natural hazards and high impact events	Topic E Discussion	Regional climate system modeling
09:30							Keynote Speeches	Break	Break		Topic E Discussion
09:40									Break	C continued	
09:50								Break		Topic C Discussion	Break
10:00									Break	C continued	
10:10	Break	C continued	Break								
10:20				Break	C continued	Break					
10:30	Break	C continued	Break								
10:40				Break	C continued	Break					
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11:00				Break	C continued	Break					
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11:30	Break	C continued	Break								
11:40				Break	C continued	Break					
11:50	Break	C continued	Break								
12:00				Break	C continued	Break					
12:10	Break	C continued	Break								
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13:20				Break	C continued	Break					
13:30	Break	C continued	Break								
13:40				Break	C continued	Break					
13:50	Break	C continued	Break								
14:00				Registration	BESSG Meeting #11	A	C	D	F		
14:10	Salinity Dynamics	Natural hazards and high impact events	Sea level dynamics, coastal morphology and erosion			Multiple drivers of regional Earth system changes					
14:20	Break	Break	Topic D Discussion			Topic F Discussion					
14:30							Break	Break	Topic D Discussion	Topic F Discussion	
14:40	Break	Break	Topic D Discussion			Topic F Discussion					
14:50							Break	Break	Topic D Discussion	Topic F Discussion	
15:00	Break	Break	Topic D Discussion			Topic F Discussion					
15:10							Break	Break	Topic D Discussion	Topic F Discussion	
15:20	Break	Break	Topic D Discussion			Topic F Discussion					
15:30							Break	Break	Topic D Discussion	Topic F Discussion	
15:40	Break	Break	Topic D Discussion			Topic F Discussion					
15:50							Break	Break	Topic D Discussion	Topic F Discussion	
16:00	Break	Break	Topic D Discussion			Topic F Discussion					
16:10				Break	Break		Topic D Discussion	Topic F Discussion			
16:20	Break	Break	Topic D Discussion			Topic F Discussion					
16:30				Break	Break		Topic D Discussion	Topic F Discussion			
16:40	Break	Break	Topic D Discussion			Topic F Discussion					
16:50				Break	Break		Topic D Discussion	Topic F Discussion			
17:00	Break	Break	Topic D Discussion			Topic F Discussion					
17:10				Break	Break		Topic D Discussion	Topic F Discussion			
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17:30				Break	Break		Topic D Discussion	Topic F Discussion			
17:40	Break	Break	Topic D Discussion			Topic F Discussion					
17:50				Break	Break		Topic D Discussion	Topic F Discussion			
18:00	Break	Break	Topic D Discussion			Topic F Discussion					
18:10				Break	Break		Topic D Discussion	Topic F Discussion			
18:20	Break	Break	Topic D Discussion			Topic F Discussion					
18:30				Break	Break		Topic D Discussion	Topic F Discussion			
18:40	Break	Break	Topic D Discussion			Topic F Discussion					
18:50				Break	Break		Topic D Discussion	Topic F Discussion			
19:00	Break	Break	Topic D Discussion			Topic F Discussion					
19:10				Break	Break		Topic D Discussion	Topic F Discussion			
19:20	Break	Break	Topic D Discussion			Topic F Discussion					
19:30				Break	Break		Topic D Discussion	Topic F Discussion			
19:40	Break	Break	Topic D Discussion			Topic F Discussion					
19:50				Break	Break		Topic D Discussion	Topic F Discussion			
20:00	Break	Break	Topic D Discussion			Topic F Discussion					
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20:50				Break	Break		Topic D Discussion	Topic F Discussion			
21:00	Break	Break	Topic D Discussion			Topic F Discussion					
21:10				Break	Break		Topic D Discussion	Topic F Discussion			
21:20	Break	Break	Topic D Discussion			Topic F Discussion					
21:30				Break	Break		Topic D Discussion	Topic F Discussion			
21:40	Break	Break	Topic D Discussion			Topic F Discussion					
21:50				Break	Break		Topic D Discussion	Topic F Discussion			

