Curriculum Vitae Prof. Dr. Markus Meier

Name: Hans Eberhard Markus Meier

Current employment: Head of the Department of Physical Oceanography and Instrumentation at the Leibniz Institute for Baltic Sea Research Warnemünde

Leibniz-Institut für Ostseeforschung Warnemünde
Seestraße 15
18119 Rostock, Germany
Tel.: +49 381 5197 150
E-mail: markus.meier@iow.de

Main fields of current research

- numerical modeling of the Baltic Sea and Arctic Ocean
- sea ice modeling
- ice-ocean model inter-comparison
- sub-grid scale parameterizations (e.g. turbulence, gravity driven dense bottom currents) in ocean circulation models
- variational data assimilation using the adjoint method
- water exchange through straits
- reconstruction of Baltic Sea climate of the 20th century, paleoclimate studies
- climate variability and climate sensitivity of the Baltic Sea and Arctic Ocean
- detection and attribution of climate change
- dynamical downscaling using regional climate models
- scenario simulations for the Baltic Sea and impact studies (e.g. Baltic ringed seal populations, flooding, coastal erosion, and spatial development)
- ensemble technique for climate change scenario simulations
- atmosphere-ice-ocean interaction
- heat and water cycles in uncoupled and coupled atmosphere-ice-ocean models
- performance of massively parallel ocean codes
- coupled physical-biogeochemical modeling to study the marine ecosystem in past and future climates
- measures against eutrophication

Degrees and merits

- High School Certificate, Neumünster, Germany, November 1981
- Diploma in Physics (Experimental, Theoretical and Applied Physics, Astronomy, thesis at the Institute of Fundamental and Applied Nuclear Physics), University of Kiel, Germany, September 1989
- Doctor of natural science (Physical Oceanography, Physics and Theoretical Physics, thesis at the Department of Theoretical Oceanography, Institute of Marine Research), University of Kiel, July 1996

- Docent (associate professor) in physical oceanography, University of Göteborg, January 2005 (Docent lecture on "Användning av tredimensionella oceanmodeller för att simulera cirkulationen på olika tids- och rumsskalor - vad fungerar bra respektive mindre bra")
- Professor at the Faculty of Science, Stockholm University, Stockholm University, April 2012
- Professor (chair) position for Physical Oceanography (W3) at the University of Rostock and head of the department Physical Oceanography and Instrumentation at the Leibniz Institute for Baltic Sea Research Warnemünde (IOW), Germany, October 2015

Scientific employments

1986-1989: Teaching contracts at the Institute of Fundamental and Applied Nuclear Physics, University of Kiel

1989: Scientific employee at the Institute of Fundamental and Applied Nuclear Physics, University of Kiel

1991-1996: Ph.D. student at the Department of Theoretical Oceanography, Institute of Marine Research, Kiel

1996-1997: Scientific employee at the Department of Theoretical Oceanography, Institute of Marine Research, Kiel

1997: Teaching contract, University of Kiel

1997-2006: Scientific employee at the Rossby Centre, SMHI, responsible for the development of a 3D coupled ice-ocean model for the Baltic Sea and for the Arctic Ocean, Nordic Seas, and North Atlantic Ocean

July 2006 - August 2015: Head of the Oceanographic Research Unit at the Research Department at SMHI (scientifically and economically responsible for 16-19 scientists)

August 2006 - July 2012: 20% teaching and supervising as adjoint lecturer ("adjungerad lektor i meteorologi och oceanografi") with affiliation at the Department of Meteorology at Stockholm University (MISU)

August 2012 - September 2015: 20% teaching and supervising as adjunct professor in oceanography with affiliation at the Department of Meteorology at Stockholm University (MISU)

October 2015 – November 2022: 20% scientific employee at the Research Department, SMHI, project coordinator

since October 2015: Head of the Department of Physical Oceanography and Instrumentation at the Leibniz Institute for Baltic Sea Research Warnemünde, and professor at Rostock University (4 hours per week teaching obligations)

Training courses

Jun 2001: PRISM/COACH summer school on "Climate modelling in Europe" (Les Diablerets, Switzerland, one week)

May 2004: university teaching ("Högskolepedagogisk introduktionskurs", Göteborg University, one week)

Nov 2006: project management and leadership course for members of steering groups ("Praktisk projektstyrning (PPS) Styrgrupp", Tieto Enator, 1 day)

Jan/Feb 2007: leadership course ("Forma Ledarutveckling", 4 days)

Feb 2010: media training course ("medie/budskapsträning", 1 day)

Feb/May 2010: leadership course ("ledarutveckling, Ekebacka Konsult AB", 4 days)

Mar 2024: course on "Perspectives Unveiled: Navigating Perception and Inclusion"

Invited visiting scientist

Aug 1997: Department of Meteorology, Stockholm University, Stockholm, Sweden

Feb 2003: International Arctic Research Center, University of Alaska, Fairbanks, U.S.A.

Nov 2005: Institute of Oceanology, University of Gdansk, Gdynia, Poland

Editoral tasks:

- 2009-2022: Topic Editor of the EGU journal Ocean Science (http://www.oceanscience.net/index.html)
- winter/spring 2012: Member of the Guest Editorial Board of the AMBIO special issue "ECOSUPPORT - Different Ecosystem Drivers Under Future Climate Scenarios in the Baltic Sea" (Volume 41, Number 6, September 2012)
- 2016-2017: Guest Editor of the Special Issue on the 10th Baltic Sea Science Congress in Estuarine, Coastal and Shelf Science, Volume 195, Pages 1-124 (5 August 2017): Understanding the Baltic Sea. Edited by **H.E. Markus Meier**, Laimdota Kalniņa and Anda Ikauniece.
- 2017: Guest Editor of the Special Issue on the 1st Baltic Earth Conference on "Multiple drivers for Earth system changes in the Baltic Sea region" in Nida, Curonian Spit, Lithuania, 13-17 June 2016, in Earth System Dynamics.
- 2018-2019: Guest Editor of the HyMeX Special Issue on "Hydrological cycle in the Mediterranean" in the EGU journals Atmospheric Chemistry and Physics, Hydrology and Earth System Sciences, Ocean Science, Natural Hazards and Earth System Sciences, Geoscientific Model Development, Atmospheric Measurements Techniques
- 2018-2019: Guest Editor of the Special Issue on the 2nd Baltic Earth Conference on "The Baltic Sea Region in Transition" in Helsingør, Denmark, 11-15 June 2018, in Frontiers in Earth Science
- 2019-2021: Lead Guest Editor of the Special Issue of the Baltic Earth Assessment Reports project in Earth System Dynamics
- 2019-2020: Guest Editor of the Special Issue "Understanding the Indian Ocean System: past, present and future" in Ocean Science

- 2021-2023: Guest Editor of Oceanologia for a thematic Baltic Earth issue "Marginal Seas", https://www.sciencedirect.com/journal/oceanologia/vol/65/issue/1
- 2023-2024: Guest Editor of Special Issue on the 4th Baltic Earth conference on "Assessing the Baltic Sea Earth System", 30 May - 3 June 2022, Jastarnia, Hel Peninsula, Poland, in Oceanologia, https://www.sciencedirect.com/journal/oceanologia/vol/66/issue/1
- 2024-2025: Topic Editor of the Special Issue on the 5th Baltic Earth conference on "New Challenges for Baltic Sea Earth System Research", 13 - 17 May 2024, Jurmala, Latvia, in Frontiers in Earth Science

Referee for research councils:

- Member of the Changing Arctic Ocean Moderating Panel, Natural Environment Research Council (NERC), Great Britain
- Natural Sciences and Engineering Research Council of Canada (NSERC)
- Helmholtz Association of National Research Centres, Germany
- Swedish Research Council for Environment, Agricultural Sciences and Spatial Planning (FORMAS)
- Member of the evaluation panel of the Swedish Research Council (VR)
- Swedish Environmental Protection Agency (SEPA)
- The Netherlands Organisation for Scientific Research (NWO, the Dutch Research Council)
- Estonian Science Foundation
- Intergovernmental Panel on Climate Change (IPCC), fourth and fifth assessment reports (AR4, AR5)
- Canadian Foundation for Climate and Atmospheric Sciences (CFCAS)
- University of Alaska Coastal Marine Institute (CMI)
- National Council for Science, Higher Education and Technological Development in the Republic of Croatia
- Oceanic and Atmospheric Research (OAR) Awards Board, 2021 OAR Outstanding Scientific Paper Awards review
- German Research Foundation (DFG)
- German Ministry of Education and Research (BMBF)

Referee for international scientific journals:

1. Science
2. Nature communications
3. Geophysical Research Letters
4. Environmental Research Letters
5. Environmental Research Communications

6. Journal of Geophysical Research – Oceans
7. Journal of Physical Oceanography
8. Tellus
9. Climate Dynamics
10. Continental Shelf Research
11. Monthly Weather Review
12. International Journal of Climatology
13. Ocean Sciences
14. Journal of Climate
15. Journal of Marine Research
16. Journal of Marine Systems
17. Boreal Environmental Research
18. Ocean Dynamics
19. Climate Research
20. Journal of Sea Research
21. AMBIO
22. Nordic Hydrology
23. Estuarine, coastal and shelf science
24. Oceanologia
25. Geophysica
26. Marine Ecology Progress Series
27. Global and Planetary Change
28. International Review of Hydrobiology
29. International Journal of Earth Sciences
30. Environmental Modeling and Assessment
31. Climate of the Past
32. Ocean Engineering
33. History of Oceanography Yearbook
34. Great Lakes Research
35. Climatic Change
36. Eos (newsletter of the American Geophysical Union, AGU)
37. Geoscientific Model Development
38. Ocean Modelling
39. Limnology and Oceanography
40. Ecological Engineering
41. Ecological Applications

42. Journal of Environmental Management
43. Progress in Oceanography
44. Meteorologische Zeitschrift
45. Biogeosciences
46. Environmental Science and Technology
47. Deep-Sea Research Part II
48. Journal of Advances in Modelling Earth Systems
49. Scientific Reports
50. Marine Pollution Bulletin
51. Pure and Applied Geophysics
52. State of the Planet
53. EGUsphere
54. Science of the Total Environment
55. Regional Sustainability
56. Communications Earth & Environment
57. Regional studies in marine science
58. Frontiers in Marine Science
59. Frontiers in Earth Science
60. Frontiers in Environmental Science

Referee for other publications:

- Climate report for the Hamburg region, Germany

Awards:

Oct 2011: the project ECOSUPPORT received the Bonus+ Award 2011 for the best public engagement activity or product for the GEODOME stakeholder decision support by scientific communication (2000 Euro)

Apr 2021: selected for the Reuters list of the world's top climate scientists identifying and ranking 1,000 climate academics (no. 934, 131 publications, 5,541 citations)

Sep 2023: Professor Kazimierz Demel Medal by the National Marine Fisheries Research Institute, Gdynia, Poland.

Grants (see detailed list below)

Additional assignments:

2000-2001: Member of the evaluation group for ocean modeling at SMHI (Bengtsson et al., 2001)

2001: Member of the second evaluation group for ocean modeling at SMHI

2002-2005: External expert and advisor of the EU funded Centre of Excellence for Baltic Development, Education and Research (BALTDER), Institute of Oceanology, University of Gdansk, Gdynia, Poland

2005: Member of the writing team of chapter 2 (Past and current climate change, detection and attribution) and chapter 3 (Projections of future climate change) of the BALTEX Assessment of Climate Change for the Baltic Sea Basin (BACC)

2006-2015: Member of the steering group of the Research Department at the Swedish Meteorological and Hydrological Institute

2007-2018: Chair of the BALTEX/Baltic Earth Working Group on the "Added Value of Regional Coupled Atmosphere-Ocean Models" (http://www.baltex-research.eu/organisation/bwg_rcm.html). The working group will conduct working group meetings, organizing workshops open for all interested scientist on the topic, and setting up international collaborations and projects financed by the EU, BONUS or national funding agencies.

2009-2011: Coordinator of the international BONUS+ project "ECOSUPPORT" with 11 involved partners, about 1.6 mio Euro, 2009-2011,

2011-2016: Lead author for the North Sea Region Climate Change Assessment (NOSCCA), chapter 3.2: Projected changes in the North Sea

2011-2014: Lead author for the Assessment of Climate Change in the Baltic Sea Region II (BACC II), chapter 13: Projected Change - Marine Physics

2011-2012: Member of the Working Group on Drafting a Science Plan for a scientific research network following BALTEX Phase II (PostBALTEX).

2012-2015: Member of the OSPAR Intersessional Correspondence Group on Eutrophication Modelling

2013: Member of the Swedish Research Council Review Panel (NT-8)

2013-2018: Chair of the Baltic Earth Working Group on Baltic Sea scenario simulations

2013-2014: Chair of the Interim Science Steering Group of the BALTEX successor program "Baltic Earth" (http://www.baltex-research.eu/)

since 2014: Chair of the Science Steering Group of "Baltic Earth" (http://www.balticearth.eu/)

2015-2016: Member of the writing team of the Baltic Earth science plan

since 2015: Member of the Faculty of Mathematics and Natural Sciences at Rostock University

2015 - 2024: Member of the steering group of the coastal ocean modellers within the strategy group of coastal research of the Consortium of German Marine Research (Die nationale Arbeitsgruppe Küstenozeanmodellierung in der Strategiegruppe Küstenforschung Konsortium Deutsche Meeresforschung)

since 2016: Member of the Interdisciplinary Faculty at Rostock University, Department of Maritime Systems

2016-2022: Board Member of the scientific committee of the HLRN (Wissenschaftlicher Ausschuss des Norddeutschen Verbundes für Hoch- und Höchstleistungsrechnen)

2016-2023: Representative of the Leibniz Institute for Baltic Sea Research Warnemünde within the German Climate Consortium (Deutsches Klima-Konsortium e.V., DKK)

2018-2022: Coordinator of the Baltic Earth Assessment Reports (BEAR) Project and Lead Author of the third Assessment of Climate Change for the Baltic Sea Region

2019, 2022: member of the European Geoscience Union (EGU)

November 2018 – August 2024: Coordinator of the German monitoring program at the Leibniz Institute for Baltic Sea Research Warnemünde

February 2019 – March 2025: Co-Chair of the HELCOM-Baltic Earth Expert Network on Climate Change (EN CLIME) representing Baltic Earth, coordination of primary climate parameters

November 2021 – September 2024: Co-Chair of the Scientific Council of the Leibniz Institute for Baltic Sea Research

April 2022 – November 2024: Member of the Task Group 1 of the JPI Oceans and JPI Climate Knowledge Hub on Sea Level Rise

2023-2025: Member of the writing team of the Baltic Earth Phase II science plan

Since 2024: Member of the Joint WCRP RIfS/CORDEX (Regional Information for Society/Coordinated Regional Climate Downscaling Experiment) & CLIVAR/OMDP (Climate and Ocean - Variability, Predictability, and Change/Ocean Model Development Panel) Task Force on Regional Ocean Modeling and Climate Projections

Research Highlights

Our paper on "Hypoxia in future climates: A model ensemble study for the Baltic Sea.", Geophys. Res. Lett., 38, L24608, 2011, was highlighted by Nature Climate Change, see A. Brown, 2012: Low oxygen outlook. Nature Climate Change, 2, 75 (doi:10.1038/nclimate1406, published online 27 January 2012)

Our paper on "Modeling the combined impact of changing climate and changing nutrient loads on the Baltic Sea environment in an ensemble of transient simulations for 19612099.", Climate Dynamics, 2012, doi: 10.1007/s00382-012-1339-y. (published online 25 April 2012) was highlighted by Nature Climate Change, see B. Wake, 2012: Climate and Baltic Sea nutrients, Vol. 2, p. 394 (doi:10.1038/nclimate1567, published online 25 May 2012)

Teaching

1986-1989: Exercises for undergraduate students at Kiel University (Theoretical Physics, 1170 working hours)

1997: Exercises for undergraduate students at Kiel University (Theoretical Oceanography, 48 lecture hours)

Jan 2005: Lectures for graduate students at Stockholm University (Physical oceanography of the Baltic Sea and seas around Sweden, 4 lecture hours)

Nov 2005: Invited guest lecture for graduate students at Gdansk University (Physical Oceanography of the Baltic Sea, 2 lecture hours)

Nov/Dec 2006: Lectures for undergraduate students at Stockholm University (Dynamical Meteorology I, 28 lecture hours corresponding to 120 working hours)

Dec 2008/Jan 2009: Lectures for graduate students at Stockholm University (Large scale oceanic circulation and physical oceanography of the Baltic Sea, 10 lecture hours corresponding to 40 working hours)

Nov/Dec 2008: Lectures for undergraduate students at Stockholm University (Dynamical Meteorology I, 30 lecture hours corresponding to 120 working hours)

Apr 2009: Invited guest lecture for graduate students at Lund University within the course "The Baltic Sea: Yesterday, Today and Tomorrow" (Physical processes and predicted changes with climate, 2 lecture hours)

Jul 2009: Invited lectures for graduate students at the International BALTEX summer school on "Threats and challenges for the Baltic Sea environment under climate change", Nexø, Bornholm, Denmark, 27 July - 5 August, 2009 (Regional climate simulations and uncertainties of scenario simulation, 8 lecture hours)

Sep 2009: Invited guest lecture for undergraduate students at Södertörn University, Huddinge, Sweden, within the course "The Baltic Sea's Ecosystem and Natural Resources" (in total 15 ECTS credits) (2 lecture hours)

Nov/Dec 2009: Lectures for undergraduate students at Stockholm University (Dynamical Meteorology I, 36 lecture hours corresponding to 144 working hours, 12 ECTS credits)

Oct 2010: Invited guest lecture for undergraduate students at Södertörn University, Huddinge, Sweden, "Impact of changing climate on the Baltic Sea" (2 lecture hours)

Oct 2010: Lecture for graduate students within the "Climate Modelling School" organized by the BONUS+ project AMBER, Norrköping, Sweden, "Baltic Sea Climate Modelling" (1 lecture hour)

Nov/Dec 2010: Lectures for undergraduate students at Stockholm University (Dynamical Meteorology I, 36 lecture hours corresponding to 144 working hours, 12 ECTS credits)

Mar 2013: Invited lecture for graduate students at the Baltic Ecosystem Adapative Management (BEAM) modeling course "Modeling as a tool to study the Baltic Sea ecosystem - Possibilities and challenges", Askö Laboratory, Sweden, 18-24 March 2013, "Biogeochemical modeling in the Baltic Sea (RCO-SCOBI, future climate projections)"

May 2013: Keynote lecture at the Baltic Ecosystem Adapative Management (BEAM) modeling seminar Stockholm University, Sweden, 18-24 March 2013, "Oceanography"

June 2013: Lectures for undergraduate (master) students at Stockholm University (Physical Oceanography, my part comprises 4 lecture hours corresponding to 16 working hours, 7.5 ECTS credits in total)

September 2014: Lecture for graduate students within the NorMER (The Nordic Centre for Research on Marine Ecosystems and Resources under Climate Change) Climate Change workshop on "Climate modelling: the global and regional perspective", 29 September, Copenhagen, Denmark.