	Social and administrative
	Overarching scientific events
	Young scientist's events (only for eligible youngsters)
	Topic A Salinity dynamics
	Topic B Land-sea-atmosphere biogeochemical feedbacks
	Topic C Natural hazards and high impact events
	Topic D Sea level dynamics, coastal morphology and erosion
	Topic E Regional variability of water and energy exchanges
	Topic F Multiple drivers of regional Earth System changes
	Topic G Regional Climate System Modelling



# Programme

## Sunday, 10 June 2018

16:00 – 18:00      Registration

## Monday, 11 June 2018

8:00 – 9:50      Registration

### Opening ceremony

Welcome on behalf of Baltic Earth

10:00      **H.E. Markus Meier**  
Leibniz Institute for Baltic Sea Research Warnemünde, Germany  
Chair of the Baltic Earth Science Steering Group

Welcome addresses on behalf of the local host

**Marianne Thyrring**  
*Danish Meteorological Institute, Director*

**Karen Edelvang**  
*DTU Aqua, Section for Oceans and Arctic*

### Opening session - Keynote speeches

*Chair: Markus Meier*

10:30      **Natural hazards and socio-technical vulnerabilities in the Baltic Sea region**  
Guliano Di Baldassarre  
*Uppsala University, Sweden*

11:00      **Regional and Global Earth System Modelling Activities in MERGE**  
Paul Miller  
*Lund University, Sweden*

11:30      **Update on GEWEX in its 30<sup>th</sup> anniversary**  
Joan Cuxart  
*GEWEX Hydroclimate Panel (GHP)*

12:00 **International science collaboration for ocean climate**

Anne Christine Brusendorff

*International Council for the Exploration of the Sea  
(ICES)*

12:30 **Baltic Earth Research: Challenges in the international context**

Ulrich Bathmann

*Leibniz Institute for Baltic Sea Research Warnemünde, Germany*

**13:00 Lunch**



## Topic A: Salinity dynamics

*Chair: Urmaz Lips*

14:00 **Haline convection due to sea ice brine rejection in the Northern Baltic Sea**

Celine Gießel, H.E.M. Meier (*solicited*)

14:30 **Using model-based sub-regional EOF patterns to reconstruct temperature and salinity fields from observations**

Jüri Elken, M. Zujev

14:50 **Analysis of factors influencing the salinity of Baltic inflows and how these may change with sea level rise**

Lars Arneborg

15:10 **The Słupsk Sill overflow – mixing hot spot of eastward spreading saline water**

Volker Mohrholz, T. Heene

**15:30 Break**

*Chair: Andreas Lehmann*

16:00 **Long-term changes in stratification in the Baltic Sea**

Taavi Liblik, **U. Lips**

16:20 **Impact of the Atlantic Multidecadal Oscillation on Baltic Sea variability**

Florian Börgel, C. Frauen, T. Neumann, S. Schimanke, H. E. M. Meier



- 16:40 **Atmospheric Forcing of Major Baltic Inflows in a 750 Years Simulation**  
Claudia Frauen, F. Börgel, H.E.M. Meier
- 17:00 **Decadal variations in barotropic inflow characteristics and their relationship with Baltic Sea salinity variability**  
Katharina Höflich, A. Lehmann
- 17:20 **Topic A Open Discussion**  
*Chair: Urmias Lips and Andreas Lehmann*
- 17:50 End of Plenary Day 1
- 19:30 Ice Breaker**

## Tuesday, 12 June 2018

*Chair: Gregor Rehder*

- 9:00 **Baltic Earth, Outreach and Communication**  
Hans von Storch

### Topic B: Land-sea-atmosphere biogeochemical feedbacks

- 09:20 **Deep submarine groundwater discharge indicated by pore water chloride anomalies in the Gulf of Gdańsk, southern Baltic Sea**  
Beata Szymczycha, Ż. Kłostowska, K. Kuliński, A. Winogradow, J. Jakacki, Z. Klusek, M. Grabowski, A. Brodecka-Goluch, B. Graca, M. Stokowski, K. Koziorowska, D. Rak (*solicited*)
- 09:50 **Nutrient retention along the Swedish coastline**  
Moa Edman, K. Eilola, E. Almroth-Rosell, HEM. Meier, I. Wåhlström, L. Arneborg
- 10:10 **Organic matter mineralization in Baltic Sea deep waters: Rates and stoichiometry**  
Bernd Schneider
- 10:30 **The acid-base system of the Baltic Sea**  
Karol Kuliński, M. Stokowski, B. Szymczycha, K. Hammer, K. Koziorowska, A. Winogradow, M. Lengier, Ż. Kłostowska, B. Schneider
- 10:50 Break**

*Chair: Karol Kulinski*

- 11:20 **BONUS INTEGRAL: Improved Biogeochemical Monitoring and Greenhouse Gas Flux assessment for the Baltic Sea through high resolution trace gas data acquisition** (*BONUS-INTEGRAL contribution*)  
Gregor Rehder, A. Rutgersson, L. Laakso, K. Kuliński, U. Lips, H. W. Bange, K. Andreasson, J. Shutler, and the BONUS INTEGRAL science party
- 11:40 **High resolution nutrient data to unravel the post-spring bloom elemental cycling in the central Baltic Sea** (*BONUS-INTEGRAL contribution*)  
Anja Eggert, B. Schneider, T. Neumann, G. Rehder
- 12:00 **Using land-based sites for air-sea interaction studies**  
Anna Rutgersson, H. Pettersson, E. Nilsson, H. Bergström, M. B. Wallin, E. D. Nilsson, E. Sahlée, L. Wu, E. M. Mårtensson (*BONUS-INTEGRAL contribution*)
- 12:20 **Variation of organic carbon cycling modulated by benthic animals in the Baltic Sea in the past six decades**  
Wenyan Zhang, U. Daewel, K. Wirtz, C. Schrum
- 12:40 **Topic B Open Discussion**  
*Chair: Gregor Rehder and Karol Kulinski*

**13:10 Lunch**

## **Topic C: Natural hazards and high impact events**

*Chair: Martin Stendel*

- 14:10 **Reproduction of 10m-wind and sea level pressure fields during extreme storms with regional and global atmospheric reanalyses in the North Sea and the Baltic**  
Natacha Fery, B. Tinz, A. Ganske, L. Gates (*solicited*)
- 14:40 **Baltic storm surge event Axel along the German Baltic Sea coast in a climate perspective**  
Nicolaus Groll, R. Weisse, L. Gaslikova
- 15:00 **Storm surge modelling in the Baltic Sea using the high-resolution PM3D model**  
Halina Kowalewska-Kalkowska, M. Kowalewski
- 15:20 **The atmospheric circulation as a driver of dry spell in Poland**  
Joanna Wibig

15:40 End of Plenary Day 2

**16:15** Excursion to Kronborg Castle with guided tour followed by free evening

## Wednesday, 13 June 2018

*Chair: Joanna Wibig*

09:00 **Baltic Sea Operational Oceanographic System (BOOS) – a stimulator to Baltic Earth system research**  
Jun She, P. Andersson, T. Köuts, D. Mirawslow, J. H.Reißmann, L. Tuomi

### Topic C: **Natural hazards and high impact events**

09:20 **Non-stationary modeling of extremes in water levels along the Baltic Sea coast**  
Nadia Kudryavtseva, K. Pindsoo, T. Soomere

09:40 **Rogue Waves in the southern North Sea**  
Ina Teutsch

10:00 **Integrated coastal hazard risk reduction and management – a closer look at the dynamical damage cost methodology used in the COHERENT project**  
Kirsten Halsnæs, M. A. Dahl Larsen, N. Drønen, F. Bach Kristensen, C. Sørensen, B. Brahtz Christensen

**10:20** **Break**

10:50 **ERA5: High temporal and spatial resolution reanalyses as a tool to investigate high impact events and other natural hazards in the Baltic Earth region**  
Martin Stendel