December 2014 - January 2015: Lectures for undergraduate (master) students at Stockholm University (Physical Oceanography, my part comprises the course coordination and 4 lecture hours corresponding to 16 working hours, 7.5 ECTS credits in total)

August 2015: International advanced PhD course on "Impact of climate change on the marine environment with special focus on the role of changing extremes, Askö Laboratory,

Trosa, Sweden, 24 - 30 August 2015 (50 lecture hours, tutorials and exercises, 4 ECTS credits in total)

August 2016: International master course on “Climate of the Baltic Sea Region”, Askö Laboratory, Trosa, Sweden, 29 August - 5 September 2016 (50 lecture hours, tutorials, and exercises, 3 ECTS credits in total)

Winter term 2016/2017 (October 2016 - January 2017): International master course on “Climate of the Ocean", Rostock University (lectures, tutorials and exercises, 3 ECTS credits in total, 2.5 lecture hours per week)

April 2017: Teaching on the RADO workshop for science journalists (in German), Strahlsund, Germany (10 lecture hours in total)

August 2017: International master course on “Climate of the Baltic Sea Region”, Askö Laboratory, Trosa, Sweden, 28 August - 4 September 2017 (50 lecture hours, tutorials, and exercises, 3 ECTS credits in total)

Winter term 2017/2018 (October 2017 - January 2018): International master course on “Climate of the Ocean", Rostock University (lectures, tutorials and exercises, 3 ECTS credits in total, 2.5 lecture hours per week)

August 2018: International master course on “Climate of the Baltic Sea Region”, Askö Laboratory, Trosa, Sweden, 20-27 August 2018 (50 lecture hours, tutorials, and exercises, 3 ECTS credits in total)

September 2018: Summer school “Coastal dynamics - consequences for coastal protection and ecology”, 18 – 29 September 2018, Hiddensee Island, Germany (my part comprises 4 lecture hours), https://deutsche-kuestenforschung.de/coastal-summer-school-2018.html

Winter term 2018/2019 (October 2018 - January 2019): International master course on “Climate of the Ocean", Rostock University (lectures, tutorials and exercises, 3 ECTS credits in total, 2.5 lecture hours per week)

March 2019: International master course on “Analysis of Climate Variability”, Leibniz Institute of Baltic Sea Research Warnemünde, 22-29 March 2019 (50 lecture hours, tutorials, and exercises, 3 ECTS credits in total)

August 2019: International master course on “Climate of the Baltic Sea Region”, Askö Laboratory, Trosa, Sweden, 26 August -2 September 2019 (50 lecture hours, tutorials, and exercises, 3 ECTS credits in total)

Winter term 2019/2020 (October 2019 - January 2020): International master course on “Climate of the Ocean", Rostock University (lectures, tutorials and exercises, 3 ECTS credits in total, 2.5 lecture hours per week)

March 2020: International master course on “Analysis of Climate Variability”, cancelled due to COVID-19

August 2020: International master course on “Climate of the Baltic Sea Region”, online course, 26 August -2 September 2020 (50 lecture hours, tutorials, and exercises, 3 ECTS credits in total)

Winter term 2020/2021 (November 2020 - February 2021): International master course on “Climate of the Ocean", Rostock University (lectures, tutorials and exercises, 3 ECTS credits in total, 2.5 lecture hours per week)

March 2021: 2nd International Master Course on “Analysis of Climate Variability” (lectures, tutorials, and exercises corresponding to 3 ECTS), online course, 17 - 26 March 2021.

August 2021: 7th International Master Course on “Climate of the Baltic Sea Region” (lectures, tutorials, and exercises corresponding to 3 ECTS), Askö Laboratory, Trosa, Sweden, 23-30 August 2021.

Winter term 2021/2022 (October 2021 - January 2022): International master course on “Climate of the Ocean", Rostock University (lectures, tutorials and exercises, 3 ECTS credits in total, 2.5 lecture hours per week)

March 2022: 3rd International Master Course on “Analysis of Climate Variability” (lectures, tutorials, and exercises corresponding to 3 ECTS), online course, 15 - 23 March 2022.

June 2022: Summer Research Academy for Students (Rays), lecture on “What does a climate scientist do?”, online, 28 June 2022

August 2022: 8th International Master Course on “Climate of the Baltic Sea Region” (lectures, tutorials, and exercises corresponding to 3 ECTS), Askö Laboratory, Trosa, Sweden, 22-29 August 2022.

Winter term 2022/2023 (October 2022 - January 2023): International master course on “Climate of the Earth System", Rostock University (lectures, exercises, project work, 6 ECTS credits in total, 4 lecture hours per week, hybrid format)

March 2023: 5th International Baltic Earth Winter School for Young Scientists on “Earth System Science for the Baltic Sea Region”, 27 - 31 March 2023, Leibniz Institute for Baltic Sea Research Warnemünde, Rostock, Germany

May 2023: Lecture within the sustainMare program (“Ringvorlesung”) about future climate change in the North Sea and Baltic Sea regions („Zukünftige Klimaänderungen in Nord- und Ostsee”, in German), 10 May 2023

August 2023: Organizer of the 9th International Master Course on “Climate of the Baltic Sea Region” (lectures, tutorials, and exercises corresponding to 3 ECTS), Askö Laboratory, Trosa, Sweden, 21-28 August 2023

Winter term 2023/2024 (October 2023 - January 2024): International master course on “Climate of the Earth System", Rostock University (lectures, exercises, project work, 6 ECTS credits in total, 4 lecture hours per week, hybrid format),

March 2024: German Physical Society, Working Group Undergraduate Physics Laboratory (In German: Deutsche Physikalische Gemeinschaft, Arbeitsgruppe Physikalische Praktika AGPP): The physics behind the fact sheet on climate change in the Baltic Sea region (In German, „Die Physik hinter dem Faktenblatt zum Klimawandel in der Ostseeregion“), Bad Honnef, 10 March 2024, evening lecture

March 2024: 6th International Baltic Earth Winter School for Young Scientists on “Earth System Science for the Baltic Sea Region”, 18 - 22 March 2024, Institute of Oceanology of the Polish Academy of Sciences and International Environmental Doctoral School associated with the Centre for Polar Studies at the University of Silesia in Katowice, Sopot, Poland (“Climate Change in the Baltic Sea region”, 2 lecture hours)

August 2024: Organizer of the 10th International Master Course on “Climate of the Baltic Sea Region” (lectures, tutorials, and exercises corresponding to 3 ECTS), Askö Laboratory, Trosa, Sweden, 26 August – 2 September 2024

Winter term 2024/2025 (October 2024 - January 2025): International master course on "Climate of the Earth System", Rostock University (lectures, exercises, project work, 6 ECTS credits in total, 4 lecture hours per week, hybrid format),

March 2025: 7th International Baltic Earth Winter School for Young Scientists on "Earth System Science for the Baltic Sea Region", 24 - 28 March 2025, University of Klaipeda and the International Baltic Earth Secretariat at Helmholtz-Zentrum Hereon under the umbrella of Baltic Earth ("Climate Change in the Baltic Sea region", 2 lecture hours, and "An introduction on statistical methods", 2 lecture hours)

August 2025: Organizer of the 11th International Master Course on "Climate of the Baltic Sea Region" (lectures, tutorials, and exercises corresponding to 3 ECTS), Askö Laboratory, Trosa, Sweden, 18 - 25 August 2025

August 2025: Röntgen-Ångström-Cluster (RÅC) International Summer School 2025, Tallinn, Estonia, 30th August 2025, Author(s): Meier, H. E. M., Lecture: Impact of climate change on Baltic Sea dynamics (2 lecture hours)

Winter term 2025/2026 (October 2025 - January 2026): International master course on "Climate of the Earth System", Rostock University (lectures, exercises, project work, 6 ECTS credits in total, 4 lecture hours per week, hybrid format)

March 2026: 8th International Baltic Earth Winter School for Young Scientists on "Earth System Science for the Baltic Sea Region", 23 - 27 March 2026, Tallinn University of Technology and the University of Tartu under the umbrella of Baltic Earth (www.baltic.earth) ("Climate Change and the Baltic Sea", 2 lecture hours)

Supervising

Guest scientists at SMHI supervised:

- Dr. Frank Kauker (AWI, Bremerhaven, 2001, 2002)
- Dr. Jari Haapala (FIMR, Helsinki, 2003)
- PhD student Robert Osinski (IOPAS, Sopot, 2005)
- Dr. Jan Jedrasik (Gdansk University, Gdynia, 2005)
- PhD student Germo Väli (Marine Systems Institute at Tallinn University of Technology, Tallinn, 2011)
- PhD student Maciej Janecki (IOPAS, Sopot, 2014)

Guest scientists at IOW (with IOW grants) supervised:

- Dr. Germo Väli (Marine Systems Institute at Tallinn University of Technology, MSI, Tallinn, 2015, 2016, 2017, 2018, October to December 2019, April 2022, November/December 2022, November 2024, November 2025)
- Christian Dieterich (Swedish Meteorological and Hydrological Institute, SMHI, Norrköping, Februray to March 2020)

Honours/master thesis students supervised:

- Ulf Ekström (Linköping University, 2002): Setup of the Rossby Centre Ocean model applied to the Arctic Ocean. (practical course as part of the master degree, 4 months)
- Tobias Strömgren (Royal Institute of Technology (KTH), Stockholm, 2005): Implementation of a flux corrected transport scheme in the Rossby Centre Ocean model. (20 point honours research project, master degree)
- Mattias Franzén (Göteborg University, 2007): Analysis of sea level trends in the North Sea and Kattegat area simulated with the CCSM3 global climate model during 1870-2100. (10 point honours research project, bachelor degree)
- David Olofsson (Department of Meteorology, Stockholm University, 2007): Developing analysis tools to investigate results of the Rossby Centre Ocean model. (student summer employment, 2 months)
- Johannes Behling (upper-secondary school pupil from Kiel, Germany, 2008): Introduction into ocean modelling. (practical course, 2 weeks)
- Malin Anteros (Department of Meteorology, Stockholm University, 2008): Analysing the Baltic Sea conveyor belt using results of a three-dimensional ocean circulation model. (20 point honours research project, master degree)
- David Lindstedt (Department of Meteorology, Stockholm University, 2008): Impact of mixing on the Baltic Sea deep water renewal - a model study. (20 point honours research project, master degree)
- Elin Jansson (Department of Meteorology, Stockholm University, 2009): Impact of river regulation on the Baltic Sea salinity. (30 point honours research project, master degree)
- Céline Gießе (Department of Physical Oceanography and Instrumentation, Leibniz Institute for Baltic Sea Research Warnemünde, 2017/2018): Numerical Sensitivity Study on Haline Convection due to Sea Ice Brine Rejection in the Northern Baltic Sea. (one year honours research project, master degree)
- Maja Illig (Department of Physical Oceanography and Instrumentation, Leibniz Institute for Baltic Sea Research Warnemünde, Aug-Sep 2019): Analysis of historical sea level records (Master student in physics from University Dresden, practical course (Hilfswissenschaftlerin), 2 months
- Annika Jaitner (Department of Physical Oceanography and Instrumentation, Leibniz Institute for Baltic Sea Research Warnemünde, Aug 2020): Hypoxia in coastal seas, Bachelor of Science in mathematical biometry, University Ulm, practical course (Hilfswissenschaftlerin), 1 month
- Karina Krapf (Department of Physical Oceanography and Instrumentation, Leibniz Institute for Baltic Sea Research Warnemünde, July 2020 - June 2021): Spatio-temporal patterns of hypoxia in the Baltic Sea (half year honours research project, master degree, University Bayreuth)
- Kseniia Safonova (Department of Physical Oceanography and Instrumentation, Leibniz Institute for Baltic Sea Research Warnemünde, November 2020 - June 2021): Analysis of historical sea level records and projections (scientific assistant/Hilfswissenschaftlerin), 8 months
- Pauline Schäfer (Department of Physical Oceanography and Instrumentation, Leibniz Institute for Baltic Sea Research Warnemünde, October 2021 - December 2021):

Analysis of marine heat waves (internship and scientific assistant/Hilfswissenschaftlerin), 3 months

- Laura Detjen (Department of Physical Oceanography and Instrumentation, Leibniz Institute for Baltic Sea Research Warnemünde, January 2022 - February 2022): Analysis of hypoxia in the coastal zone of the Baltic Sea (internship), 3 weeks
- Marti Wolff (Department of Physical Oceanography and Instrumentation, Leibniz Institute for Baltic Sea Research Warnemünde, April – June 2023): Analysis of Baltic Sea climate variability based on model data for the last 8000 years (three-month honours research project, bachelor degree, University of Rostock)
- Julia Noack (Department of Physical Oceanography and Instrumentation, Leibniz Institute for Baltic Sea Research Warnemünde, June 2023): marine heat waves (internship), 3 weeks
- Annina Reining (Department of Physical Oceanography and Instrumentation, Leibniz Institute for Baltic Sea Research Warnemünde, June 2023): internship, 1 week
- Michelle Reiff (Department of Physical Oceanography and Instrumentation, Leibniz Institute for Baltic Sea Research Warnemünde, September/October 2023): global sea surface temperature trends, internship, 3 weeks
- Marti Wolff (Department of Physical Oceanography and Instrumentation, Leibniz Institute for Baltic Sea Research Warnemünde, October 2024 – September 2025): Climate predictions for the Baltic Sea (one year honours research project, master degree, University of Rostock)
- Clara Middelhuß (Department of Physical Oceanography and Instrumentation, Leibniz Institute for Baltic Sea Research Warnemünde, September 2024): analysis of hydrographic data from the Swedish archipelago I, internship, 3 weeks
- Malina Waldmann (Department of Physical Oceanography and Instrumentation, Leibniz Institute for Baltic Sea Research Warnemünde, September 2024): analysis of hydrographic data from the Swedish archipelago II, internship, 3 weeks
- Gyannee Sita Babooram (Department of Physical Oceanography and Instrumentation, Leibniz Institute for Baltic Sea Research Warnemünde, October/November/December 2024): analysis of scenario simulations in CoastalFutures (student research assistant/Hilfswissenschaftlerin), 10 weeks
- Gyannee Sita Babooram (Department of Physical Oceanography and Instrumentation, Leibniz Institute for Baltic Sea Research Warnemünde, since February 2025): On the large-scale circulation of the Baltic Sea derived from observations and modelling results (one year honours research project, master degree, University of Rostock)
- Marijke Kähler (Department of Physical Oceanography, Leibniz Institute for Baltic Sea Research Warnemünde, since January 2025): analysis of observed temperature, salinity and oxygen profiles in the coastal zone of the Baltic Sea (student research assistant/Hilfswissenschaftlerin)
- Marieke Plaug (Department of Physical Oceanography, Leibniz Institute for Baltic Sea Research Warnemünde, May/June 2025): analysis of hydrographic data from the Swedish archipelago III, internship, 4 weeks

- Daniella Levi (Department of Physical Oceanography, Leibniz Institute for Baltic Sea Research Warnemünde, September - December 2025): analysis of future scenario simulations, internship, 22 September – 22 December 2025.
-

PhD thesis students supervised:

- Hannes Rennau (Baltic Sea Research Institute Warnemünde at the University of Rostock, since 2011): Natural, numerical and structure-induced mixing in dense gravity currents: idealized and realistic model studies (PhD committee member, main supervisor: Prof. Hans Burchard)
- Lisa Bengtsson (Department of Meteorology, Stockholm University, 2006-2012): Cloud parameterizations in general circulation models. (PhD committee member, main supervisor: Prof. Erland Källen)
- Sebastian Mårtensson (Department of Meteorology, Stockholm University, 2007-2013): Modeling climate variability of the Arctic Ocean in past and future climates with special focus on changing sea-ice. (Primary supervisor)
- Christian Porsche (Baltic Sea Research Institute Warnemünde at the University of Rostock, since 2009): Einfluss von Klimaveränderung auf das Ökosystem der Ostsee - Vergleich von Variationen in den letzten 2000 Jahren mit erwarteten Veränderungen in den nächsten 100 Jahren (Co-supervisor, main supervisor: Dr. Thomas Neumann)
- Léon Chafik (Department of Meteorology, Stockholm University, 2009-2014): (PhD committee member, main supervisor: Prof. Peter Lundberg)
- Per Pemberton (Department of Meteorology, Stockholm University, 2010-2014): Freshwater processes and water mass transformation in the Arctic Ocean. (Primary supervisor)
- Ulrika Willen (Department of Meteorology, Stockholm University, since 2010): (PhD committee member, main supervisor: Prof. Mikael Tjernström)
- Filippa Fransner (Department of Meteorology, Stockholm University, since September 2012): On the fate of terrestrial dissolved organic carbon in the ocean. PhD within the Baltic Ecosystem Adaptive Management (BEAM) program. (Primary supervisor until August 2015)
- Madline Kniebusch (Leibniz Institute of Baltic Sea Research Warnemuende, May 2016 – July 2019, magna cum laude): Detection and attribution studies of climate related changes in the Baltic Sea since 1850 (Primary supervisor)
- Florian Börgel (Leibniz Institute of Baltic Sea Research Warnemuende, September 2017 – October 2020, summa cum laude): Low-frequency variability in the Baltic Sea region (Primary supervisor)
- Jan Moritz Kaiser (Leibniz Institute of Baltic Sea Research Warnemuende, June 2019 – May 2022, abondoned): Reconstruction of paleo-climate variability in the Baltic Sea (Primary supervisor)
- Lev Naumov (Leibniz Institute of Baltic Sea Research Warnemuende, September 2020 – February 2024, cum laude): Dynamics of oxygen in coastal seas - the Baltic Sea example (Primary supervisor)

- Leonie Barghorn (Leibniz Institute of Baltic Sea Research Warnemuende, 2022-2025, summa cum laude): Salinity and Temperature Variability in the Baltic Sea under Changing Climate (Primary supervisor)
- Kseniia Safonova (Leibniz Institute of Baltic Sea Research Warnemuende, since July 2024): Marine heat waves and impact on the marine ecosystem (Primary supervisor)
- Marti Wolff (Leibniz Institute of Baltic Sea Research Warnemuende, since January 2026): Decadal climate predictions for the Baltic Sea (Primary supervisor)
- Gyannee Sita Babooram (Leibniz Institute of Baltic Sea Research Warnemuende, since April 2026): Impact of multi-decadal climate on regional seas (Primary supervisor)
-

University / Research Institute committees:

- Opponent at licentiat thesis presentation at Uppsala University (Björn Carlsson, 2007).
- Committee member of licentiat thesis defense at Stockholm University (Linus Magnusson, 2007).
- Committee member of PhD thesis defense at Göteborg University (Christian Nohr, May 2009).
- Member of the evaluation committee of 6 master thesis defenses at Stockholm University (Emma Grönkvist, Per Axelsson, Marcus Johansson, Anders Söderberg, Alexander Håkansson, Charlotte Boström, June 2009).
- Board member of the 'ECOCHANGE' programme, the joint Strategic Marine Environmental Research Programme on the Baltic Sea of Umeå and Linnaeus universities (2010-2017)
- Member of the Scientific Advisory Board of the Leibniz Institute for Baltic Research Warnemünde, Rostock, Germany. (2012-2015)
- Committee member of the PhD thesis defense at Stockholm University (Marie-Luise Kapsch, October 2015).
- Referee and committee member of the PhD thesis defense at Johann Wolfgang Goethe-University in Frankfurt am Main, Germany (Trang Van Pham, The consideration of North and Baltic Seas in regional climate modeling with the coupled atmosphere-ocean-ice model COSMO-CLM/NEMO, 22 May 2019)
- Referee (pre-examination) and opponent of the PhD thesis at Aalto University School of Engineering, Finland (Dr. Petra Roiha, Advancements of the operational oceanography in the Baltic Sea, 20 December 2019)
- Member of the appointment committee of the Earth system research professorship and IOW Director position, 2020
- Referee and committee member of the habilitation thesis defense at the University of Toulouse III by Dr. Angélique Melet (14 November 2022)
- Opponent of the PhD thesis at Södertörn University, Sweden (Dr. Mohanad Abdelgadir, Aquatic ecosystem function and environmental change across spatial scales, 27 September 2024)

- Member of the Professor Kazimierz Demel Medal Committee (since 2024)
- Member of the search committee assessing candidates for a section head position at Technical University of Denmark (2025)
- Member of the search committee assessing candidates for a professor position at Aarhus University (2025)
-

Coordination of International Workshops or Sessions at International Meetings, Scientific Organizing Committees, Summer schools

Feb 1998: Coordinator of the SWECLIM workshop on atmosphere and ocean circulation climate modeling, Norrköping, Sweden

Nov 1998: Coordinator of the SWECLIM workshop on modeling sea ice coupled to a 3D Baltic Sea model, Norrköping, Sweden

Oct 1999: Co-coordinator of the SWECLIM workshop on coupling of ocean, ice, and atmosphere, Norrköping, Sweden

Aug 2003: Co-convener of the Baltic Sea Ice Research workshop at the Baltic Sea Science Conference (BSSC), Helsinki, Finland

Oct 2003: Member of the scientific organizing committee of the Second Workshop on Climate Variations in Sweden during the past 2000 years: Climate variability, environmental change, and cultural response, Uppsala, Sweden

Jun 2005: Convener of the workshop on "Ventilation of the Baltic Sea deep water: observations and model results" at the Baltic Sea Science Conference (BSSC), Sopot, Poland

Nov 2005: Coordinator of the Fourth Workshop on Climate Variations in Sweden during the past 2000 years: Observations and model results, Norrköping, Sweden

Mar 2007: Convener of the sesson "Dynamics of the Baltic Sea deep water - observations and model results" at the Baltic Sea Science Conference (BSSC), Rostock, Germany

Jan 2008: Organizer of the BALTEX workshop on the "Utility of Regional Climate Models", Norrköping, Sweden, 23 January 2008

Oct 2008: Organizer of the Marine Environmental Day "Can we save the Baltic Sea? Eutrophication in future climate", Norrköping, Sweden, 21 October 2008

May 2009: Member of the scientific committee of the second Lund Regional-scale Climate Modelling Workshop: "21st Century Challenges in Regional Climate Modelling", Lund, Sweden, May 4-8, 2009

May 2009: Member of the scientific committee of the conference "Climate change - The environmental and socioeconomic response in the southern Baltic region", and convener of Session B: "Modeling of the past climate change and future projections", Szczecin, Poland, 25-29 May, 2009

Jul 2009: Co-Convener (IAPSO) and session chair of the session J 21 "Regional Climate Modelling" at the Joint Assembly of IAMAS (International Association of Meteorology and Atmospheric Science), IAPSO (International Association for the Physical Sciences of the Oceans) and IACS (International Association of the Cryospheric Sciences), MOCA-09, in Montreal, Canada, July 20-24, 2009.