11:10 **Topic C Open Discussion**  
*Chair: Martin Stendel and Joanna Wibig*

## Topic D: Sea level dynamics, coastal morphology and erosion

*Chair: Kai Myrberg*

- 11:40 **Building natural morphologies for effective beach nourishment**  
Kevin Parnell (*solicited*)
- 12:10 **Identification of extreme storm tides with high impact potential for the German North Sea coast**  
Ralf Weisse, L. Gaslikova, I. Grabemann
- 12:30 **Sea level change: mapping municipality needs for climate information**  
Kristine S. Madsen, J. Murawsky, J. She, P. L. Langen
- 12:50 **Interannual coastal processes in Estonia, Peraküla beach monitored by laser scanning technology**  
Maris Eelsalu, K. Pindsoo, T. Soomere, K. Julge
- 13:10 Lunch**
- Chair: Ralf Weisse*
- 14:10 **On the water level measurements in the Gulf of Riga during 1961–2016**  
Rain Männikus, T. Soomere, N. Kudryavtseva
- 14:30 **Radar remote sensing of the meteo-marine parameters in the Baltic Sea**  
Sander Rikka, R. Uiboupin, A. Pleskachevsky, V. Alari, S. Jacobsen, T. Kõuts
- 14:50 **Modeling patchiness on the sea surface caused by the interplay of winds and currents in the Gulf of Finland**  
Andrea Giudici, J. Kalda, T. Soomere
- 15:10 **Seasonal variability of diurnal seiches in Gulf of Riga**  
Vilnis Frishfelds, J. Sennikovs, U. Bethers
- 15:30 **Topic D Open Discussion**  
*Chair: Kai Myrberg and Ralf Weisse*
- 16:00 Break**

## Topic E: Regional variability of water and energy exchanges

*Chair: Irina Danilovich*

- 16:30      **Enhancement of radar rainfall estimates for Estonian territory through optical flow temporal interpolation**  
Jorma Rahu, T. Voormansik, P. Post (*solicited*)
- 17:00      **The critical role of atmospheric forcing for simulating the dynamics of the Baltic Sea ecosystem**  
Ute Daewel, C. Schrum, B. Geyer
- 17:20      **Changing effect of large scale atmospheric circulation on the regional climate variability of the Baltic Sea over the period 1948-2017**  
Andreas Lehmann, P. Post, K. Höflich
- 17:40      **A descriptive analysis of the linkage between the vertical stratification and current oscillations in the Gulf of Finland**  
Irina Suhhova, T. Liblik, M.-J. Lilover, **U. Lips**
- 18:00      End of Plenary Day 3
- 18:30      **Young Scientists Event**  
*“Speed Dating” and BBQ (sponsored by Danish Meteorological Institute)*

## Thursday, 14 June 2018

*Chair: Piia Post*

- 09:00      **Model estimates of climate and streamflow changes in the Western Dvina River basin**  
Irina Danilovich, S. Zhuravlev, L. Kurochkina, A. Kvach
- 09:20      **Water balance assessment using SWAT for Russian subcatchment of Zapadnaya Dvina River**  
Pavel Terskii, A. Kuleshov
- 09:40      **Wind and Turbulence Measurements with RPA during the ISOBAR Campaign**  
Alexander Rautenberg, M. Schön, K. zum Berge, H. Mashni, P. Manz, S. Kral, L. Baserud, J. Reuder, R. Kouznetsov, E. O'Connor, I. Suomi, T. Vihma, J. Bange
- 10:00      **Temporal behavior of atmospheric circulation types in Marmara Region (NW Turkey)**  
Hakki Baltaci

10:20 **Topic E Open Discussion**  
*Chair: Irina Danilovich and Piia Post*

10:50 **Break**

 **Topic F: Multiple drivers of environmental changes**

*Chair: Anders Omstedt*

11:20 **Quantifying the land-use climate forcing in the past: a modelling approach focusing on Europe and the Holocene (LandClim II)**  
Esther Githumbi, A.-K. Trondman, R. Fyfe, E. Kjellström, J. Lindström, Z. Lu, F. Mazier, A. B. Nielsen, A. Poska, B. Smith, G. Strandberg, S. Sugita, Q. Zhang, M.-J. Gaillard (*solicited*)

11:50 **Long term impacts of societal and climatic changes on nutrient loading to the Baltic Sea**  
Marianne Zandersen, S. Pihlainen, K. Hyytiäinen, H. Estrup Andersen, M. Jabloun, E. Smedberg, B. Gustafsson, A. Bartosova, H. Thodsen, H.E.M. Meier, S. Saraiva, J. E. Olesen, D. Swaney, M. McCrackin