Aug 2009: Member of the scientific committee of the 7th Baltic Sea Science Congress (BSSC) 2009 "Towards better understanding and improved technology for serving the society" Tallinn, Estonia, 17-21 August, 2009

Oct 2009: Organizer of the international Workshop "The marine ecosystem in changing climate - on the added value of coupled climate-environmental modeling for the Baltic Sea", Norrköping, Sweden, 16 October 2009.

Oct 2010: Organizer of the "Climate Modelling School for PhD students, Norrköping, Sweden, 13 October 2010.

Oct 2010: Organizer of the international BONUS+ program workshop "Uncertainties of scenario simulations", Norrköping, Sweden, 14 October 2010.

Aug 2011: Member of the scientific committee of the 8th Baltic Sea Science Congress (BSSC) 2011 "Joint research efforts for sustainable ecosystem management" St. Petersburg, Russia, 22-26 August, 2011

Aug 2011: Convener of the theme session "Impact of changing climate and humaninduced pressures on the Baltic Sea Ecosystem" proposed by the BONUS+ program by Markus Meier (Sweden), Joachim Dippner (Germany), Aarno Kotilainen (Finland) at the Baltic Sea Science Congress (BSSC), St.Petersburg, Russia, 22-26 August 2011

Sep 2011: Co-Convener of the theme session "Integration of multidisciplinary knowledge in the Baltic Sea to support science-based management" proposed by the BONUS+ program by Sakari Kuikka (Finland), Michael Gilek (Sweden), Markus Meier (Sweden), Kari Lehtonen (Finland) at the 2011 Annual Science Conference of International Council for the Exploration of the Sea (ICES), Gdansk, Poland, 19-23 September 2011

Dec 2011: Organizer of the international ECOSUPPORT and RECOCA stakeholder conference on "An outlook to the future Baltic Sea: how can we reach the targets of the Baltic Sea Action Plan?", Stockholm University, Stockholm, Sweden, 7 December 2011.

Jul 2013: Lead convener for the symposium on "Baltic and other regional seas" (P02) at the Joint Assembly of IAHS (International Association of Hydrological Science), IAPSO (International Association for the Physical Sciences of the Oceans) and IASPEI (International Association of Seismology and Physics of the Earth's Interior), in Gothenburg, Sweden, July 22-26, 2013.

Aug 2013: Member of the international scientific committee of the 9th Baltic Sea Science Congress (BSSC) 2013 "New horizons for Baltic Sea Science", and convener of the Session (no. 9): "Climate of Baltic Sea in 21st century, effects from microscales to regional patterns", Klaipeda, Lithuania, 26-30 August, 2013

May 2014: Member of the scientific committee of the international conference on "Climate Change - The environmental and socio-economic response in the southern Baltic region", Szczecin, Poland, 25-28 May, 2014

May 2014: Member of the scientific committee of the 6th IEEE/OES Baltic Symposium 2014 on "Measuring and modeling of multi-scale interactions in the marine environment", Tallinn, Estonia, 26-29 May, 2014

Dec 2014: Co-convener of the session on “Prospects of the New Science and Outreach Network Baltic Earth with Results of the Second Climate Change Assessment for the Baltic Sea Region (BACC II)” at the AGU fall meeting, San Francisco, 15-19 December 2014

Feb 2015: Member of the review panel “Sea-based measures to reduce consequences of eutrophication organized by Stockholm University, the Swedish Ministry of Environment and the Swedish Agency for Marine and Freshwater Management, 12 February 2015, Stockholm University

Jun 2015: Member of the international scientific committee of the 10th Baltic Sea Science Congress (BSSC) 2015 “Science and innovation for future of the Baltic and the European regional seas”, Riga, Latvia, 15-19 June, 2015

Aug 2015: Organizer of the International advanced PhD course on “Impact of climate change on the marine environment with special focus on the role of changing extremes (corresponding to 4 ECTS), co-organized by the “Baltic Ecosystem Adaptive Management (BEAM) and Baltic Earth programmes and funded by BEAM, Askö Laboratory, Trosa, Sweden, 24 - 30 August 2015

Nov 2015: Member of the scientific committee of the joint HyMeX-Baltic Earth Workshop on “Joint regional climate system modelling for the European sea regions”, Rome, 5-6 November, 2015

Apr 2016: Co-convener of the session on “Climate change and its impacts in the Baltic and North Sea regions: Observations and model projections (CL4.04)” at the EGU 2016 in Vienna, 17-22 April 2016

May 2016: Co-convener of the side event on the use of coupled regional climate models in CORDEX (FPS) at the ICRC-CORDEX conference, 19th May 2016, co-organization: S. Somot (Meteo-France/CNRM), M. Meier (IOW, SMHI)

Jun 2016: Chair of the organization committee of the 1st Baltic Earth conference on “Multiple drivers for Earth system changes in the Baltic Sea region”, Nida, Curonian Spit, Lithuania, 13-17 June 2016

Aug 2016: Organizer of the 2nd International Master Course on “Climate of the Baltic Sea Region” (corresponding to 3 ECTS), co-organized by Rostock University, Leibniz Institute for Baltic Sea Research Warnemünde, Stockholm University, SMHI and Helmholtz Zentrum Geesthacht under the umbrella of the Baltic Earth program, Askö Laboratory, Trosa, Sweden, 29 August - 5 September 2016

Nov 2016: Organizer of the international Baltic Earth workshop on “Scenario simulations for the Baltic Sea 1960-2100, Leibniz Institute for Baltic Sea Research Warnemünde, Rostock, Germany, 22-24 November 2016

Feb 2017: Organizer of the international Baltic Earth workshop on “Coupled atmosphere-ocean modeling for the Baltic Sea and North Sea, Leibniz Institute for Baltic Sea Research Warnemünde, Rostock, Germany, 7-8 February 2017

Mar 2017: Organizer of the international Baltic Earth seminar on ”Saltwater inflows into the Baltic Sea, Leibniz Institute for Baltic Sea Research Warnemünde, Rostock, Germany, 9 March 2017

Apr 2017: Co-convener of the session on “Climate change and its impacts in the Baltic and North Sea regions: Observations and model projections (CL4.04)" at the EGU 2017 in Vienna, 23-28 April 2017, Convener: Marcus Reckermann, Co-conveners: Corinna Schrum, Markus Quante, Markus Meier

Jun 2017: Member of the international scientific committee of the 11th Baltic Sea Science Congress (BSSC) 2017 "Living along gradients: past, present, future", Rostock, Germany, 12-16 June, 2017

Aug 2017: Organizer of the 3rd International Master Course on "Climate of the Baltic Sea Region" (corresponding to 3 ECTS), co-organized by Leibniz Institute for Baltic Sea Research Warnemünde, Rostock University and Helmholtz Zentrum Geesthacht under the umbrella of the Baltic Earth program, Askö Laboratory, Trosa, Sweden, 28 August - 4 September 2017

Mar 2018: Member of the scientific committee of the joint MedCORDEX - Baltic Earth – COST Workshop on "Regional Climate System Modelling for the European Sea Regions", Universitat de les Illes Balears, Palma de Mallorca, Spain, 14-16 March, 2018

Jun 2018: Chair of the scientific conference committee and member of the organization committee of the 2nd Baltic Earth conference on "The Baltic Sea Region in Transition", Helsingør, Denmark, 11-15 June 2018

Aug 2018: Organizer of the 4th International Master Course on "Climate of the Baltic Sea Region" (corresponding to 3 ECTS), co-organized by Leibniz Institute for Baltic Sea Research Warnemünde, Rostock University and Helmholtz Zentrum Geesthacht under the umbrella of the Baltic Earth program, Askö Laboratory, Trosa, Sweden, 20 – 27 August 2018

Nov 2018: Member of the scientific committee of the Baltic Earth Workshop on "Multiple drivers for Earth system changes in the Baltic Sea region", Tallinn University of Technology, Tallinn, Estonia, 26- 27 November 2018

Mar 2019: Organizer of the 1st International Master Course on "Analysis of Climate Variability" (corresponding to 3 ECTS), co-organized by Leibniz Institute for Baltic Sea Research Warnemünde, Rostock University and Helmholtz Zentrum Geesthacht under the umbrella of the Baltic Earth program, Leibniz Institute for Baltic Sea Research Warnemünde, Germany, 22 - 29 March 2019

Aug 2019: Organizer of the 5th International Master Course on "Climate of the Baltic Sea Region" (corresponding to 3 ECTS), co-organized by Leibniz Institute for Baltic Sea Research Warnemünde, Rostock University and Helmholtz Zentrum Geesthacht under the umbrella of the Baltic Earth program, Askö Laboratory, Trosa, Sweden, 26 August – 2 September 2019

Nov 2019: Member of the scientific committee of the Baltic Earth Workshop on Climate projections and uncertainties in the northern Baltic Sea region, Finnish Environment Institute, Helsinki, Finland, 19- 20 November 2019

Mar 2020: Organizer of the 2nd International Master Course on "Analysis of Climate Variability" (corresponding to 3 ECTS), co-organized by Leibniz Institute for Baltic Sea Research Warnemünde, Rostock University and Helmholtz Zentrum Geesthacht under the umbrella of the Baltic Earth program, Leibniz Institute for Baltic Sea Research Warnemünde, Germany, planned for 23 - 30 March 2020, but cancelled due to COVID-19

Jun 2020: Chair of the scientific conference committee and member of the organization committee of the 3rd Baltic Earth conference on "Earth system changes and Baltic Sea coasts", 2-3 June 2020, video conference

Aug 2020: Organizer of the 6th International Master Course on "Climate of the Baltic Sea Region" (corresponding to 3 ECTS), co-organized by Leibniz Institute for Baltic Sea

Research Warnemünde, Rostock University and Helmholtz Zentrum Geesthacht under the umbrella of the Baltic Earth program, online course, 24 - 31 August 2020

Mar 2021: Organizer of the 2nd International Master Course on "Analysis of Climate Variability" (corresponding to 3 ECTS), co-organized by Leibniz Institute for Baltic Sea Research Warnemünde, Rostock University and Helmholtz Zentrum Geesthacht under the umbrella of the Baltic Earth program, online course, 17 - 26 March 2021.

Aug 2021: Organizer of the 7th International Master Course on "Climate of the Baltic Sea Region" (corresponding to 3 ECTS), co-organized by Leibniz Institute for Baltic Sea Research Warnemünde, Rostock University and Helmholtz Zentrum Hereon under the umbrella of the Baltic Earth program, Askö Laboratory, Trosa, Sweden, 23-30 August 2021.

Nov 2021: Member of the scientific committee of the Marginal Seas conference "Eurasian Marginal Seas - Past and Future", organized by Guangzhou Marine Geological Survey (GMGS), China Geological Survey, China, online conference, 16-19 November 2021.

Oct 2021: Member of the international scientific committee of the 13th Baltic Sea Science Congress (BSSC) 2021 "Understanding transitions in the Baltic", Aarhus, Denmark, 18-22 October, 2021

Mar 2022: Organizer of the 3rd International Master Course on "Analysis of Climate Variability" (corresponding to 3 ECTS), co-organized by Leibniz Institute for Baltic Sea Research Warnemünde, Rostock University and Helmholtz Zentrum Geesthacht under the umbrella of the Baltic Earth program, online course, 15 - 23 March 2022.

May 2022: Organizer of the international JPI Oceans and JPI Climate Knowledge Hub Sea Level Rise Baltic Sea Workshop, 9 - 10 May 2022, online

Jun 2022: Chair of the scientific conference committee and member of the organization committee of the 4th Baltic Earth conference on "Assessing the Baltic Sea Earth System", 30 May - 3 June 2022, Jastarnia, Hel Peninsula, Poland

Aug 2022: Organizer of the 8th International Master Course on "Climate of the Baltic Sea Region" (corresponding to 3 ECTS), co-organized by Leibniz Institute for Baltic Sea Research Warnemünde, Rostock University and Helmholtz Zentrum Hereon under the umbrella of the Baltic Earth program, Askö Laboratory, Trosa, Sweden, 22-29 August 2022

Oct 2022 – Jan 2023: International master course on "Climate of the Earth system" (corresponding to 6 ECTS), every Wednesday 13:00-17:00 CET, hybrid lectures Rostock and online, exercises and project work, co-organized by the University of Rostock and the Leibniz Institute for Baltic Sea Research Warnemünde (IOW) under the umbrella of Baltic Earth (baltic.earth)

Mar 2023: Organizer of the International Baltic Earth Winter School for Young Scientists on "Earth System Science for the Baltic Sea Region", co-organized by Leibniz Institute for Baltic Sea Research Warnemünde, Rostock University and Helmholtz Zentrum Geesthacht under the umbrella of the Baltic Earth program, Warnemünde, 27 - 31 March 2023

Aug 2023: Organizer of the 9th International Master Course on “Climate of the Baltic Sea Region” (corresponding to 3 ECTS), co-organized by Leibniz Institute for Baltic Sea Research Warnemünde, Rostock University and Helmholtz Zentrum Hereon under the umbrella of the Baltic Earth program, Askö Laboratory, Trosa, Sweden, 21-28 August 2023

Aug 2023: Member of the international scientific committee of the 14th Baltic Sea Science Congress (BSSC) 2023 “The science we need for the Baltic Sea we want”, Helsinki, Finland, 21-25 August, 2023

Sep 2023: Convener of the session D1 „CORDEX-Ocean: Towards a CORDEX framework for Ocean Regional Climate Modelling” at the ICRC-CORDEX conference, Trieste, Italy, 23-29 September 2023.

Oct 2023 – Jan 2024: International master course on “Climate of the Earth system” (corresponding to 6 ECTS), every Wednesday 13:00-17:00 CET, hybrid lectures Rostock and online, exercises and project work, co-organized by the University of Rostock and the Leibniz Institute for Baltic Sea Research Warnemünde (IOW) under the umbrella of Baltic Earth (baltic.earth)

Nov 2023: Member of the scientific committee of the international conference " Marine Geology: Marginal Seas – Past and Future", organized by Guangzhou Marine Geological Survey (GMGS), China Geological Survey, Guangzhou, P.R. China, hybrid conference, 27 November - 1 December 2023.

May 2024: Chair of the scientific conference committee and member of the organization committee of the 5th Baltic Earth conference on “New Challenges for Baltic Sea Earth System Research”, 13 - 17 May 2024, Jurmala, Latvia.

Aug 2024: Organizer of the 10th International Master Course on “Climate of the Baltic Sea Region” (lectures, tutorials, and exercises corresponding to 3 ECTS), Askö Laboratory, Trosa, Sweden, 26 August – 2 September 2024

Oct 2024 – Jan 2025: International master course on “Climate of the Earth system” (corresponding to 6 ECTS), every Wednesday 13:00-17:00 CET, hybrid lectures Rostock and online, exercises and project work, co-organized by the University of Rostock and the Leibniz Institute for Baltic Sea Research Warnemünde (IOW) under the umbrella of Baltic Earth (baltic.earth)

Feb 2025: Organizer of the Special Baltic Earth Colloquium – achievements, thanks and future challenges. Hamburg, Germany, 4 February 2025

May 2025: Member of the international scientific committee of the 15th Baltic Sea Science Congress (BSSC) 2025 “From the pier of knowledge to the horizon of discovery”, Sopot, Poland, 26-30 May, 2025

Aug 2025: Organizer of the 11th International Master Course on “Climate of the Baltic Sea Region” (lectures, tutorials, and exercises corresponding to 3 ECTS), Askö Laboratory, Trosa, Sweden, 18 - 25 August 2025

Oct 2025 – Jan 2026: International master course on “Climate of the Earth system” (corresponding to 6 ECTS), every Wednesday 13:00-17:00 CET, hybrid lectures Rostock and online, exercises and project work, co-organized by the University of Rostock and

the Leibniz Institute for Baltic Sea Research Warnemünde (IOW) under the umbrella of Baltic Earth (baltic.earth)

Apr 2026: Chair of the scientific conference committee and member of the organising committee of the 6th Baltic Earth conference, 13 - 17 April 2026, Heringsdorf, Usedom, Germany.

Publications

Diploma Thesis

Meier, H.E.M., 1989: Nonlineare, plane plasma waves in Pulsar magnetospheres – an approach to take radiation reaction into account (in German). Diploma thesis, University of Kiel, 125 pp.

Ph.D. Thesis

Meier, H.E.M., 1996: A regional model of the western Baltic Sea with open boundary conditions and data assimilation (in German). PhD thesis, University of Kiel, in: Ber. Inst. f. Meereskunde No.284, D-24105 Kiel, Germany, 117 pp.

Articles in international scientific journals with referee practice

Summary: More than 160 peer-reviewed, at least accepted manuscripts (assessed on 2026-05-06; Web of Science: 157 published articles, 7,954 times cited, h-index 49; Scholar Google: 281 publications, 13,316 times cited, h-index 63; 2 articles highlighted by Nature Climate Change), 2 Eos articles, 25 scientific reports, 9 book chapters, 97 other scientific and opinion publications (newsletter articles, conference proceedings, editorials, etc.)

1. Haapala, J., **H.E.M. Meier**, and J. Rinne, 2001: Numerical investigations of future ice conditions in the Baltic Sea. *Ambio*, 30, 237-244.

2. **Meier, H.E.M.**, 2001: On the parameterization of mixing in three-dimensional Baltic Sea models. *J. Geophys. Res.*, 106, 30,997 - 31,016.

3. Döscher, R., U. Willén, C. Jones, A. Rutgersson, **H.E.M. Meier**, U. Hansson, and L.P. Graham, 2002: The development of the regional coupled ocean-atmosphere model RCAO. *Boreal Env. Res.*, 7, 183-192.

4. **Meier, H.E.M.**, 2002: Regional ocean climate simulations with a 3D ice-ocean model for the Baltic Sea. Part 1: Model experiments and results for temperature and salinity. *Clim. Dyn.*, 19, 237-253.

5. **Meier, H.E.M.**, 2002: Regional ocean climate simulations with a 3D ice-ocean model for the Baltic Sea. Part 2: Results for sea ice. *Clim. Dyn.*, 19, 255-266.