12:10 **Variability of nutrient concentrations in the western Baltic Sea between 1995 and 2017**  
Joachim Kuss, G. Nausch, M. Naumann, D. Schulz-Bull

12:30 **Recently accelerated oxygen consumption rates amplify deoxygenation in the Baltic Sea – observations and model results**  
H. E. Markus Meier, G. Väli, M. Naumann, K. Eilola, C. Frauen

12:50 **Hypoxic to euxinic conditions in the Baltic Sea 1969-2016 – a seasonal to decadal spatial analysis**  
Michael Naumann, S. Feistel, G. Nausch, T. Ruth, J. Zabel, M. Plangg, M. Hansson, L. Andersson, L. Viktorsson, E. Lysiak-Pastuszek, R. Feistel, D. Nehring, W. Matthäus, H. E. M. Meier

13:10 **Lunch**

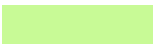
*Chair: Hans von Storch*

14:10 **Shipping and the environment in the Baltic Sea region - results of the BONUS SHEBA project.**  
Markus Quante, J. Moldanova, M. Eriksson, E. Fridell, J.-P. Jalkanen, V. Matthias, J. Tröltzsch, M. Kalr, I. Maljutenko and the Sheba Team

- 14:30      **Temperature variability of the Baltic Sea since 1850 in model simulations and observations and attribution to variability in the atmosphere**  
Madline Kniebusch, H. E. M. Meier, T. Neumann
- 14:50      **Physical oceanography sets the scene for the Marine Strategy Framework Directive implementation in the Baltic Sea**  
Kai Myrberg, S. Korpinen, L. Uusitalo
- 15:10      **Topic F Open Discussion**  
*Chair: Anders Omstedt and Hans von Storch*
- 15:40**      **Young Scientists Event**  
Career Talk and Q&A
- 16:40      **Poster Session (All topics) with Coffee and Tea**  
See page 12 of this programme
- 19:00      End of scientific programme Day 4
- 19:30**      **Conference Dinner**

## Friday, 15 June 2018

*Chair: Stefan Hagemann*

- 09:00      **The development of climate science of the Baltic Sea region**  
Anders Omstedt
-  **Topic G: Regional climate system modelling**
- 09:20      **Do we know more about climate change than during PRUDENCE?**  
Ole Bøssing Christensen, **M.A.D. Larsen**, M. Drews, M. Stendel, J. H. Christensen (*solicited*)
- 09:50      **Evaluation of a regional climate system model for the Baltic Sea region**  
Sandra-Esther Brunnabend, M. Placke, C. Frauen, F. Börgel, M. Schmidt, T. Neumann, H. E. M. Meier
- 10:10      **Assessment of ocean circulation models for their applicability in the Baltic Sea**  
Manja Placke, H. E. M. Meier, U. Gräwe, T. Neumann, Y. Liu

- 10:30**      **Break**
- Chair: Matthias Gröger*
- 11:00      **Projected Changes in Baltic Sea Upwelling in Climate Change Scenarios**  
Christian Dieterich, M. Gröger, S. Schimanke, L. Arneborg, H. E. M. Meier
- 11:20      **High resolution discharge simulations over Europe and the Baltic Sea catchment**  
Stefan Hagemann, T. Stacke, H. T. M. Ho-Hagemann
- 11:40      **The BALTIC and NORTH SEAS CLIMATOLOGY (BNSC) - a comprehensive, observation-based data product of atmospheric and hydrographic parameters**  
Iris Hinrichs, A. Jahnke-Bornemann, V. Gouretski, A. Andersson, B. Klein, R. Saddikni, N. Schade, D. Stammer, B. Tinz
- 12:00      **Copernicus regional reanalysis for Europe**  
Semjon Schimanke, P. Lundén, M. Ridal, L. Isaksson, L. Edvinson
- 12:20      **Climate Change in Estonia – warmer weather patterns or more warm weather patterns?**  
Mait Sepp, P. Post, M. Lakson
- 12:40      **Topic G Open Discussion**  
*Chair: Stefan Hagemann and Matthias Gröger*
- 13:10      Wrap-Up and Farewell
- 13:30**      **Lunch and End of the Conference**



## Posters

**Dedicated poster session on Thursday 14 June in the afternoon.**

All posters are on display during the whole conference.