6. **Meier, H.E.M.**, and R. Döscher, 2002: Simulated water and heat cycles of the Baltic Sea using a 3D coupled atmosphere-ice-ocean model. *Boreal Env. Res.*, 7, 327-334

7. **Meier, H.E.M.**, and T. Faxén, 2002: Performance analysis of a multiprocessor coupled ice-ocean model for the Baltic Sea. *J. Atmos. Oceanic Technol.*, 19, 114-124.

8. Kauker, F., and **H.E.M. Meier**, 2003: Modeling decadal variability of the Baltic Sea: 1. Reconstructing atmospheric surface data for the period 1902-1998. *J. Geophys. Res.*, 108(C8), 3267, doi:10.1029/ 2003JC001797.

9. **Meier, H.E.M.**, and F. Kauker, 2003: Modeling decadal variability of the Baltic Sea: 2. Role of freshwater inflow and large-scale atmospheric circulation for salinity. *J. Geophys. Res.*, 108(C11), 3368, doi:10.1029/2003JC001799.

10. **Meier, H.E.M.**, and F. Kauker, 2003: Sensitivity of the Baltic Sea salinity to the freshwater supply. *Clim. Res.*, 24, 231-242.

11. **Meier, H.E.M.**, R. Döscher, and T. Faxén, 2003: A multiprocessor coupled ice-ocean model for the Baltic Sea: Application to salt inflow. *J. Geophys. Res.*, 108(C8), 3273, doi:10.1029/2000JC000521.

12. Wang, J., R. Kwok, F.J. Saucier, J. Hutchings, M. Ikeda, W. Hibler III, J. Haapala, M.D. Coon, **H.E.M. Meier**, H. Eicken, N. Tanaka, D. Prentki, and W. Johnson, 2003: Working towards improved small-scale sea ice-ocean modeling in the Arctic seas. *EOS, Trans. AGU*, 84(34), 325, 329-330.

13. Räisänen, J., U. Hansson, A. Ullerstig, R. Döscher, L.P. Graham, C. Jones, **H.E.M. Meier**, P. Samuelsson, and U. Willén, 2004: European climate in the late twenty-first century: regional simulations with two driving global models and two forcing scenarios. *Clim. Dyn.*, 22, 13-31.

14. Döös, K., **H.E.M. Meier**, and R. Döscher, 2004: The Baltic haline conveyor belt or the overturning circulation and mixing in the Baltic. *Ambio*, 33, 261-266.

15. Döscher, R., and **H.E.M. Meier**, 2004: Simulated sea surface temperature and heat fluxes in different climates of the Baltic Sea. *Ambio*, 33, 242-248.

16. **Meier, H.E.M.**, R. Döscher, and A. Halkka, 2004: Simulated distributions of Baltic seaice in warming climate and consequences for the winter habitat of the Baltic ringed seal. *Ambio*, 33, 249-256.

17. **Meier, H.E.M.**, B. Broman, and E. Kjellström, 2004: Simulated sea level in past and future climates of the Baltic Sea. *Clim. Res.*, 27, 59-75.

18. **Meier, H.E.M.**, R. Döscher, B. Broman, and J. Piechura, 2004: The major Baltic inflow in January 2003 and preconditioning by smaller inflows in summer/autumn 2002: a model study. *Oceanologia*, 46, 557-579.

19. **Meier, H.E.M.**, 2005: Modeling the age of Baltic Sea water masses: Quantification and steady state sensitivity experiments. *J. Geophys. Res.*, 110, C02006, doi:10.1029/2004JC002607.

20. Kjellström, E., R. Döscher, and **Meier, H.E.M.**, 2005: Atmospheric response to different sea surface temperatures in the Baltic Sea: Coupled versus uncoupled regional climate model experiments. *Nordic Hydrology*, 36 (4-5), 397-409.

21. **Meier, H.E.M.**, B. Broman, H. Kallio, and E. Kjellström, 2006: Projections of future surface winds, sea levels, and wind waves in the late 21st century and their application for impact studies of flood prone areas in the Baltic Sea region. In: Schmidt-Thomé, P. (ed.), Sea level changes affecting the spatial development of the Baltic Sea region, *Geological Survey of Finland, Special Paper 41*, Espoo, 23-43, http://arkisto.gtk.fi/sp/SP41.pdf.

22. **Meier, H.E.M.**, 2006: Baltic Sea climate in the late twenty-first century: a dynamical downscaling approach using two global models and two emission scenarios. *Clim. Dyn.*, 27(1), 39-68, doi: 10.1007 / s00382-006-0124-x.

23. **Meier, H.E.M.**, R. Feistel, J. Piechura, L. Arneborg, H. Burchard, V. Fiekas, N. Golenko, N. Kuzmina, V. Mohrholz, C. Nohr, V.T. Paka, J. Sellschopp, A. Stips, and V. Zhurbas, 2006: Ventilation of the Baltic Sea deep water: A brief review of present knowledge from observations and models. *Oceanologia*, 48(S), 133-164.

24. **Meier, H.E.M.**, E. Kjellström, and L. P. Graham, 2006: Estimating uncertainties of projected Baltic Sea salinity in the late 21st century. *Geophys. Res. Lett.*, Vol. 33, No. 15, L15705, doi: 10.1029/2006GL026488.

25. **Meier, H.E.M.**, 2007: Modeling the pathways and ages of inflowing salt- and freshwater in the Baltic Sea. *Estuarine, Coastal and Shelf Science*, Vol. 74/4, 717-734. https://doi.org/10.1016/j.ecss.2007.05.019

26. Burchard, H., P. D. Craig, J. R. Gemmrich, H. van Haren, P.-P. Mathieu, **H. E. M. Meier,** W. A. M. N. Smith, H. Prandke, T. P. Rippeth, E. D. Skyllingstad, W. D. Smyth, D. J. S. Welsh, and H. W. Wijesekera, 2008: Observational and numerical modeling methods for quantifying coastal ocean turbulence and mixing. *Prog. Oceanog.*, 76, 399-442.

27. Eilola, K., **H.E.M. Meier**, and E. Almroth, 2009: On the dynamics of oxygen, phosphorus and cyanobacteria in the Baltic Sea; a model study. *J. Marine Systems*, 75, 163-184.

28. Conley, D. J., S. Björk, E. Bonsdorff, J. Carstensen, G. Destouni, B. G. Gustafsson, S.Hietanen, M. Kortekaas, H. Kuosa, **H. E. M. Meier**, B. Müller-Karulis, K. Nordberg, G. Nürnberg, A. Norkko, H. Pitkänen, N. Rabalais, R. Rosenberg, O. Savchuk, C. P. Slomp, M. Voss, F. Wulff, and L. Zillén, 2009: Hypoxia-Related Processes in the Baltic Sea. *Environmental Science and Technology*, 43(10), 3412-3420.

29. Döscher, R., K. Wyser, **H. E. M. Meier**, M. Qian, and R. Redler, 2010: Quantifying Arctic contributions to climate predictability in a regional coupled ocean-ice-atmosphere model. *Clim. Dyn.*, 34, 1157-1176, doi: 10.1007/s00382-009-0567-y (published on-line 8 Apr 2009)

30. Hordoir, R., and **H. E. M. Meier**, 2010: Freshwater fluxes in the Baltic Sea: A model study. *J. Geophys. Res.*, 115, C08028, doi: 10.1029/2009JC005604.

31. **Meier, H.E.M.**, K. Eilola, and E. Almroth, 2011: Climate-related changes in marine ecosystems simulated with a three-dimensional coupled biogeochemical-physical model of the Baltic Sea. *Clim. Res.*, 48, 31-55.

32. Soomere, T., N. Delpeche, B. Viikmäe, E. Quak, **H. E. M. Meier**, and K. Döös, 2011: Patterns of current-induced transport in the surface layer of the Gulf of Finland. *Boreal Env. Res.*, 16 (suppl. A), 49-63

33. **Meier, H.E.M.**, A. Höglund, R. Döscher, H. Andersson, U. Löptien and E. Kjellström, 2011: Quality assessment of atmospheric surface fields over the Baltic Sea of an ensemble of regional climate model simulations with respect to ocean dynamics. *Oceanologia*, 53, 193-227.

34. Hordoir, R., and **H. E. M. Meier**, 2012: Effect of climate change on the thermal stratification of the Baltic Sea - a sensitivity experiment. *Clim. Dyn.* , 38:1703-1713, doi: 10.1007/s00382-011-1036-y. (published on-line 4 March 2011)

35. Almroth-Rosell, E., K. Eilola, R. Hordoir, **H. E. M. Meier**, and P. O. J. Hall, 2011: Transport of fresh and resuspended particulate organic material in the Baltic Sea - a model study. *J. Marine Systems*, 87, 1-12, doi:10.1016/j.jmarsys.2011.02.005

36. Eilola, K., B.G. Gustafson, I. Kuznetsov, **H.E.M. Meier**, T. Neumann, O. P. Savchuk, 2011: Evaluation of biogeochemical cycles in an ensemble of three state-of-the-art numerical models of the Baltic Sea during 1970-2005. *J. Marine Systems*, 88, 267-284, doi:10.1016/j.jmarsys.2011.05.004

37. Löptien, U., and **H. E. M. Meier**, 2011: The influence of increasing water turbidity on the sea surface temperature in the Baltic Sea: A model sensitivity study. *J. Marine Systems*, 88, 323-331, doi:10.1016/j.jmarsys.2011.06.001

38. Reckermann, M., J. Langner, A. Omstedt, H. von Storch, S. Keevallik, B. Schneider,B. Arheimer, **H. E. M. Meier** and B. Hünicke, 2011: BALTEX - An interdisciplinary research network for the Baltic Sea region. *Environ. Res. Lett.*, 6, 045205

39. **Meier, H.E.M.**, H.C. Andersson, K. Eilola, B.G. Gustafsson, I. Kuznetsov, B. Müller-Karulis, T. Neumann, O. P. Savchuk, 2011: Hypoxia in future climates: A model ensemble study for the Baltic Sea. Geophys. Res. Lett., 38, L24608, https://doi.org/10.1029/2011GL049929 (highlighted by Nature Climate Change, A. Brown, 2012: Low oxygen outlook, Vol. 2, p. 75, 2012, doi:10.1038/nclimate1406, published online 27 January 2012)

40. **Meier, H.E.M.**, R. Hordoir, H.C. Andersson, C. Dieterich, K. Eilola, B.G. Gustafsson, A. Höglund, and S. Schimanke, 2012: Modeling the combined impact of changing climate and changing nutrient loads on the Baltic Sea environment in an ensemble of transient simulations for 1961-2099. *Clim. Dyn.* , 39, 2421-2441, doi: 10.1007/s00382-012-1339-y. (published on-line 25 April 2012) (highlighted by Nature Climate Change, B. Wake, 2012: Climate and Baltic Sea nutrients, Vol. 2, p. 394, doi:10.1038/nclimate1567, published online 25 May 2012)

41. **Meier, H. E. M.**, B. Müller-Karulis, H. C. Andersson, C. Dieterich, K. Eilola, B. G. Gustafsson, A. Höglund, R. Hordoir, I. Kuznetsov, T. Neumann, Z. Ranjbar, O. P. Savchuk, and S. Schimanke, 2012: Impact of climate change on ecological quality indicators and biogeochemical fluxes in the Baltic Sea - a multi-model ensemble study. *AMBIO*, 41 (6), 558-573, doi:10.1007/s13280-012-0317-y, http://www.springerlink.com/content/n5158p42n133/

42. MacKenzie, B. R., **H. E. M. Meier**, M. Lindegren, S. Neuenfeldt, M. Eero, T. Blenckner, M. Tomczak, and S. Niiranen, 2012: Impact of Climate Change on Fish Population Dynamics in the Baltic Sea: A Dynamical Downscaling Investigation. *AMBIO*, 41 (6), 626-636, doi:10.1007/s13280-012-0317-y, http://www.springerlink.com/content/n5158p42n133/

43. Mårtensson, S., **H.E.M. Meier**, P. Pemberton and J. Haapala, 2012: Ridged sea ice characteristics in the Arctic from a coupled multicategory sea ice model. *J. Geophys. Res.*, 117, C00D15, doi:10.1029/2010JC006936.

44. Höglund, A. and **H. E. M. Meier**, 2012: Environmentally safe areas and routes in the Baltic proper. *Mar. Pollut. Bull.*, 64, 1375-1385, http://dx.doi.org/10.1016/j.marpolbul.2012.04.02 (published on-line 2 June 2012).

45. Eilola, K., E. Almroth-Rosell, C. Dieterich, F. Fransner, A. Höglund, and **H. E. M. Meier**, 2012: Modeling nutrient transports and exchanges of nutrients between shallow regions and the open Baltic Sea in present and future climate. *AMBIO*, 41 (6), 586-599, doi:10.1007/s13280-012-0317-y, http://www.springerlink.com/content/n5158p42n133/

46. Gustafsson, B. G., F. Schenk, T. Blenckner, K. Eilola, **H. E. M. Meier**, B. Müller-Karulis, T. Neumann, T. Ruoho-Airola, O.P. Savchuk, and E. Zorita, 2012: Reconstructing the development of Baltic Sea eutrophication 1850-2006. *AMBIO*, 41 (6), 534-548, doi:10.1007/s13280-012-0317-y, http://www.springerlink.com/content/n5158p42n133/

47. Neumann, T., K. Eilola, B. G. Gustafsson, B. Müller-Karulis, I. Kuznetsov, **H. E. M. Meier**, O. P. Savchuk, 2012: Extreme values of temperature, oxygen and blooms in the Baltic Sea in changing climate. *AMBIO*, 41 (6), 574-585, doi:10.1007/s13280-012-0317-y, http://www.springerlink.com/content/n5158p42n133/

48. **Meier, H. E. M.** and H. C. Andersson, 2012: ECOSUPPORT: A pilot study for decision support for Baltic Sea environmental management. *AMBIO*, 41 (6), 529-533, doi:10.1007/s13280-012-0317-y, http://www.springerlink.com/content/n5158p42n133/

49. **Meier, H. E. M.**, H. C. Andersson, B. Arheimer, T. Blenckner, B. Chubarenko, C. Donnelly, K. Eilola, B. G. Gustafsson, A. Hansson, J. Havenhand, A. Höglund, I. Kuznetsov, B. MacKenzie, B. Müller-Karulis, T. Neumann, S. Niiranen, J. Piwowarczyk, U. Raudsepp, M. Reckermann, T. Ruoho-Airola, O. P. Savchuk, F. Schenk, J. M. Weslawski, and E. Zorita, 2012: Comparing reconstructed past variations and future projections of the Baltic Sea ecosystem - first results from multi-model ensemble simulations. *Environ. Res. Lett.*, 7, 034005, doi:10.1088/1748-9326/7/3/034005 (see also interview "Climate change is bad for Baltic Sea" in News of environmentalresearchweb, http://environmentalresearchweb.org/cws/article/news/50469).

50. Schimanke, S., **H. E. M. Meier**, E. Kjellström, G. Strandberg and R. Hordoir, 2012: The climate in the Baltic Sea region during the last millennium. *Climate of the Past*, 8, 1419-1433, doi:10.5194/cp-8-1419-2012. (www.clim-past.net/8/1419/2012/)

51. Eilola, K., S. Mårtensson, and **H. E. M. Meier**, 2013: Modeling the impact of reduced sea ice cover in future climate on the Baltic Sea biogeochemistry. *Geophys. Res. Lett.*, 40, 149-154, doi:10.1029/2012GL054275

52. Hense, I., **H. E. M. Meier**, and S. Sonntag, 2013: Projected climate change impact on Baltic Sea cyanobacteria. *Climatic Change*, 119, 391-406, doi:10.1007/s10584-013-0702-y (published on-line 19 February 2013)

53. Löptien, U., S. Mårtensson, **H. E. M. Meier** and A. Höglund, 2013: Long-term characteristics of simulated ice deformation in the Baltic Sea (1962-2007). *J. Geophys. Res.*, 118/2, 801-815, doi:10.1002/jgrc.20089

54. Hordoir, R., C. Dieterich, C. Basu, H. Dietze, and **H. E. M. Meier**, 2013: Freshwater outflow of the Baltic Sea and transport in the Norwegian current: A statistical correlation analysis based on a numerical experiment. *Continental Shelf Research*, 64, 1-9

55. Niiranen, S., J. Yletyinen, M. M. Tomczak, T. Blenckner, O. Hjerne, B. MacKenzie, B. Müller-Karulis, T. Neumann, and **H. E. M. Meier**, 2013: Combined effects of global climate change and regional ecosystem drivers on an exploited marine food web. *Global Change Biology*, 19, 3327-3342, doi:10.1111/gcb.12309 (published online August 2013)

56. Väli, G., **H. E. M. Meier**, and J. Elken, 2013: Simulated halocline variability in the Baltic Sea and its impact on hypoxia during 1961-2007. *J. Geophys. Res.*, 118, 6982-7000, doi:10.1002/2013JC009192

57. Liu, Y., **H. E. M. Meier**, and L. Axell, 2013: Reanalyzing temperature and salinity on decadal time scales using the Ensemble Optimal Interpolation data assimilation method and a 3D ocean circulation model of the Baltic Sea. *J. Geophys. Res.*, 118, 5536-5554, doi:10.1002/jgrc.20384

58. **Meier, H. E. M.**, H. C. Andersson, B. Arheimer, C. Donnelly, K. Eilola, B. G. Gustafsson, L. Kotwicki, T. S. Neset, S. Niiranen, J. Piwowarczyk, O. P. Savchuk, F. Schenk, J. M. Weslawski, and E. Zorita, 2014: Ensemble modeling of the Baltic Sea ecosystem to provide scenarios for management. *AMBIO*, 43, 37-48, doi:10.1007/s13280-013-0475-6

59. Soomere, T., K. Döös, A. Lehmann, **H. E. M. Meier**, J. Murawsky, K. Myrberg, and E. Stanev, 2014: The potential of current- and wind-driven transport for environmental management of the Baltic Sea. *AMBIO*, 43, 94-104, doi:10.1007/s13280-013-0486-3

60. Kotilainen, A. T., L. Arppe, S. Dobosz, E. Jansen, K. Kabel, J. Karhu, M. M. Kotilainen,A. Kuijpers, B. C. Lougheed, **H. E. M. Meier**, M. Moros, T. Neumann, C. Porsche, N. Poulsen, J. P. Rasmussen, S. Ribeiro, B. Risebrobakken, D. Ryabchuk, S. Schimanke, I. Snowball, M. Spiridonov, J. Virtasalo, K. Weckström, A. Witkowski, and V. Zhamoida, 2014: Echoes from the past - a healthy Baltic Sea requires more effort. *AMBIO*, 43, 60-68, doi:10.1007/s13280-013-0477-4

61. Skogen, M. D., K. Eilola, J. S. Hansen, **H. E. M. Meier**, M. S. Molchanov, and V. A. Ryabchenko, 2014: Eutrophication status of the North Sea, Skagerrak, Kattegat and the Baltic Sea in present and future climates: A model study. *J. Marine Systems*, 132, 174-184

62. **Meier, H. E. M.**, A. Rutgersson, and M. Reckermann, 2014: Baltic Earth - A new Earth System Science Program for the Baltic Sea Region. *EOS, Trans. AGU*, 95(13), 109-110 (listed by AGU's Sharing Science Web site (http://sites.agu.org/sharingscience) as a good example for potential authors to emulate)

63. Pemberton, P., J. Nilsson, and **H. E. M. Meier**, 2014: Arctic Ocean freshwater composition, pathways and transformations from a passive tracer simulation. *Tellus A*, 66, 23988, http://dx.doi.org/10.3402/tellusa.v66.23988.

64. Eilola, K., E. Almroth-Rosell, and **H. E. M. Meier**, 2014: Impact of saltwater inflows on phosphorus cycling and eutrophication in the Baltic Sea. A 3D model study. *Tellus A*, 66, 23985.

65. Omstedt, A., J. Elken, A. Lehmann, M. Leppäranta, **H. E. M. Meier**, K. Myrberg and A. Rutgersson, 2014: Progress in physical oceanography of the Baltic Sea during the 2003 – 2014 period. *Progress in Oceanography*, 128, 139 – 171, doi: http://dx.doi.org/10.1016/j.pocean.2014.08.010 (published online 27 August 2014)

66. Wåhlström, I. and **H. E. M. Meier**, 2014: A model sensitivity study for the air-sea exchange of methane in the Laptev Sea, Arctic Ocean. *Tellus B*, 66, 24174, http://dx.doi.org/10.3402/tellus

67. Schimanke, S., C. Dieterich, and **H. E. M. Meier**, 2014: An algorithm based on SLP-fluctuations to identify major Baltic inflow events. *Tellus A*, 66, 23452, http://dx.doi.org/10.3402/tellusa.v66

68. Liu, Y., **H. E. M. Meier**, and K. Eilola, 2014: Improving the multi-annual, high-resolution modelling of biogeochemical cycles in the Baltic Sea by using data assimilation. *Tellus A*, 66, 24908, http://dx.doi.org/10.3402/tellusa.v66.24908.

69. Vuorinen, I., J. Hänninen, M. Rajasilta, P. Laine, J. Eklund, F. Montesino-Pouzols, F.Corona, K. Junker, **H. E. M. Meier**, and J. W. Dippner, 2015: Scenario simulations of future salinity and Ecological Consequences in the Baltic Sea and adjacent North Sea areas - implications for environmental monitoring. *Ecological Indicators*, 50, 196 - 205.

70. Pemberton, P., J. Nilsson, M. Hieronymus, and **H. E. M. Meier**, 2015: Arctic Ocean water-mass transformation in S-T coordinates. *Journal of Physical Oceanography*, 45, 1025–1050.

71. Almroth-Rosell, E., K. Eilola, I. Kuznetsov, P. O. J. Hall, and **H. E. M. Meier**, 2015: A new approach to model oxygen dependent benthic phosphate fluxes in the Baltic Sea. *Journal of Marine Systems*, 144, 127–141.

72. Andersson, A., **H.E.M. Meier**, M. Ripzsam, O. Rowe, J. Wikner, P. Haglund, K. Eilola, C. Legrand, D. Figueroa, J. Paczkowska, E. Lindehoff M. Tyskland, and R. Elmgren, 2015: Future climate change scenarios for the Baltic Sea ecosystem and impacts for management. *AMBIO*, 44(Suppl. 3), S345S356, DOI 10.1007/s13280-015-0654-8.

73. Wang, S., C. Dieterich, R. Döscher, A. Höglund, R. Hordoir, **H. E. M. Meier**, P. Samuelsson, and S. Schimanke, 2015: Development and evaluation of a new regional coupled atmosphere-ocean model in the North Sea and the Baltic Sea. *Tellus A*, 67, 24284, http://dx.doi.org/10.3402/tellusa.v67.24284

74. Weigel, B., H. C. Andersson, **H. E. M. Meier**, T. Blenckner, M. Snickars and E. Bonsdorff, 2015: Long-term progression and drivers of coastal zoobenthos in a changing system. *Marine Ecology Progress Series*, 528, 141159, doi: 10.3354/meps11279.

75. Fransner, F., J. Nycander, C.-M. Mörth, C. Humborg, **H. E. M. Meier**, R. Hordoir, E. Gustafsson and B. Deutsch, 2016: Tracing terrestrial DOC in the Baltic Sea - a 3D model study. *Global Biogeochemical Cycles*, 29, doi:10.1002/2014GB005078

76. Gröger, M., C. Dieterich, **H. E. M. Meier**, and S. Schimanke, 2015: Thermal air-sea coupling in hindcast simulations for the North and Baltic seas on the NW European shelf. *Tellus A*, 67, 26911, http://dx.doi.org/10.3402/tellusa.v67.26911.

77. Deng, J., J. Harff, S. Schimanke, and **H. E. M. Meier**, 2015: A method for estimating coastline recession due to sea level rise by assuming stationary wind-wave climate. *Journal of Oceanological and Hydrobiological Studies*, 44(3), 362-380.

78. Holopainen, R., M. Lehtiniemi, **H. E. M. Meier**, J. Albertsson, E. Gorokhova, J. Kotta, and M. Viitasalo, 2016: Impacts of changing climate on the non-indigenous invertebrates in the northern Baltic Sea by end of the 21st century. *Biological Invasions*, 18, 3015-3032, doi:10.1007/s10530-016-1197-z (published online June 2016).

79. Schimanke, S. and **H. E. M. Meier**, 2016: Decadal to centennial variability of salinity in the Baltic Sea. Journal of Climate, *29*(20), 7173-7188. http://dx.doi.org/10.1175/JCLI-D-15-0443.1 (published online June 2016).

80. Wåhlström, I., C. Dieterich, P. Pemberton, and **H. E. M. Meier, 2016**: Impact of increasing inflow of warm Atlantic water on the sea-air exchange of carbon dioxide and methane in the Laptev Sea. Journal of Geophysical Research - Biogeosciences, 121, 1867-1883, doi:10.1002/2015JG003307.

81. Almroth-Rosell, E., M. Edman, K. Eilola, **H. E. M. Meier**, J. Sahlberg, 2016: Modelling nutrient retention in the coastal zone of an eutrophic sea. Biogeosciences, 13, 5753-5769, doi:10.5194/bg-13-5753-2016.

82. **Meier, H. E. M.**, A. Höglund, E. Almroth-Rosell, and K. Eilola, 2017: Impact of accelerated future global mean sea level rise on hypoxia in the Baltic Sea. Climate Dynamics, 49, 163-172, https://doi.org/10.1007/s00382-016-3333-y (published online 27 August 2016).

83. Ho-Hagemann, H. T. M., M. Gröger, B. Rockel, B. Geyer, M. Zahn, and **H. E. M. Meier**, 2017: Effects of air-sea coupling over the North Sea and the Baltic Sea on simulated summer precipitation over Central Europe. *Climate Dynamics*, 49(11), 3851-3876, doi:10.1007/s00382-017-3546-8 (published online 13 March 2017).

84. Bartolino V., H. Tian, U. Bergström, P. Jounela, E. Aro, C. Dieterich, **H. E. M. Meier**, M. Cardinale, B. Bland, and M. Casini, 2017: Spatiotemporal dynamics of a fish predator: density-dependent and hydrographic effects on Baltic Sea cod population. PLOS ONE, http://dx.doi.org/10.1371/journal.pone.0172004, (published online 16 February 2017).

85. Liu, Y., **H. E. M. Meier**, and K. Eilola, 2017: Nutrient transports in the Baltic Sea - results from a 30-year physical-biogeochemical reanalysis. Biogeosciences, 14, 2113-2131, doi:10.5194/bg-14-2113-2017.

86. Bauer B., **H. E. M. Meier**, M. Casini, A. Hoff, P. Margoński, A. Orio, S. Saraiva, J. Stenbeek, M. T. Tomczak, 2018: Reducing eutrophication increases spatial extent of communities supporting commercial fisheries: a model case study. ICES Journal of Marine Sciences, Volume 75, Issue 4, 1 July 2018, 1306–1317, https://doi.org/10.1093/icesjms/fsy003

87. **Meier, H. E. M.,** G. Väli, M. Naumann, K. Eilola, and C. Frauen, 2018: Recently accelerated oxygen consumption rates amplify deoxygenation in the Baltic Sea. J. Geophys. Res., 123, 3227-3240, https://doi.org/10.1029/2017JC013686

88. Hieronymus, J., Eilola, K., Hieronymus, M., **Meier, H. E. M.,** Saraiva, S., and Karlson, B. (2018). Causes of simulated long-term changes in phytoplankton biomass in the Baltic proper: a wavelet analysis. Biogeosciences, 15(16), 5113–5129. https://doi.org/10.5194/bg-15-5113-2018.

89. Saraiva S., **H. E. M. Meier**, Helén Andersson, Anders Höglund, Christian Dieterich, Robinson Hordoir, and Kari Eilola, 2019: Baltic Sea ecosystem response to various nutrient load scenarios in present and future climates. Climate Dynamics, 52: 3369, https://doi.org/10.1007/s00382-018-4330-0.

90. **Meier, H. E. M.**, K. Eilola, E. Almroth-Rosell, S. Schimanke, M. Kniebusch, A. Höglund, P. Pemberton, Y. Liu, G. Väli, and S. Saraiva, 2019: Disentangling the impact of nutrient load and climate changes on Baltic Sea hypoxia and eutrophication since 1850. Climate Dynamics, 53:1145-1166, https://doi.org/10.1007/s00382-018-4296-y (published online 11 June 2018)

91. **Meier, H. E. M.,** K. Eilola, E. Almroth-Rosell, S. Schimanke, M. Kniebusch, A. Höglund, P. Pemberton, Y. Liu, G. Väli, and S. Saraiva, 2019: Correction to: Disentangling the impact of nutrient load and climate changes on Baltic Sea hypoxia and eutrophication since 1850. Climate Dynamics, 53:1167-1169, https://doi.org/10.1007/s00382-018-4483-x

92. Placke, M., **H. E. M. Meier**, U. Gräwe, T. Neumann, C. Frauen and Y. Liu, 2018: Long-term mean circulation of the Baltic Sea as represented by various ocean circulation models. Frontiers in Marine Science, 5:287. https://doi.org/10.3389/fmars.2018.00287

93. Edman, M., K. Eilola, E. Almroth-Rosell, **H. E. M. Meier**, I. Wåhlström and L. Arneborg, 2018: Nutrient retention along the Swedish coastline. Frontiers in Marine Science, 5:415. https://doi.org/10.3389/fmars.2018.00415.

94. **Meier, H. E. M.**, M. Edman, K. Eilola, M. Placke, T. Neumann, H. Andersson, S.-E. Brunnabend, C. Dieterich, C. Frauen, R. Friedland, M. Gröger, B. G. Gustafsson, E. Gustafsson, A. Isaev, M. Kniebusch, I. Kuznetsov, B. Müller-Karulis, A. Omstedt, V. Ryabchenko, S. Saraiva, and O. P. Savchuk, 2018: Assessment of eutrophication abatement scenarios for the Baltic Sea by multi-model ensemble simulations. Frontiers in Marine Science, 5:440, https://doi.org/10.3389/fmars.2018.00440

95. Börgel, F., C. Frauen, T. Neumann, S. Schimanke, and **H. E. M. Meier**, 2018: Impact of the Atlantic Multidecadal Oscillation on Baltic Sea variability. Geophysical Research Letter, 45(18), 9880-9888, https://doi.org/10.1029/2018GL078943.

96. Saraiva S., **H. E. M. Meier**, Helén Andersson, Anders Höglund, Christian Dieterich, Matthias Gröger, Robinson Hordoir, and Kari Eilola, 2019: Uncertainties in projections of the Baltic Sea ecosystem driven by an ensemble of global climate models. Frontiers in Earth Science, 6:244, https://doi.org/10.3389/feart.2018.00244

97. Zandersen, M., Hyytiainen, K., **Meier, H. E. M.**, Tomzcak, M., Bauer, B., Haapasaari, P., Olesen, J.E., Gustafsson, B., Refsgaard, J.C., Fridell, E., Pihlainen, S., Le Tissier, M.D.A., Kosenius, A.K., and Van Vuuren, D.P., 2019: Extending shared socioeconomic pathways for the Baltic Sea region for use in studying regional environmental problems. Regional Environmental Change, *19*(4), 1073-1086, https://doi.org/10.1007/s10113-018-1453-0

98. Bauer, B., B. Gustafsson, K. Hyytiäinen, **H. E. M. Meier**, B. Müller-Karulis, S. Saraiva, and M. T. Tomczak, 2019: Food web and fisheries in the future Baltic Sea. AMBIO, *48*(11), 1337-1349, https://doi.org/10.1007/s13280-019-01229-3 (published online 26 July 2019)

99. **Meier, H. E. M.,** M. Edman, K. Eilola, M. Placke, T. Neumann, H. Andersson, S.-E. Brunnabend, C. Dieterich, C. Frauen, R. Friedland, M. Gröger, B. G. Gustafsson, E. Gustafsson, A. Isaev, M. Kniebusch, I. Kuznetsov, B. Müller-Karulis, M. Naumann, A. Omstedt, V. Ryabchenko, S. Saraiva, and O. P. Savchuk, 2019: Assessment of uncertainties in scenario simulations of biogeochemical cycles in the Baltic Sea. Frontiers in Marine Science, 6:46, https://doi.org/10.3389/fmars.2019.00046

100. Kniebusch, M., **H. E. M. Meier**, T. Neumann and F. Börgel, 2019: Temperature variability of the Baltic Sea since 1850 in model simulations and observations and attribution to atmospheric forcing. Journal of Geophysical Research – Oceans, 124, 4168–4187. https://doi.org/10.1029/2018JC013948

101. **Meier, H. E. M.**, C. Dieterich, K. Eilola, M. Gröger, A. Höglund, H. Radtke, S. Saraiva, and I. Wåhlström, 2019: Future projections of record-breaking sea surface temperature and cyanobacteria bloom events in the Baltic Sea. AMBIO, **48**, 1362–1376, https://doi.org/10.1007/s13280-019-01235-5 (published online 10 September 2019).

102. Dieterich, C., S. Wang, S. Schimanke, M. Gröger, B. Klein, R. Hordoir, P. Samuelsson, Y. Liu, L. Axell, A. Höglund, and **H. E. M. Meier**, 2019: Surface heat budget over the North Sea in climate change simulations. Atmosphere, 10, 272; doi:10.3390/atmos10050272

103. Gröger, M., L. Arneborg, C. Dieterich, A. Höglund, and **H. E. M. Meier**, 2019: Hydrographic changes in the North Sea and Baltic Sea projected in an ensemble of climate scenarios downscaled with a coupled regional ocean-sea ice-atmosphere model. Climate Dynamics, https://doi.org/10.1007/s00382-019-04908-9 (published online 1 August 2019)

104. Radtke, H., Börgel, F., Brunnabend, S.-E., Eggert, A., Kniebusch, M., **Meier, H. E. M.**, Neumann, D., Neumann, T. and Placke, M., 2019: Validator – a Web-Based Interactive Tool for Validation of Ocean Models at Oceanographic Stations. Journal of Open Research Software, 7: 18. DOI: https://doi.org/10.5334/jors.259

105. Kniebusch, M., **H. E. M. Meier**, and H. Radtke, 2019: Changing salinity gradients in the Baltic Sea as a consequence of altered freshwater budgets. Geophysical Research Letters, 46, 9739–9747. https://doi.org/10.1029/2019GL083902.

106. She, Jun, **H. E. M. Meier**, Darecki Miroslaw, Patrick Gorringe, Vibeke Huesse, Tarmo Kouts, Jan Hinrich Reissmann, and Laura Tuomi, 2020: Baltic Sea Operational Oceanography – a stimulant for Baltic earth system research. Frontiers in Earth Science, Front. Earth Sci. 8:7. doi: 10.3389/feart.2020.00007

107. Hyytiäinen, K., B. Bauer, K. Bly Joyce, K. Eilola, E. Ehrnsten, B. Gustafsson, **H. E. M. Meier**, A. Norkko S. Saraiva, M. Tomczak, and M. Zandersen, 2021: Provision of aquatic ecosystem services as a consequence of societal changes: the case of the Baltic Sea. Population Ecology, 63, 61-74, DOI: 10.1002/1438-390X.12033 (published online 23 December 2019).

108. **Meier, H. E. M.,** Börgel, F., Frauen, C., and Radtke, H., 2020: Commentary: Lake or Sea? The unknown future of central Baltic Sea herring. Frontiers in Ecology and Evolution-Interdisciplinary Climate Studies, Front. Ecol. Evol. 8:55. doi: 10.3389/fevo.2020.00055.

109. Moros, M., Kotilainen, A.T., Snowball, I., Neumann, T., Perner, K., **Meier, H. E. M.**, Leipe, T., Zillén, L., Sinninghe Damsté, J. S., and Schneider, R., 2020: Is 'deep-water formation' in the Baltic Sea a key to understanding seabed dynamics and ventilation changes over the past 7,000 years? Quaternary International, 550, 55-65. https://doi.org/10.1016/j.quaint.2020.03.031

110. Radtke, H., Brunnabend, S.-E., Gräwe, U., and **H. E. M. Meier**, 2020: Explaining interdecadal salinity changes in the Baltic Sea in a 1850-2008 hindcast simulation. Clim. Past, 16, 1617–1642, 2020 https://doi.org/10.5194/cp-16-1617-2020

111. Börgel, F., Frauen, C., Neumann, T. and **Meier, H. E. M.**, 2020: Influence of the Atlantic Multidecadal Oscillation on the spatial pattern of the North Atlantic Oscillation. Environ. Res. Lett. 15, 104025, https://doi.org/10.1088/1748-9326/aba925

112. Sampo Pihlainen, Marianne Zandersen, Kari Hyytiäinen, Hans Estrup Andersen, Alena Bartosova, Bo Gustafsson, Mohamed Jabloun, Michelle McCrackin, **H. E. Markus Meier**, Jørgen E. Olesen, Sofia Saraiva, Dennis Swaney, Hans Thodsen, 2020: Impacts of changing society and climate on nutrient pollution of the Baltic Sea. Science of The

Total Environment, Volume 731, 20 August 2020, 138935, https://doi.org/10.1016/j.scitotenv.2020.138935

113. Giesse, C., **Meier, H. E. M.**, Neumann, T., and Moros, M., 2020: Revisiting the Role of Convective Deep Water Formation in Northern Baltic Sea Bottom Water Renewal. Journal of Geophysical Research: Oceans, *125*, e2020JC016114. https://doi.org/10.1029/2020JC016114

114. Reckermann, M., **H. E. M. Meier**, and M. Stendel, 2020: Editorial: The Baltic Sea Region in Transition, Frontiers in Earth Science, Volume 8, doi:10.3389/feart.2020.589252

115. Gröger, M., C. Dieterich, and **Meier, H. E. M.**, 2021: Is interactive air sea coupling relevant for simulating the future climate of Europe? Climate Dynamics, 56:491-514, https://doi.org/10.1007/s00382-020-05489-8 (published online 2020-10-12).

116. **Meier, H. E. M.**, C. Dieterich, and M. Gröger, 2021: Natural variability is a large source of uncertainty in future projections of hypoxia in the Baltic Sea. Commun. Earth Environ. 2, 50, https://doi.org/10.1038/s43247-021-00115-9 (published online 2021-02-26).

117. Placke, M., **Meier, H. E. M.**, and T. Neumann, 2021: Sensitivity of the Baltic Sea overturning circulation to long-term atmospheric and hydrological changes. Journal of Geophysical Research – Oceans, 126, e2020JC016079, https://doi.org/10.1029/2020JC016079 (published online 2021-02-07)

118. Matthias Gröger, Christian Dieterich, Jari Haapala, Ha Thi Minh Ho-Hagemann, Stefan Hagemann, Jaromir Jakacki, Wilhelm May, **H. E. Markus Meier**, Paul. A. Miller, Anna Rutgersson, and Lichuan Wu, 2021: Coupled regional Earth system modelling in the Baltic Sea region. Earth Syst. Dynam., 12, 939–973, 2021, https://doi.org/10.5194/esd-12-939-2021

119. Gröger, M., C. Dieterich, C. Dutheil, **H. E. M. Meier** and D. V. Sein, 2022: Atmospheric rivers in CMIP5 climate ensembles downscaled with a high-resolution regional climate model. Earth System Dynamics, *13*(1), 613-631. https://doi.org/10.5194/esd-13-613-2022

120. **Meier, H. E. M.**, C. Dieterich, M. Gröger, C. Dutheil, F. Börgel, K. Safonova, O. B. Christensen, and E. Kjellström, 2022: Oceanographic regional climate projections for the Baltic Sea until 2100. Earth Syst. Dynam., 13, 159–199, https://doi.org/10.5194/esd-13-159-2022

121. Krapf, K., Naumann, M., Dutheil, C., and **Meier, H. E. M.**, 2022: Investigating hypoxic and euxinic area changes based on various datasets from the Baltic Sea. Front. Mar. Sci. 9:823476, doi: 10.3389/fmars.20.2022.823476

122. Lehmann, A., Myrberg, K., Post, P., Chubarenko, I., Dailidiene, I., Hinrichsen, H.-H., Hüssy, K., Liblik, T., **Meier, H. E. M.**, Lips, U., and Bukanova, T.: Salinity dynamics of the Baltic Sea, Earth Syst. Dynam., 13, 373–392, https://doi.org/10.5194/esd-13-373-2022, 2022.