Poster sequence is alphabetically within topics.

### Topic A: Salinity dynamics in the Baltic Sea

- A1 **Water exchange through the Danish Straits with global mean sea level rise**  
Sandra-Esther Brunnabend, U. Gräwe, X. Lange, H. E. M. Meier
- A2 **Hydrophysical conditions in the southern part of the Baltic Sea in summer and autumn seasons of 2016-2017**  
Maria Golenko, V. Paka, A. Kondrashov, A. Korzh, V. Zhurbas
- A3 **Major Baltic Inflow statistics - revisited**  
Volker Mohrholz
- A4 **Benthic foraminifera distribution in the South-Eastern Baltic Sea in relation to the North Sea Water Inflow**  
Ekatarina Ponomarenko, E. Dorokhova, V. Krechik
- A5 **Salinity dynamics and inter-sub-basin transport in the Baltic Sea**  
Jun She, J. Murawski

### Topic B: Land-Sea-Atmosphere biogeochemical linkages

- B1 **The Impact of Water Constituents on Radiative Heat Transfer in the Open Ocean and Shelf Seas**  
Bronwyn Cahill, J. Fischer, U. Graewe, H. Burchard, J. Wilkin, J. Warner, N. Ganju
- B2 **Spatial and seasonal phosphorus changes in the water column of an estuary of the southern Baltic Sea**  
Lisa Felgentreu, G. Nausch, F. Bitschofky, M. Nausch, D. Schulz-Bull
- B3 **Air-sea Methane fluxes in the Baltic Sea using eddy covariance**  
Lucia Gutiérrez-Loza, A. Rutgersson, M. B. Wallin, E. Sahlée
- B4 **The structure of the CO<sub>2</sub> system in the mouths of the continental rivers: Odra, Vistula, Leba and Slupia**  
Karoline Hammer, K. Kuliński, B. Szymczycha, K. Kozirowska, M. Stokowski, B. Schneider

- B5      **Measuring turbulent sea-air CO<sub>2</sub> fluxes with a closed-path gas analyser**  
*(BONUS-INTEGRAL contribution)*  
 Martti Honkanen, J.-P. Tuovinen, T. Laurila, T. Mäkelä, J. Hatakka, S. Kielosto,  
 L. Laakso
- B6      **Understanding the ecocline at shallow coasts of the Baltic Sea**  
 Gerald Jurasinski, M. Voss, M. Janssen, B. Lennartz, the Baltic TRANSCOAST  
 Team
- B7      **Hydrochemical characterization of SGD in the Bay of Puck, Southern Baltic  
 Sea**  
 Żaneta Kłostowska, B. Szymczycha, K. Kuliński, M. Lengier, L. Łęczyński
- B8      **Sediments of the Baltic Sea as a source of C, N and P**  
 Monika Lengier, B. Szymczycha, K. Kuliński, A. Brodecka-Goluch, Ż. Kłostowska
- B9      **A Baltic Sea Ecosystem Model with non-Redfield Stoichiometry for Carbon  
 Fixation** *(BONUS-INTEGRAL contribution)*  
 Thomas Neumann, A. Eggert
- B10     **The chemical composition of *Mytilus trossulus* carbonate shells from the  
 southern Baltic Sea: implications for environmental monitoring**  
 Anna Piwoni-Piórewicz, P. Kukliński, S. Strekopytov, E. Humphreys-Williams, J.  
 Najorka, A. Iglowska
- B11     **Transformations of the carbonate system in the Odra estuary**  
 Marcin Stokowski, K. Kuliński, B. Schneider, G. Rehder, J. Müller
- B12     **Eddies' impact on biological processes – A case study in the Western Baltic  
 Sea for the algal blooming season 2010**  
 Rahel Vortmeyer-Kley, M. Berthold, U. Gräwe, U. Feudel