123. **Meier, H. E. M.**, Madline Kniebusch, Christian Dieterich, Matthias Gröger, Eduardo Zorita, Ragnar Elmgren, Kai Myrberg, Markus Ahola, Alena Bartosova, Erik Bonsdorff, Florian Börgel, Rene Capell, Ida Carlén, Thomas Carlund, Jacob Carstensen, Ole B. Christensen, Volker Dierschke, Claudia Frauen, Morten Frederiksen, Elie Gaget, Anders Galatius, Jari J. Haapala, Antti Halkka, Gustaf Hugelius, Birgit Hünicke, Jaak Jaagus, Mart Jüssi, Jukka Käyhkö, Nina Kirchner, Erik Kjellström, Karol Kulinski,

Andreas Lehmann, Göran Lindström, Wilhelm May, Paul Miller, Volker Mohrholz, Bärbel Müller-Karulis, Diego Pavón-Jordán, Markus Quante, Marcus Reckermann, Anna Rutgersson, Oleg P. Savchuk, Martin Stendel, Laura Tuomi, Markku Viitasalo, Ralf Weisse, and Wenyan Zhang, 2022: Climate Change in the Baltic Sea Region: A Summary. Earth Syst. Dynam., 13, 457–593, https://doi.org/10.5194/esd-13-457-2022

124. Christensen, O. B., E. Kjellström, C. Dieterich, M. Gröger, and **H. E. M. Meier**, 2022: Atmospheric Projections for the Baltic Sea Region until 2100. Earth System Dynamics, submitted. Earth Syst. Dynam., 13, 133–157, https://doi.org/10.5194/esd-13-133-2022

125. Reckermann, Marcus, Anders Omstedt, Tarmo Soomere, Juris Aigars, Naveed Akhtar, Magdalena Bełdowska, Jacek Bełdowski, Tom Cronin, Michał Czub, Margit Eero, Kari Petri Hyytiäinen, Jukka-Pekka Jalkanen, Anders Kiessling, Erik Kjellström, Karol Kuliński, Xiaoli Guo Larsén, Michelle McCrackin, **H. E. Markus Meier**, Sonja Oberbeckmann, Kevin Parnell, Cristian Pons-Seres de Brauwer, Anneli Poska, Jarkko Saarinen, Beata Szymczycha, Emma Undeman, Anders Wörman, and Eduardo Zorita, 2022: Human impacts and their interactions in the Baltic Sea region. Earth Syst. Dynam, 13, 1-80, https://doi.org./10.5194/esd-13-1-2022

126. Kuliński, K., G. Rehder, E. Asmala, A. Bartosova, J. Carstensen, B. Gustafsson, P. O. J. Hall, C. Humborg, T. Jilbert, K. Jürgens, **H. E. M. Meier**, B. Müller-Karulis, M. Naumann, J. E. Olesen, O. Savchuk, A. Schramm, C. P. Slomp, M. Sofiev, A. Sobek, B. Szymczycha, and E. Undeman, 2022: Biogeochemical functioning of the Baltic Sea. Earth Syst. Dynam., 13, 633–685, https://doi.org/10.5194/esd-13-633-2022

127. Hieronymus, J., Eilola, K., M. Olofsson, I. Hense, **H. E. M. Meier**, and E. Almroth-Rosell, 2021: Modeling cyanobacteria life cycle dynamics and historical nitrogen fixation in the Baltic Sea. Biogeosciences, *18*(23), 6213-6227, https://doi.org/10.5194/bg-18-6213-2021

128. Dutheil, C., **Meier, H. E. M.,** Gröger, M., and Börgel, F., 2022: Understanding past and future sea surface temperature trends in the Baltic Sea. Climate Dynamics, *58*(11), 3021-3039, https://doi.org/10.1007/s00382-021-06084-1 (published online 2021-12-08)

129. Börgel, F., **Meier, H. E. M.**, Gröger, M., Rhein, M., Dutheil, C., and Kaiser, J. M., 2022: Atlantic Multidecadal Variability and the Implications for North European Precipitation, Environmental Research Letters, *17*(4), 044040, https://doi.org/10.1088/1748-9326/ac5ca1

130. **Meier, H. E. M.**, L. Barghorn, F. Börgel, M. Gröger, L. Naumov, and H. Radtke, 2023: Multidecadal climate variability dominated past trends in the water balance of the Baltic Sea watershed. npj Climate and Atmospheric Science 6:58, https://doi.org/10.1038/s41612-023-00380-9.

131. Gröger, M., Placke, M., **Meier, H. E. M.**, Börgel, F., Brunnabend, S.-E., Dutheil, C., Gräwe, U., Hieronymus, M., Neumann, T., Radtke, H., Schimanke, S., Su, J., and Väli, G., 2022: The Baltic Sea model inter-comparison project BMIP – a platform for model development, evaluation, and uncertainty assessment. Geosci. Model Dev., 15, 8613–8638, https://doi.org/10.5194/gmd-15-8613-2022

132. Dutheil, C., **H. E. M. Meier**, M. Gröger, and F. Börgel, 2023: Warming of Baltic Sea water masses since 1850. Climate Dynamics, 61, 1311-1331,

https://doi.org/10.1007/s00382-022-06628-z (published online 22 December 2022)

133. Marcus Reckermann, Jan Harff, **H. E. M. Meier**, Karol Kuliński, Hans von Storch, 2023: Earth system changes in marginal seas, Oceanologia 65, V-VIII, ISSN 0078-3234, https://doi.org/10.1016/j.oceano.2023.01.001. (https://www.sciencedirect.com/science/article/pii/S0078323423000015)

134. **Meier, H. E. M.**, M. Reckermann, J. Langner, B. Smith and I. Didenkulova, 2023: The Baltic Earth Assessment Reports. Earth Syst. Dynam., 14, 519–531, https://doi.org/10.5194/esd-14-519-2023

135. Börgel, F., M. Gröger, **H. E. M. Meier**, C. Dutheil, H. Radtke and L. Borchert, 2023: The impact of the Atlantic Multidecadal Variability on the Baltic Sea temperatures is limited to wintertime. npj Climate and Atmospheric Science 6:64, https://doi.org/10.1038/s41612-023-00373-8.

136. Naumov, L., Neumann, T., Radtke, H., and **Meier, H. E. M.**, 2023: Limited ventilation of the central Baltic Sea due to elevated oxygen consumption. Frontiers in Marine Science, 10:1175643, DOI 10.3389/fmars.2023.1175643 (published online 24 April 2023)

137. Börgel, F., Neumann, T., Rooze, J., Radtke, H., Barghorn, L., and **Meier H. E. M.**, 2023: Deoxygenation of the Baltic Sea during the last millennium. Frontiers in Marine Science, 10:1174039, doi: 10.3389/fmars.2023.1174039.

138. Naumov, L., **Meier, H. E, M.**, and Neumann, T., 2023: Dynamics of oxygen sources and sinks in the Baltic Sea under different nutrient inputs. Frontiers in Marine Science, 10: 1233324, doi: 10.3389/fmars.2023.1233324

139. Barghorn, L., **Meier, H. E. M.**, and Radtke, H., 2023: Changes in seasonality of saltwater inflows into the Baltic Sea. Geophysical Research Letters, 50/12, e2023GL103853, http://dx.doi.org/10.1029/2023GL103853

140. Matthias Moros, Aarno Tapio Kotilainen, Ian Snowball, Thomas Neumann, Kerstin Perner, **H. E. Markus Meier**, Thomas Leipe, Jaap S. Sinninghe Damsté, Ralph Schneider, 2023: Giant saltwater inflow triggered Baltic Sea hypoxia. Boreas, Vol. 53, pp. 125–13. https://doi.org/10.1111/bor.12643. ISSN 0300-9483 (published online 29 December 2023). http://dx.doi.org/10.1111/bor.12643

141. Väli, G., **Meier, H. E. M.**, Liblik, T., Radtke, H., Klingbeil, K., Gräwe, U., and Lips, U., 2024: Submesoscale processes in the surface layer of the central Baltic Sea: a high resolution modelling study. Oceanologia, doi:10.1016/j.oceano.2023.11.002 (published online 30 November 2023).

142. Gröger, M., Dutheil, C., Börgel, F., and **Meier, H. E. M.**, 2024: Drivers of marine heatwaves in a stratified marginal sea. Climate Dynamics, 7062, DOI:10.1007/s00382-023-07062-5

143. Karsten, S., Radtke, H., Gröger; M., Hagemann, H., Mashayekh, H., Neumann, T., and **Meier, H. E. M.**, 2024: Flux coupling approach on an exchange grid for the IOW Earth System Model (version 1.04.00) of the Baltic Sea region. Geosci. Model Dev., 17, 1689–1708, https://doi.org/10.5194/gmd-17-1689-2024

144. Safonova, K., **Meier, H. E. M.**, and Gröger, M., 2024: Summer heatwaves on the Baltic Sea seabed contribute to oxygen deficiency in shallow areas. Communications Earth & Environment, 5:106, https://doi.org/10.1038/s43247-024-01268-z.

145. Hariri, S., **Meier, H. E. M.**, and Väli, G., 2024: Investigating the Influence of Sub-mesoscale Current Structures on Baltic Sea Connectivity Through a Lagrangian Analysis. Frontiers in Marine Science, section Physical Oceanography, Front. Mar. Sci. 11:1340291. doi: 10.3389/fmars.2024.1340291

146. Wåhlström, I., Almroth-Rosell, E., Edman, M., Olofsson, M., Eilola, K., Fleming, V., Gröger, M., Arneborg, L., and **Meier, H. E. M.**, 2024: Future coastal zone in a eutrophic sea: Increased nutrient retention and risk for enhanced cyanobacterial blooms. Estuarine, Coastal and Shelf Science, Volume 301, June 2024, 108728, https://doi.org/10.1016/j.ecss.2024.108728 (published online 25 March 2024)

147. Melet, A., van de Wal, R., Amores, A., Arns, A., Chaigneau, A. A., Dinu, I., Haigh, I. D., Hermans, T. H. J., Lionello, P., Marcos, M., **Meier, H. E. M.,** Meyssignac, B., Palmer, M. D., Reese, R., Simpson, M. J. R., and Slangen, A. B. A.: Sea Level Rise in Europe: Observations and projections, in: Sea Level Rise in Europe: 1st Assessment Report of the Knowledge Hub on Sea Level Rise (SLRE1), edited by: van den Hurk, B., Pinardi, N., Kiefer, T., Larkin, K., Manderscheid, P., and Richter, K., Copernicus Publications, State Planet, 3-slre1, 4, https://doi.org/10.5194/sp-3-slre1-4-2024, 2024.

148. Jahangir Vajedsamiei, Niklas Warlo, **H. E. Markus Meier**, and Frank Melzner, 2024: Predicting key ectotherm population mortality in response to dynamic marine heatwaves: A Bayesian-enhanced Thermal Tolerance Landscape approach. Functional Ecology, DOI: 10.1111/1365-2435.14620

149. Dorothee Moll, Harald Asmus, Alexandra Blöcker, Uwe Böttcher, Jan Conradt, Leonie Färber, Nicole Funk, Steffen Funk, Gutte Helene, Hans-Harald Hinrichsen, Paul Kotterba, Frane Madiraca, **H. E. M. Meier**, Stefanie Meyer, Timo Moritz, Saskia A. Otto, Martin Parr, Guilherme Pinto, Patrick Polte, Marie-Catherine Riekhof, Victoria Sarrazin, Rudi Voss, Helmut Winkler, and Christian Möllmann, 2024: A climate vulnerability assessment of the fish community in the Western Baltic Sea. Scientific Reports, 14:16184, https://doi.org/10.1038/s41598-024-67029-2.

150. C. Dutheil, S. Lal, M. Lengaigne, S. Cravatte, C. Menkès, A. Receveur, F. Börgel, M. Gröger, F. Houlbreque, R. Le Gendre, I. Mangolte, A. Peltier, and **H. E. M. Meier**, 2024: The massive 2016 marine heatwave in the Southwest Pacific: an "El Niño - Madden-Julian Oscillation" compound event. Science Advances, Vol 10, Issue 41.

151. Gröger, M., Börgel, F., Karsten, S., **Meier, H. E. M.**, Safonova, K., Dutheil, C., Receveur, A., Polte. P., 2024: Future climate change and marine heatwaves - projected impact on key habitats for herring reproduction. Science of the Total Environment, 951, 17575, https://doi.org/10.1016/j.scitotenv.2024.175756

152. Jiménez, J. A., Winter, G., Bonaduce, A., Depuydt, M., Galluccio, G., van den Hurk, B., **Meier, H. E. M.**, Pinardi, N., Pomarico, L. G., and Vazquez Riveiros, N., 2024: Sea Level Rise in Europe: Knowledge gaps identified through a participatory approach, in: Sea Level Rise in Europe: 1st Assessment Report of the Knowledge Hub on Sea Level Rise (SLRE1), edited by: van den Hurk, B., Pinardi, N., Kiefer, T., Larkin, K., Manderscheid, P., and Richter, K., Copernicus Publications, State Planet, 3-slre1, 3, https://doi.org/10.5194/sp-3-slre1-3-2024

153. Barghorn, L., **H. E. M. Meier**, H. Radtke, and T. Neumann, and L. Naumov, 2025: Warm saltwater inflows strengthen oxygen depletion in the western Baltic Sea. Climate Dynamics, 63:29, https://doi.org/10.1007/s00382-024-07501-x (published online 6 December 2024)

154. Mashayekh-Poul, H., Gröger, M., Karsten, S., Mayer, B., Pohlmann, T., and **Meier, H. E. M.**, 2025: Natural variability masks climate change sea surface temperature signals: a comparison between the Baltic Sea, North Sea and North Atlantic Ocean. Climate Dynamics, 63:102, https://doi.org/10.1007/s00382-024-07538-y (published online 28 January 2025)

155. Hariri, S., Väli, G., and **Meier, H. E. M.**, 2025: Impact of Coastal Currents and Eddies on Particle Dispersion in the Baltic Sea: A Lagrangian Approach to Marine Ecosystems. Frontiers in Marine Science, 12, 1545035. https://doi.org/10.3389/fmars.2025.1545035

156. Barghorn, L., Börgel, F., Gröger, M., and **Meier, H. E. M.**, 2025: Atlantic Multidecadal Variability control on European seas is mainly externally forced. Environmental Research Letters, *Environ. Res. Lett.* **20** 034044, https://doi.org/10.1088/1748-9326/adb6bf

157. Naumov, L., and **Meier, H. E. M.**, 2026: Major Baltic Inflows do not have long-lasting consequences for 20th century hypoxia in the central Baltic Sea. Communications Earth & Environment, 7:205, https://doi.org/10.1038/s43247-026-03245-0.

158. Gröger, M., Börgel, F., Dutheil, C., Karsten, S., **Meier, H. E. M.**, Safonova, K., Völker, G. S., 2026: The world's enclosed seas reveal the limits of climate mitigation for coastal ecosystems. Communications Earth & Environment, 7:312, https://doi.org/10.1038/s43247-026-03412-3.

159. Börgel, F., Ruvalcaba Baroni, I., Barghorn, L., Borchert, L., Cahill, B., Dutheil, C., Esters, L., Falarz, M., Filipsson, H. L., Gröger, M., Hänninen, J., Hieronymus, M., Jakobson, E., Karami, M. P., Kuliński, K., Liblik, T., **Meier, H. E. M.**, Messori, G., Naumov, L., Neumann, T., Post, P., Rehder, G., Rutgersson, A., and Voelker, G. S.: Large-scale atmospheric circulation and its impact on the Baltic Sea region: controls, predictability and consequences, Earth Syst. Dynam., 17, 415–450, https://doi.org/10.5194/esd-17-415-2026, 2026.

160. Lips, U., Salm, K., Väli, G., Liblik, T., Arneborg, L., Biddle, L. C., Bulczak, A. I., Chrysagie, E., Falarz, M., Holtermann, P., Jakacki, J., **Meier, H. E. M.**, Mohrmann, M., Myrberg, K., Pemberton, P. & Umlauf, L., 2026: Submesoscale dynamics in the Baltic Sea–a review. Progress in Oceanography, 245, 103746, https://doi.org/10.1016/j.pocean.2026.103746

161. Väli, G., **Meier, H. E. M.**, Radtke, H., Liblik, T., Hariri, S., Urmas Lips, U., 2026: Role of small-scale processes in the coastal offshore exchange in the Baltic Sea: results from a multi-year high-resolution modelling study. Manuscript submitted.

162. Safonova, K., Gröger, M. and **Meier, H. E. M.,** 2026: Future marine heatwaves will expand relatively more on the Baltic seabed than the surface. Manuscript submitted.

Monographs (Scientific reports)

1. **Meier, H.E.M.**, 1999: First results of multi-year simulations using a 3D Baltic Sea model. *Reports Oceanography No.27, SMHI, Norrköping, Sweden*, 48 pp.

2. **Meier, H.E.M.**, R. Döscher, A.C. Coward, J. Nycander and K. Döös, 1999: RCO - Rossby Centre regional Ocean climate model: model description (version 1.0) and first results from the hindcast period 1992/93. *Reports Oceanography No.26, SMHI, Norrköping, Sweden*, 102 pp.

3. **Meier, H.E.M.**, 2000: The use of the $k-\epsilon$ turbulence model within the Rossby Centre regional ocean climate model: parameterization development and results. *Reports Oceanography No.28, SMHI, Norrköping, Sweden*, 81 pp.

4. **Meier, H.E.M.**, 2001: The first Rossby Centre regional climate scenario for the Baltic Sea using a 3D coupled ice-ocean model. *Reports Meteorology and Climatology No.95, SMHI, Norrköping, Sweden*, 63 pp.

5. Kauker, F., and **H.E.M. Meier**, 2002: Reconstructing atmospheric surface data for the period 1902-1998 to force a coupled ocean-sea ice model of the Baltic Sea. *Reports Meteorology and Climatology No.99, SMHI, Norrköping, Sweden*, 30 pp.

6. **Meier, H.E.M.** and F. Kauker, 2002: Simulating Baltic Sea climate for the period 1902-1998 with the Rossby Centre coupled ice-ocean model. *Reports Oceanography No.30, SMHI, Norrköping, Sweden*, 111 pp.

7. Räisänen, J., U. Hansson, A. Ullerstig, R. Döscher, L.P. Graham, C. Jones, **M. Meier**, P. Samuelsson and U. Willén, 2003: GCM driven simulations of recent and future climate with the Rossby Centre coupled atmosphere - Baltic Sea regional climate model RCAO. *Reports Meteorology and Climatology No.101, SMHI, Norrköping, Sweden*, 61 pp.

8. **Meier, H.E.M.**, J. Andréasson, B. Broman, L.P. Graham, E. Kjellström, G. Persson, and M. Viehhauser, 2006: Climate change scenario simulations of wind, sea level, and river discharge in the Baltic Sea and Lake Mälaren region - a dynamical downscaling approach from global to local scales. *Reports Meteorology and Climatology No.109, SMHI, Norrköping, Sweden*, 52 pp.

9. Gustafsson, B.G., **H.E.M. Meier**, O.P. Savchuk, K. Eilola, L. Axell, and E. Almroth, 2008: Simulation of some engineering measures aiming at reducing effects from eutrophication of the Baltic Sea. *Report Series C82, Earth Sciences Centre, Göteborg University, Sweden*, 59 pp.

10. Eilola, K., **H.E.M. Meier**, Almroth, E., and A. Höglund, 2008: Transports and budgets of oxygen and phosphorus in the Baltic Sea. *Rapport Oceanografi No.96, SMHI, Norrköping, Sweden*, 39 pp.

11. Höglund, A., **H.E. M. Meier**, B. Broman, and E. Kriezi, 2009: Validation and correction of regionalised ERA-40 wind fields over the Baltic Sea using the Rossby Centre Atmosphere model RCA3.0. *Rapport Oceanografi No.97, SMHI, Norrköping, Sweden*, 29 pp.

12. Eilola, K., B.G. Gustafson, R. Hordoir, A. Höglund, I. Kuznetsov, **H.E.M. Meier**, T. Neumann, and O. P. Savchuk, 2010: Quality assessment of state-of-the-art coupled physicalbiogeochemical models in hindcast simulations 1970-2005. *Rapport Oceanografi No.101, SMHI, Norrköping, Sweden*, 21 pp.

13. **Meier, H.E.M.** and K. Eilola, 2011: Future projections of ecological patterns in the Baltic Sea. *Rapport Oceanografi No.107 SMHI, Norrköping, Sweden*, 15 pp.

14. **Meier, H.E.M.**, H. Andersson, C. Dieterich, K. Eilola, B.G. Gustafsson, A. Höglund, R. Hordoir and S. Schimanke, 2011: Transient scenario simulations for the Baltic Sea Region during the 21st century. *Rapport Oceanografi No.108 SMHI, Norrköping, Sweden*, 81 pp.

15. Löptien, U. and **H.E.M. Meier**, 2011: Simulated distribution of colored dissolved organic matter in the Baltic Sea. *Rapport Oceanografi No.109, SMHI, Norrköping, Sweden*, 15 pp.

16. Eilola, K., J. Hansen, **H.E.M. Meier**, K. Myrberg, V.K. Ryabchenko and M.D. Skogen, 2011: Eutrophication Status Report of the North Sea, Skagerrak, Kattegat and the Baltic Sea: A model study. *Rapport Oceanografi No.110, SMHI, Norrköping, Sweden*, 55 pp.

17. Schimanke, S., E. Kjellström, G. Strandberg, and **H.E.M. Meier**, 2011: A regional climate model simulation over Europe for the last Millennium. *Rapport Oceanografi No.111, SMHI, Norrköping, Sweden*, 37 pp.

18. Gustafsson, B.G., O.P. Savchuk, and **H.E.M. Meier**, 2011: Load scenarios for ECOSUPPORT. *Technical Report No.4*, Baltic Nest Institute, Stockholm, Sweden. ISSN 978-9186655-03-7.

19. **Meier, H. E. M.**, K. Eilola, B. G. Gustafsson, I. Kuznetsov, T. Neumann, and O. P. Savchuk, 2012: Uncertainty assessment of projected ecological quality indicators in future climate. *Rapport Oceanografi No.112, SMHI, Norrköping, Sweden*, 11 pp.

20. Väli, G., **H. E. M. Meier** and J. Elken, 2012: Simulated variations of the Baltic Sea halocline during 1961-2007. *Report Oceanography, No.44, SMHI, Norrköping, Sweden*, 37 pp. (http://www.smhi.se/polopoly fs/1.21994!RO 44.pdf)

21. Dieterich, C., S. Schimanke, S. Wang, G. Väli, Y. Liu, R. Hordoir, L. Axell, A. Höglund, and **H. E. M. Meier**, 2013: Evaluation of the SMHI coupled atmosphere-ice-ocean model RCA4-NEMO. *Report Oceanography (RO) No.47, SMHI, Norrköping, Sweden*, 60 pp.

22. Hordoir, R., B. W. An, J. Haapala, and **H. E. M. Meier**, 2013: BaltiX V1.1: A 3D ocean modelling configuration for Baltic and North Sea exchange analysis. *Report Oceanography (RO) No.48, SMHI, Norrköping, Sweden*, 66 pp.

23. Eilola, K., J. Hansen, **H. E. M. Meier**, M.S. Molchanov, V.A. Ryabchenko and M.D. Skogen, 2013: Eutrophication Status Report of the North Sea, Skagerrak, Kattegat and the Baltic Sea: A model study. Present and Future Climate. *Rapport Oceanografi No.115, SMHI, Norrköping, Sweden*, 38 pp.

24. Bülow, K., C. Dieterich, A. Elizalde, M. Gröger, H. Heinrich, S. Hüttl-Kabus, B. Klein, B.Mayer, **H. E. M. Meier**, U. Mikolajewicz, N. Narayan, T. Pohlmann, G. Rosenhagen, S. Schimanke, D. Sein, and J. Su, 2014: Comparison of three regional coupled ocean atmosphere models for the North Sea under today's and future climate conditions. KLIWAS27/2014, KLIWAS Zeitschriftenreihe, Bundesanstalt für Gewässerkunde, Koblenz, 265 pp, DOI:10.5675/Kliwas 27/2014

25. Germo Väli, **H. E. M. Meier**, Manja Placke, Christian Dieterich: River runoff forcing for ocean modeling within the Baltic Sea Model Intercomparison Project. Meereswiss. Ber., Warnemünde, 113 (2019), doi:10.12754/msr-2019-0113

Book chapters

1. **Meier, H.E.M.**, 2005: The doubly stratified regime: turbulence closures for an OGCM of the Baltic Sea. In: H.Z. Baumert, J. Simpson, and J. Sündermann (eds.), *Marine Turbulence: Theories, Observations, and Models. Results of the CARTUM Project.*, chapter 47, Cambridge University Press, Cambridge, 376-382

2. Rippeth, T. and **H.E.M. Meier**, 2005: The four shelf-sea regimes. In: H. Baumert, J. Simpson, and J. Sündermann (eds.), *Marine Turbulence: Theories, Observations, and Models. Results of the CARTUM Project.*, chapter 46, Cambridge University Press, Cambridge, 369-375

3. Heino, R., H. Tuomenvirta, V.S. Vuglinsky, B.G. Gustafsson, H. Alexandersson, L. Bärring, A. Briede, J. Cappelen, D. Chen, M. Falarz, M. Falarz, E. Førland, J. Haapala, J. Jaagus, L. Kitaev, A. Kont, E. Kuusisto, G. Lindström, H.E.M. Meier, M. Mietus, A. Moberg, K. Myrberg, T. Niedzwiedz, Ø. Nordli, A. Omstedt, K. Orviku, Z. Pruszak, E. Rimkus, V. Russak, C. Schrum, U. Suursaar, T. Vihma, R. Weisse, and J. Wibig, 2008: Past and cur-¨ rent climate change. In: Assessment of climate change in the Baltic Sea Basin (BACC), chap. 2, pp. 35–131, Springer Verlag, Berlin, Heidelberg.

4. Graham, L.P., D. Chen, O.B. Christensen, E. Kjellström, V. Krysanova, **H.E.M. Meier**, M. Radziejewski, J. Räisänen, B. Rockel, and K. Ruosteenoja, 2008: Projections of future anthropogenic climate change. In: *BALTEX Assessment of climate change in the Baltic Sea Basin (BACC)*, chap. 3, pp. 133–219, Springer Verlag, Berlin, Heidelberg.

5. Andersson, A. and **H.E.M. Meier**, 2010: Hur påverkas haven runt Sveriges kust av klimatförändringar? (How does climate change affect the seas around the Swedish coasts?) In: *Formas fokuserar: Sverige i nytt klimat*, *Forskningsrådet Formas, Stockholm, Sweden*, p. 117-132 (ISBN 978-91-540-6040-5)

6. **Meier, H.E.M.** and A. Höglund, 2012: Studying the Baltic Sea circulation with Eulerian tracers. In: T. Soomere and E. Quak, *Preventive Methods for Coastal Pollution: towards the Use of Ocean Dynamics for Pollution Control*, chapter 4, 105–134 Springer Verlag, Heidelberg.

7. **H.E.M. Meier**, 2015 (lead author): Projected Change - Marine Physics. In: *The BACC II Author Team: Second Assessment of Climate Change in the Baltic Sea Basin (BACC II)*, chap. 13, pp. 243 – 252. Springer Verlag, Cham, Heidelberg, New York, Dordrecht, London. Doi 10.1007/978-3-319-16006-1.

8. Schrum, C., J. Lowe, **H.E.M. Meier**, I. Grabemann, J. Holt, M. Mathis, T. Pohlmann, M. Skogen, A. Sterl and S. Wakelin, 2016: Projected change - North Sea. In: M. Quante, F. Colijn (eds). North Sea Region Climate Change Assessment, Regional Climate Studies, chap.~6, Springer Verlag, Cham, Heidelberg, New York, Dordrecht, London, pp 175-217

9. Rechid, D., **H.E.M. Meier**, C. Schrum, M. Rummukainen, C. Moseley, K. Bülow, A. Elizalde, J. Su and T. Pohlmann, 2016: Climate Model Simulations for the North Sea Region. In: M. Quante, F. Colijn (eds). North Sea Region Climate Change Assessment, Regional Climate Studies, annex~2, Springer Verlag, Cham, Heidelberg, New York, Dordrecht, London, pp 495-504

Compendia

1. **Meier, H.E.M.**, 2009: Physical oceanography of the Baltic Sea and seas around Sweden. Course for PhD students, Stockholm University, January 2005 and February 2009, 195 pp.
2. **Meier, H.E.M.,** 2017: Climate of the ocean, Master course, Rostock University, winter term 2016/2017, 3 ECTS, 68 pp

Other scientific publications (Newsletter articles, conference abstracts and proceedings, etc.)

1. **Meier, H.E.M.**, and W. Krauss, 1994: Data assimilation into a numerical model of the Baltic Sea using the adjoint method, In: *Proceedings of the* 19th *Conference of the Baltic Oceanographers*, Sopot, Poland, 447-458.

2. **Meier, H.E.M.**, 1995: Data assimilation into a regional model of the western Baltic Sea. In: A. Staniforth (ed.), *Research activities in atmospheric and oceanic modelling*. WMO-ICSU-IOC Joint Committee for the World Climate Research Programme, 2 pp.

3. **Meier, H.E.M.**, and W. Krauss, 1995: Data assimilation into a numerical model of the Baltic Sea using the adjoint method, In: *Annales Geophysicae, Part II, Oceans, Atmosphere, Hydrology & Nonlinear Geophysics, Supplement II to Vol.13*. [European Geophysical Society 20th General Assembly, Hamburg, Germany, 3-7 April 1995].

4. **Meier, H.E.M.**, and W. Krauss, 1995: A regional high-resolution model of the western Baltic Sea in connection with data assimilation using the adjoint method. In: *Proceedings of the first study conference on BALTEX*, Ed.: A. Omstedt, Visby, Sweden, August 28 - September 1, 1995. *International BALTEX Secretariat publication series, GKSS, Geesthacht, Germany*, 3, 127-128.

5. **Meier, H.E.M.**, and W. Krauss, 1996: Mixed layer physics simulated by a regional model of the western Baltic Sea. In: Annales Geophysicae, Part II, Oceans, Atmosphere, Hydrology & Nonlinear Geophysics, Supplement II to Vol.14. [European Geophysical Society 21th General Assembly, The Hague, The Netherlands, 6-10 May 1996].

6. **Meier, H.E.M.**, 1997: Modelling the water exchange between North and Baltic Sea. In: *Annales Geophysicae, Part II, Oceans, Atmosphere, Hydrology & Nonlinear Geophysics, Supplement II to Vol.15*. [European Geophysical Society 22th General Assembly, Vienna, Austria, 21-25 April 1997].

7. **Meier, H.E.M.**, 1998: State-of-the-art of the Baltic/North Sea model development within SWECLIM. *SWECLIM Newsletter, SMHI, Norrköping, Sweden*, 1, 10-14.

8. **Meier, H.E.M.**, 1998: SWECLIM workshop on modelling sea ice coupled to a 3D Baltic Sea model held at SMHI, November 19 and 20, 1998. *SWECLIM Newsletter, SMHI, Norrköping, Sweden, 3, 31-34.*

9. **Meier, H.E.M.**, 1999: The Baltic Sea as a lake. *SWECLIM Newsletter, SMHI, Norrköping, Sweden*, 6, 27-31.

10. **Meier, H.E.M.**, 2000: Choices for parameterization of turbulence in the Baltic Sea. In: *Proceedings of the BALTEX workshop on "Parameterization of surface fluxes, atmospheric planetary boundary layer and ocean mixed layer turbulence for BRIDGE - What can we learn from field experiments"*, Abisko, Lapland, Sweden, June 20-21 1999. *International BALTEX Secretariat publication series, GKSS, Geesthacht, Germany*, 17, 108-115.

11. **Meier, H.E.M.**, 2000: First results of scenario simulations using a coupled ice-ocean model for the Baltic Sea. *SWECLIM Newsletter, SMHI, Norrköping, Sweden*, 7+8, 34-45.

12. **Meier, H.E.M.**, 2000: Scenario simulations using a coupled ice-ocean Baltic Sea model. In: *Geophysical Research Abstracts Vol.2*. [European Geophysical Society 25th General Assembly, Nice, France, 25-29 April 2000]. (CD-ROM, ISSN:1029-7006)

13. **Meier, H.E.M.**, 2000: On the quality of ERA sea surface temperatures. *SWECLIM Newsletter, SMHI, Norrköping, Sweden*, 9, 15-19.

14. Döscher, R., and **H.E.M. Meier**, 2000: A first test of an EVP sea-ice model in the Baltic Sea. *SWECLIM Newsletter, SMHI, Norrköping, Sweden*, 7+8, 27-33.

15. Döscher, R., and **H.E.M. Meier**, 2000: Sensitivity of an EVP sea-ice model in the Baltic Sea. In: *Geophysical Research Abstracts Vol.2*. [European Geophysical Society 25th General Assembly, Nice, France, 25-29 April 2000]. (CD-ROM, ISSN:1029-7006)

16. Döös, K., B. Jönsson, J. Nycander, P. Lundberg, R. Döscher and **M. Meier**, 2001: Lagrangian trajectory study of the Baltic Sea circulation. In: *Abstract Publication of the Baltic Sea Science Congress 2001*, Stockholm Marine Research Centre, p. 105.

17. Döscher, R., U. Willén, C. Jones, A. Rutgersson, U. Hansson and **H.E.M. Meier**, 2001: The state of development of the coupled ocean-atmosphere model RCAO. *SWECLIM Newsletter, SMHI, Norrköping, Sweden*, 10, 9-15.

18. Döscher, R., U. Hansson, C. Jones, **H.E.M. Meier**, A. Rutgersson and U. Willén, 2001: The development of the coupled ocean-atmosphere model RCAO. In: *Proceedings of the third study conference on BALTEX*, Ed.: J. Meywerk. Mariehamn, ˚Aland, Finland, July 2 - 6, 2001. *International BALTEX Secretariat publication series, GKSS, Geesthacht, Germany*, 20, 45-46.

19. **Meier, H.E.M.**, 2001: On the parameterization of mixing in 3D Baltic Sea models. In: *Geophysical Research Abstracts Vol.3*. [European Geophysical Society 26th General Assembly, Nice, France, 25-30 March 2001]. (CD-ROM, ISSN:1029-7006)

20. **Meier, H.E.M.**, 2001: On the need for 3D Baltic Sea models in climate studies. In: B. Sjöberg, S. Nerheim, A. Stigebrandt, and J. Oberg (eds.), Long term oceanographic¨ modelling of the Baltic: A report from a scientific workshop arranged by the MARE research programme, Göteborg university, Earth Sciences Centre, *Report C37*, 63-70.

21. **Meier, H.E.M.**, 2001: The Rossby Centre regional ocean climate model. In: B. Sjöberg, S. Nerheim, A. Stigebrandt, and J. Oberg (eds.), Long term oceanographic modelling of the¨ Baltic: A report from a scientific workshop arranged by the MARE research programme, Göteborg university, Earth Sciences Centre, *Report C37*, 41-45.

22. **Meier, H.E.M.**, 2001: Simulated water and heat cycles of the Baltic Sea using a 3D coupled ice-ocean model. In: *Proceedings of the third study conference on BALTEX*, Ed.: J. Meywerk. Mariehamn, Åland, Finland, July 2 - 6, 2001. *International BALTEX Secretariat publication series, GKSS, Geesthacht, Germany*, 20, 161-162.

23. **Meier, H.E.M.** and R. Döscher, 2001: On the closure of simulated heat cycles in the Baltic Sea. In: *Geophysical Research Abstracts Vol.3*. [European Geophysical Society 27th General Assembly, Nice, France, 25-30 March 2001]. (CD-ROM, ISSN:1029-7006)

24. **Meier, H.E.M.**, R. Döscher, U. Hansson, C. Jones, A. Rutgersson and U. Willén, 2001: On the closure of simulated heat cycles in the Baltic Sea. *SWECLIM Newsletter, SMHI, Norrköping, Sweden*, 10, 27-31.

25. Döscher, R., and **H.E.M. Meier**, 2002: A first test of an EVP sea-ice model in the Baltic Sea. *Proceedings of the 3rd workshop of Baltic sea-ice climate change*, Stawiska, Poland, October 5-8, 1999, 23-34.

26. Döscher, R., and **H.E.M. Meier**, 2002: Baltic Sea ice in regional control and scenario runs based on Hadley Centre data. *SWECLIM Newsletter, SMHI, Norrköping, Sweden*, 12, 24-27.

27. Döscher, R., and **H.E.M. Meier**, 2002: A new tool for coupled simulations of the BALTEX area: RCAO. *BALTEX Newsletter, GKSS, Geesthacht, Germany*, 4, 1-3.

28. Döscher, R., U. Willén, C. Jones, A. Rutgersson, **H.E.M. Meier**, U. Hansson, and P. Graham, 2002: On the coupling of a 3D Baltic Sea model to a regional atmospheric model. In: H. Ritchie (ed.), *Research activities in atmospheric and oceanic modelling*. WMO-ICSUIOC Joint Committee for the World Climate Research Programme, WMO Commission for atmospheric sciences, CAS/JSC working group on numerical experimentation, Report No.32, WMO/TD-No.1105, 09-03 - 09-04.

29. **Meier, H.E.M.**, 2002: On the response of the Baltic Sea salinity to extreme freshwater supply. *SWECLIM Newsletter, SMHI, Norrköping, Sweden*, 13, 13-16.

30. **Meier, H.E.M.**, and R. Döscher, 2002: First regional downscaling results for Baltic Sea temperature and salinity based on Hadley Centre boundary data from HadAM3. *SWECLIM Newsletter, SMHI, Norrköping, Sweden*, 12, 21-24.

31. **Meier, H.E.M.**, and F. Kauker, 2002: Long-term simulations of the Baltic Sea using a 3D coupled ice-ocean model. *NSC Annual Progress Report, July 2000 - June 2001, National Supercomputer Centre, Linköping University, SE-58183 Linköping, Sweden*, 66-73.

32. **Meier, H.E.M.**, and F. Kauker, 2002: Modelling decadal variability of the Baltic Sea during 1902-1998. In: *Geophysical Research Abstracts Vol.4*. [European Geophysical Society 27th General Assembly, Nice, France, 21-25 April 2002]. (CD-ROM, ISSN:1029-7006)

33. **Meier, H.E.M.**, and F. Kauker, 2002: On the sensitivity of Baltic Sea salinity over decadal time scales. *SWECLIM Newsletter, SMHI, Norrköping, Sweden*, 12, 45-49 pp.

34. **Meier, H.E.M.**, and F. Kauker, 2002: Modeling Baltic Sea climate for the period 19021998. *BALTEX Newsletter, GKSS, Geesthacht, Germany*, 4, 3-6.

35. Rummukainen, M., R. Döscher, L.P. Graham, U. Hansson, C. Jones, **H.E.M. Meier**, J. Räisänen, P. Samuelsson, A. Ullerstig, and U. Willén, 2002: PRUDENCE-related regional climate modeling at the SMHI/Rossby Centre, Norrköping. In: PRUDENCE kick-off meeting Snekkersten December 3-5, 2001. *Danish Climate Centre Report No.01-8, Danish Meteorological Institute, Copenhagen, Denmark*, 40-41.