## Topic C: Natural hazards and high impact events

- C1      **Reliability of HIPOCAS wind wave hindcast data for the southern Baltic Sea**  
 Witold Cieślikiewicz, A. Cuiat
- C2      **Variability of wind storms during cold season in Northern Europe over the  
 past 70 years**  
 Indre Gecaite
- C3      **Extreme sea levels on the German Baltic Sea coast**  
 Jürgen Holfort, B. Weidig, I. Perlet, S. Schwegmann

- C4        **Changes in drought indices in Estonia during the period of the contemporary climate warming**  
Jaak Jaagus, A. Aasa
- C5        **Spatial variability of extreme precipitation in Estonia**  
Jüri Kamenik, P. Post, J. Jaagus, A. Kull, A. Kaasik, S. Aņiskeviča
- C6        **Strong currents in a cross section of two narrow straits in the Finnish Archipelago Sea**  
Hedi Kanarik, L. Tuomi, **E. Miettunen**, R. Hietala, P. Alenius
- C7        **Causes, frequency and strength of severe high water events in the Odra River mouth area (the southern Baltic Sea)**  
Halina Kowalewska-Kalkowska
- C8        **Supercomputer-aided analysis of wave impact on coastal infrastructure**  
Andrey Kozelkov, R. Shagaliev, R. Dmitriev, A. Kurkin, E. Pelinovskiy
- C9        **Three-dimensional LOGOS simulations of a Chelyabinsk-like meteorite drop into the Baltic Sea**  
Vadim Kurulin, A. Kozelkov, R. Shagaliev, E. Tyatushkina, **A. Kurkin**
- C10       **The Connection of Storms and Significant Wave Heights in the Baltic Sea with Indices of Large-scale Atmospheric Circulation (NAO, AO, SCAND)**  
Alisa Medvedeva, S. Myslenkov, V. Arkhikin
- C11       **A comparison of observed extreme water levels at the North- and Baltic Sea with extremes derived from a regionally coupled ocean-atmospheric climate model (MPI-OM) and their impact on dewatering potential at Kiel-Canal**  
Jens Möller, B. Tinz
- C12       **Temporal development of residence times and the power impact to the german Baltic sea coast induced by storm surge events**  
Justus Patzke, J. Kelln, D. Salecker, P. Froehle
- C13       **Wave hindcast statistics in the Gulf of Bothnia**  
Jani Särkkä, L. Tuomi, R. Marjamaa, R. Hordoir, K. Eilola
- C14       **Distribution of droughts and dry winds in the Black Sea Steppe province under current climate conditions**  
Inna Semenova, M. Slizhe
- C15       **On Cyclones Causing Storm Surges in Pärnu and Narva-Jõesuu**  
Mait Sepp, P. Post, Ü. Suursaar

- C16 **The regional features of cyclonic activity and frequency of weather extremes over the territory of Belarus**  
Katsiaryna Sumak, I. Semenova
- C17 **Seasonal and long-term dynamics of snow cover regime in Estonia**  
Birgit Viru, J. Jaagus
- C18 **Extreme rainfall analysis and estimation of intensity-duration-frequency curves using dual polarization weather radar data of Estonia and Italy**  
Tanel Voormansik, R. Cremonini, D. Moisseev, P. Post

#### Topic D: **Sea level dynamics, coastal morphology and erosion**

- D1 **Distinctive features of surface circulation in the southeastern part of the Baltic Sea by subsatellite oceanographic experiments held in 2014-2017**  
Evegeny Krayushkin, O. Y. Lavrova, K. R. Nazirova
- D2 **Modeling of internal waves in the Baltic Sea**  
Andrey Kurkin, O. Kurkina, E. Pelinovsky, E. Rouvinskaya
- D3 **Observations, modeling and analysis of internal gravity waves in Sea of Okhotsk**  
Oxana Kurkina, A. Kurkin, E. Rouvinskaya, A. Giniyatullin
- D4 **Validation of altimetry-derived regional sea level trends based on reconstruction of Baltic Sea 2D sea level of the last century**  
Kristine Skovsgard Madsen, J. L. Høyer, J. She, P. Knudsen, Ü. Suursaar
- D5 **Spatial and temporal features of synoptic and mesoscale Baltic sea level variability**  
Igor Medvedev, A. Medvedeva
- D6 **Modelling the Development of Large-Scale Mud Deposits in the Baltic Sea Basins driven by energetic events**  
Lucas Porz, W. Zhang, C. Schrum
- D7 **Scattering and backscattering properties of Estonian coastal waters**  
Mirjam Randla, M. Ligi, T. Kutser, A. Ansper, K. Alikas
- D8 **Coastal erosion on the Kotlin Island's coastline in the Gulf of Finland, the Baltic Sea: a model study to elaborate mitigation measures**  
Vladimir Ryabchenko, I. O. Leontyev, D. V. Ryabchuk, A. Y. Sergeev, A. Y. Dvornikov, S. D. Martyanov, V. A. Zhamoida

- D9 **Geographical diversity in the occurrence of extreme sea levels on the coasts of the Baltic Sea**  
Tomasz Wolski, B. Wiśniewski

 **Topic E: Regional variability of water and energy exchanges**

- E1 **Impact of «small» climate-forming factors in the formation of the hydrological regime of the basins of the Zapadnaya Dvina and Neman Rivers in Belarus**  
Maryia Asadchaya, A. Kvach, L. Zhuravovich
- E2 **Analysis of bottom and wind friction velocities in inflow and non-inflow periods in the Baltic Sea**  
Maria Golenko, V. Zhurbas
- E3 **Relationship between satellite measured soil moisture and meteorological parameters**  
Viktorija Mačiulytė
- E4 **Evaluating mean circulation and transport in the Archipelago Sea**  
Elina Miettunen, H. Tuomi, H. Kanarik, P. Alenius, K. Myrberg
- E5 **The maximum runoff of small rivers of the Mountainous Crimea flowing into the Black Sea in modern climatic conditions**  
Valeriya Ovcharuk, O. Todorova, E. Myrza
- E6 **On Summer Low Water Periods in Estonian Rivers in the Years 1951-2016**  
Mait Sepp
- E7 **Assessment of changes in river runoff for small and medium-sized rivers in the Russian part of the Baltic Sea basin under non-stationary climatic conditions**  
Valeriy Vuglinski, D. Timchenko
- E8 **Cloud and radiation variability and trends for the northern Baltic region as observed and modelled for present day climate and future scenarios**  
Ulrika Willén

 **Topic F: Multiple drivers of regional Earth system changes**

- F1 **The Eckernförde Bay (SW Baltic Sea) through the ages: Time-series measurements at the Boknis Eck time-series station**  
Hermann Bange

- F2 **Hydroclimatic dynamics and peatland land cover response over last centuries – A multi-proxy reconstruction from hydro-meteorological data, peat stratigraphy, testate amoebas and remotely sense approaches**  
Ieva Baužienė, J. Edvardsson, M. Lamentowicz, J. Taminskas, R. Šimanauskienė
- F3 **Changes of the frames of agroclimatic areas in the XXI century on the territory of Belarus**  
Viktor Melnik
- F4 **Influence of the Grodno hydroelectric power station on the hydrological regime of the Neman River (Belarus, the Baltic Sea basin).**  
Ala Pauros, A. Kvach, L. Zhuravovich
- F5 **Pinus sylvestris L. inter- and intra-annual growth response to climatic conditions**  
Egidijus Rimkus, R. Pukienė, A. Vitas, J. Kažys

### Topic G: Regional climate system modeling

- G1 **Evaluation of the ERA-20C data using surface observations in the Hardanger Glacier, Norway**  
Bhuwan Chandra Bhatt, A. Sorteberg
- G2 **Assessment of Different Wind Products as Forcing for Baltic Sea Ocean Models**  
Claudia Frauen, U. Gräwe, H. E. M. Meier
- G3 **Implementing surface wave effects into an ocean general circulation model of the Baltic Sea: A semi-empirical type wave model approach**  
Katharina Höflich, A. Lehmann
- G4 **Different methods to handle seasonal ice cover in wave modeling**  
Riikka Marjamaa, L. Tuomi, J.-V. Björkqvist, H. Kanarik, J. Vainio, R. Hordoir

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