36. Rutgersson, A., R. Döscher, **H.E.M. Meier**, and A. Omstedt, 2002: Estimating the uncertainty in simulating sea surface properties using two Baltic Sea ocean-models. *SWECLIM Newsletter, SMHI, Norrköping, Sweden*, 12, 39-45.

37. Döscher, R., and **H.E.M. Meier**, 2003: Baltic Sea temperature, salinity and sea ice in 30-year timeslice Control and Climate-Scenario experiments. In: *Geophysical Research Abstracts Vol.5*. [European Geophysical Society - American Geophysical Union - European Union of Geosciences Joint Assembly, Nice, France, 6-11 April 2003]. (CD-ROM, ISSN:1029-7006)

38. **Meier, H.E.M.**, 2003: On the sensitivity of the Baltic Sea salinity to the freshwater supply. In: *Geophysical Research Abstracts Vol.5*. [European Geophysical Society - American Geophysical Union - European Union of Geosciences Joint Assembly, Nice, France, 6-11 April 2003]. (CD-ROM, ISSN:1029-7006)

39. **Meier, H.E.M.**, 2003: Nederbörd och vind förklarar Östersjöns salthalt. In: *SWECLIM Annual Report 2002*, *SMHI, Norrköping, Sweden*, 18-19.

40. **Meier, H.E.M.**, 2003: On the sensitivity of Baltic Sea ice variability to changing climate. In: *Proceedings of a workshop on small-scale sea-ice and ocean modeling (SIOM) in the Nearshore Beaufort and Chukchi Seas at the International Arctic Research Center*

(IARC), University of Alaska, Fairbanks, Alaska, August 7-9, 2002, Ed.: J. Wang, Coastal Marine Institute, University of Alaska, Fairbanks, Alaska, OCS Study MMS 2003-043.

41. **Meier, H.E.M.**, and R. Döscher, 2003: Modeling the climate, environment and processes of the Baltic Sea: Examples and ideas based on the regional model system at the Rossby Centre. In: Minutes of the 14th BALTEX Science Steering Group Meeting at Lund University, Lund, Sweden, November 18-20, 2002. *International BALTEX Secretariat publication series, GKSS, Geesthacht, Germany*, 25, 47-48.

42. **Meier, H.E.M.**, 2003: Modelling the changing climate of the Baltic Sea during the 20th and 21st century. In: *Abstract Publication of the Baltic Sea Science Congress 2003*, Helsinki, Finland, August 24-28, 2003, p.3.

43. **Meier, H.E.M.**, and F. Kauker, 2003: Modelling decadal variability of the Baltic Sea during 1902-1998. In: J. Rodhe and B. Sjöberg (eds.), *Processes of importance for the large-scale salinity distribution of a semi-enclosed sea such as the Baltic Sea.* A report from the SWECLIM-MARE workshop at Kristineberg, Sweden, 2002. Göteborg University, Earth Sciences Centre, *Report C50*, p.16.

44. **Meier, H.E.M.**, 2003: Modelling the vertical circulation of the Baltic Sea using a threedimensional ocean model. In: J. Rodhe and B. Sjöberg (eds.), *Processes of importance for the large-scale salinity distribution of a semi-enclosed sea such as the Baltic Sea.* A report from the SWECLIM-MARE workshop at Kristineberg, Sweden, 2002. Göteborg University, Earth Sciences Centre, *Report C50*, 22-23.

45. Ozsoy, E. and **H.E.M. Meier**, 2003: Summary comments of Session II "Which processes govern the horizontal salinity gradients?", In: J. Rodhe and B. Sjöberg (eds.), *Processes of importance for the large-scale salinity distribution of a semi-enclosed sea such as the Baltic Sea.* A report from the SWECLIM-MARE workshop at Kristineberg, Sweden, 2002. Göteborg University, Earth Sciences Centre, *Report C50*, 9-10.

46. Döscher, R., and **H.E.M. Meier**, 2004: Simulated sea surface temperature and sea ice in different climates of the Baltic Sea. *BALTEX Newsletter, GKSS, Geesthacht, Germany*, 6, 18-22.

47. **Meier, H.E.M.** and F. Kauker, 2004: Response of a two-layer estuary to freshwater inflow and wind: a case study of the Baltic Sea. In: J. Côté (ed.), *Research activities in atmospheric and oceanic modelling*. WMO-ICSU-IOC Joint Committee for the World Climate Research Programme, WMO Commission for atmospheric sciences, CAS/JSC working group on numerical experimentation, sec.8, 13-14.

48. Döscher, R. and **H.E.M. Meier**, 2004: Baltic Sea climate scenarios for sea surface temperature and ice. In: J. Côté (ed.), *Research activities in atmospheric and oceanic modelling*. WMO-ICSU-IOC Joint Committee for the World Climate Research Programme, WMO Commission for atmospheric sciences, CAS/JSC working group on numerical experimentation, sec.7, 5-6.

49. Wyser, K., Döscher, R., **Meier, H.E.M.** and C. Jones, 2004: Development of a coupled regional climate model for the Arctic. In: J. Côté (ed.), *Research activities in atmospheric and oceanic modelling*. WMO-ICSU-IOC Joint Committee for the World Climate Research Programme, WMO Commission for atmospheric sciences, CAS/JSC working group on numerical experimentation, sec.9, 9-10.

50. **Meier, H.E.M.**, and F. Kauker, 2004: What causes stagnation of the Baltic Sea deepwater? In: *Proceedings of the fourth study conference on BALTEX*, Ed.: H.-J. Isemer,

Gudhjem, Bornholm, Denmark, May 24-28, 2004. *International BALTEX Secretariat publication series No.29, GKSS, Geesthacht, Germany*, 134-135.

51. **Meier, H.E.M.**, B. Broman, and E. Kjellström, 2004: Modelling sea level variability in different climates of the Baltic Sea. In: *Proceedings of the fourth study conference on BALTEX*, Ed.: H.-J. Isemer, Gudhjem, Bornholm, Denmark, May 24-28, 2004. *International BALTEX Secretariat publication series No.29, GKSS, Geesthacht, Germany*, 170-171.

52. R. Döscher and **H.E.M. Meier**, 2004: Simulated sea surface temperature and sea ice in different climates of the Baltic. In: *Proceedings of the fourth study conference on BALTEX*, Ed.: H.-J. Isemer, Gudhjem, Bornholm, Denmark, May 24-28, 2004. *International BALTEX Secretariat publication series No.29, GKSS, Geesthacht, Germany*, 162-163.

53. Persson, G., Graham, L.P., Andréasson, J., and **H.E.M. Meier**, 2004: Impact of climate change effects on sea-level rise in combination with an altered river flow in the Lake Mälar Region. In: *Proceedings of the fourth study conference on BALTEX*, Ed.: H.-J. Isemer, Gudhjem, Bornholm, Denmark, May 24-28, 2004. *International BALTEX Secretariat publication series No.29, GKSS, Geesthacht, Germany*, 172-173.

54. Wyser, K., Döscher, R., **Meier, H.E.M.** and C. Jones, 2004: Development of a coupled regional climate model for the Arctic. *NSC Annual Progress Report, 2003, National Supercomputer Centre, Linköping University, SE-58183 Linköping, Sweden*, 163-165.

55. **Meier, H.E.M.**, 2004: Quantification of residence times in the Baltic Sea - a challenge for 3D numerical modelling. *NSC Annual Progress Report, 2003, National Supercomputer Centre, Linköping University, SE-58183 Linköping, Sweden*, 113-118.

56. **Meier, H.E.M.**, 2005: Regional ocean modeling - climate variability and impact studies of the Baltic Sea. In: Extended Abstracts of a WMO/WCRP-sponsored regional-scale climate modelling workshop - High-resolution climate modelling: assessment, added value and applications. Lund, Sweden, 29 March - 2 April 2004. Ed.: L. Bärring and R. Laprise. Lund Electronic Reports in Physical Geography No.5, http://www.natgeo.lu.se/ Elibrary/LeRPG/LeRPGhome.htm, pp. 40-41.

57. **Meier, H.E.M.**, 2005: Modelling the age of Baltic Sea water masses: inter-annual variability, steady-state sensitivity experiments, and scenarios. In: *Abstract Publication of the 5th Baltic Sea Science Congress 2005*, Sopot, Poland, June 20-23, 2005, 22-23.

58. Döscher, R. and **H.E.M. Meier**, 2005: Simulated Sea Surface Temperature and Sea Ice in different Climates of the Baltic. In: *Abstract Publication of the 5th Baltic Sea Science Congress 2005*, Sopot, Poland, June 20-23, 2005, 220-221.

59. Broman, B. and **H.E.M. Meier**, 2005: Modeling waves in past and future climates of the Baltic Sea. In: *Abstract Publication of the 5th Baltic Sea Science Congress 2005*, Sopot, Poland, June 20-23, 2005, 72-73.

60. **Meier, H.E.M.**, R. Döscher, B. Broman, and J. Piechura, 2005: The major Baltic inflow in January 2003 and preconditioning by smaller inflows in summer/autumn 2002: a model study. In: *Abstract Publication of the Baltic Sea Science Congress 2005*, Sopot, Poland, June 20-23, 2005, 116-117.

61. Dethloff, K., A. Rinke, S. Saha, E. Sokolova, W. Dorn, D. Handorf, J.E. Haugen, M.Ø.Køltzow, L.P. Roed, J.H. Christensen, M. Stendel, P. Kuhry, S. Holzkämper, P. Wassmann, M. Reigstad, B. Rockel, A. Benkel, R. Döscher, K. Wyser, and **M. Meier**,

2005: Feedbacks between the Arctic and the global climate system. In: *Geophysical Research Abstracts Vol.7, 04174*, [European Union of Geosciences General Assembly, Vienna, Austria, 24-29 April 2005]. (CD-ROM, ISSN:1029-7006)

62. **Meier, H.E.M.**, 2005: New scenario simulations of the Baltic Sea. *BALTEX Newsletter, GKSS, Geesthacht, Germany*, No.8, 5-7.

63. **Meier, H.E.M.**, R. Döscher, and K. Wyser, 2006: Modelling the changing climate of the Baltic Sea. *SNIC Annual Progress Report, 2003-2005, Swedish National Infrastructure for Computing, Campus Norrköping, Linköping University, SE-601 74 Norrköping, Sweden*, 103-105.

64. Döscher, R., **H.E.M. Meier**, and K. Wyser, 2006: Sensitivities in the Rossby Centre Arctic models. In: Rinke, A. and K. Dethloff (eds.), Global Implications of Arctic Climate Processes and Feedbacks, Report of the Arctic Climate Workshop, Alfred Wegener Institute for Polar and Marine Research, Potsdam (Germany), 5-7 September 2005, Reports on Polar and Marine Research No.520, ISSN 1618-3193, 36-39.

65. Wyser, K., Jones, C., Döscher, R., and **H.E.M. Meier**, 2006: Comparison of modelled and observed clouds and radiation in the Arctic. In: Rinke, A. and K. Dethloff (eds.), Global Implications of Arctic Climate Processes and Feedbacks, Report of the Arctic Climate Workshop, Alfred Wegener Institute for Polar and Marine Research, Potsdam (Germany), 5-7 September 2005, Reports on Polar and Marine Research No.520, ISSN 1618-3193, 139-143.

66. Kauker, F. and **H.E.M. Meier**, 2006: Reconstructing atmospheric surface data of the 20th century to force of a coupled sea ice- ocean model of the Baltic Sea. In: *Geophysical Research Abstracts Vol.8*, [European Union of Geosciences General Assembly, Vienna, Austria, 2-7 April 2006]. (CD-ROM, ISSN:1029-7006)

67. Döscher, R., **H.E.M. Meier**, and K. Wyser, 2006: Sensitivities in the Rossby Centre Arctic models. In: *Geophysical Research Abstracts Vol.8*, [European Union of Geosciences General Assembly, Vienna, Austria, 2-7 April 2006]. (CD-ROM, ISSN:1029-7006)

68. Döscher, R., K. Wyser, R. Redler, and **H.E.M. Meier**, 2006: RCAO, the Rossby Centre Atmosphere-Ocean model. In: *Geophysical Research Abstracts Vol.8*, [European Union of Geosciences General Assembly, Vienna, Austria, 2-7 April 2006]. (CD-ROM, ISSN:10297006)

69. Eilola, K., and **Meier, H.E.M.**, 2006: Implementation of a high-resolution 3D ecosystem model for regional climate studies in the Baltic Sea. *BALTEX Newsletter, GKSS, Geesthacht, Germany*, No.9, 10-11.

70. Wyser, K., R. Döscher, and **H.E.M. Meier**, 2007: RCAO - a coupled regional climate model for the Arctic. [European Union of Geosciences General Assembly, Vienna, Austria, 15-20 April 2007]. (CD-ROM, ISSN:1029-7006)

71. **Meier, H.E.M.**, 2007: Modeling the pathways and ages of inflowing salt- and freshwater in the Baltic Sea. In: *Proceedings of the fifth study conference on BALTEX*, Ed.: H.-J. Isemer, Kuressaare, Saaremaa, Estonia, 4-8 June 2007, *International BALTEX Secretariat publication series No.38, GKSS, Geesthacht, Germany*, 23–24.

72. Eilola, K. and **H.E.M. Meier**, 2007: Impact of climate change on the Baltic Sea ecosystem. In: *Proceedings of the fifth study conference on BALTEX*, Ed.: H.-J. Isemer, Kuressaare, Saaremaa, Estonia, 4-8 June 2007, *International BALTEX Secretariat publication series No.38, GKSS, Geesthacht, Germany*, 67–68.

73. **H.E.M. Meier**, 2008: Symposium "Eutrophication in future climate". *BALTEX Newsletter, GKSS, Geesthacht, Germany*, 12, p 12.

74. **H.E.M. Meier**, 2008: ECOSUPPORT - An advanced modeling tool for scenarios of the Baltic Sea ECOsystem to SUPPORT decision making. *BALTEX Newsletter, GKSS, Geesthacht, Germany*, 12, 7-10.

75. Kotilainen, A., Arppe, L., Jansen, E., Karhu, J., Kotilainen, M., Kuijpers, A., **Meier, M.,** Moros, M. Neumann, T., Ryabchuk, D., Snowball, I., Spiridonov, M., Witkowski, A., 2009: INFLOW providing information on forcing mechanisms of environmental changes of the Baltic Sea during the past 6000 years and future scenarios. In: Kubischta, F., Kultti, S., Salonen, V.-P. (Eds.) 6th National Colloquium 4.-6.3.2009, Helsinki : Program and Abstracts. Publications of the Department of Geology. Series A 3. Helsinki: University of Helsinki, 30.

76. **H.E.M. Meier**, 2009: Ostersjän i förändrat klimat. Samhällsbyggaren, 2, 51-53.¨

77. **H.E.M. Meier**, and B.G. Gustafsson, 2009: Vad styr saltvatteninbrotten i Ostersjön?¨ Havet 2009 (www.havet.nu), Swedish Environmental Protection Agency, 19-22.

78. **H.E.M. Meier**, 2009: ECOSUPPORT - An advanced modeling tool for scenarios of the Baltic Sea ECOsystem to SUPPORT decision making. *BONUS Newsletter*, November 2009 (www.bonusportal.org).

79. **Meier, H.E.M.**, 2010: Impact of changing climate on the Baltic Sea ecosystem, *NSC News, 2010:1*, National Supercomputer Centre, Linköping University, SE-58183 Linköping, Sweden, 3-5.

80. **H.E.M. Meier** and ECOSUPPORT co-workers, 2010: Transient scenario simulations for the Baltic Sea for 1961-2099. In: *Proceedings of the sixth study conference on BALTEX*, Ed.: M. Reckermann, Miedzyzdroje, Island of Wolin, Poland, 14 to 18 June 2010, *International BALTEX Secretariat publication series No.46 GKSS, Geesthacht, Germany*, 35–36

81. Eilola, K., B. G. Gustafsson, R. Hordoir, A. Höglund, I. Kuznetsov, **H.E.M. Meier**, T. Neumann and O. P. Savchuk, 2010: Quality assessment of state-of-the-art coupled physicalbiogeochemical models for the Baltic Sea. In: *Proceedings of the fifth study conference on BALTEX*, Ed.: M. Reckermann, Miedzyzdroje, Island of Wolin, Poland, 14 to 18 June 2010, *International BALTEX Secretariat publication series No.46 GKSS, Geesthacht, Germany*, 95–96.

82. **Meier, H. E. M.**, H. C. Andersson, C. Dieterich, K. Eilola, B. G. Gustafsson, A. Höglund, R. Hordoir, I. Kuznetsov, T. Neumann, O. P. Savchuk and S. Schimanke, 2012: Projected Baltic Sea ecosystem changes in future climates. ICES CM Documents, 2012, ICES CM 2011/R:18.

83. **H.E.M. Meier**, H. Andersson and M. Reckermann, 2013: ECOSUPPORT: Decision Support for the Baltic Sea Environmental Management in the light of climate change. *BALTEX Newsletter, HZG, Geesthacht, Germany*, 15, 5-6. (http://www.baltex-research.eu/ publications/Newsletter/BALTEX Newsletter 15 print.pdf)

84. **H.E.M. Meier** and ECOSUPPORT co-workers, 2013: Advanced modeling tool for scenarios of the Baltic Sea ECOsystem to SUPPORT decision making (ECOSUPPORT, 2009-2011) In: *Proceedings of the seventh study conference on BALTEX*, Ed.: M. Reckermann and S. Köppen, Borgholm, Oland, Sweden, 10-14 June 2013, *International BALTEX Secretariat publication series No.53, GKSS, Geesthacht, Germany*, 175–176.

85. **H.E.M. Meier**, 2013: A new science and outreach programme for the Baltic Sea region. In: *Proceedings of the seventh study conference on BALTEX*, Ed.: M. Reckermann and S. Köppen, Borgholm, Oland, Sweden, 10-14 June 2013, I*nternational BALTEX Secretariat publication series No.53, GKSS, Geesthacht, Germany*, 6–7.

86. **H. E. M. Meier**, A. Rutgersson, M. Reckermann, J. Aigars, F. Berger, I. Dailidiene, C. Donnelli, J. Haapala, S. Keevalik, K. Kulinski, A. Lehmann, K. Myrberg, C. Nilsson, A. Omstedt, I. Partasenok, P. Post, G. Rehder, B. Smith, M. Stendel, H. von Storch, S. Zhuravlev and E. Zorita, 2013: Baltic Earth - Earth System Science for the Baltic Sea region. *Baltic Earth Newsletter, HZG, Geesthacht, Germany*, 1, 1-3. http://www.baltexresearch.eu/balticearth/Newsletter1 BalticEarth.pdf

87. Fransner, F. and **H.E.M. Meier**, 2014: Ostersjön i en varmare framtid (In Swedish: The¨ Baltic Sea in a warmer future), Havsutsikt No.2

88. **H.E.M. Meier**, 2014: New model to identify future inflows to the Baltic Sea. In: *BEAM Research Leaflet*, Ed.: N. strand Capetillo, *Baltic Ecosystem Adaptive Management (BEAM), Research for sustainable management of the Baltic Sea*, 20–21. http://www.su.se/polopoly fs/

89. **H. E. M. Meier**, M. Edman, and members of the Baltic Earth working group on scenario simulations for the Baltic Sea 1960-2100: Estimating uncertainties in projections for the Baltic Sea region based upon an ensemble of regional climate system models. In: *Conference proceedings of the first Baltic Earth conference on "Multiple drivers of Earth System changes in the Baltic Sea region*, Ed.: M. Reckermann and S. Köppen, Nida, Curonian Spit, Lithuania, 13-17 June 2016, International Baltic Earth Secretariat Publication No.9, Helmholtz-Zentrum Geesthacht, Geesthacht, Germany, 179.

90. Ikauniece, A., **H. E. M. Meier**, and L. Kalniņa, 2017: Introduction for the Special Issue (SI) "Understanding the Baltic Sea". Estuarine, Coastal and Shelf Science Volume 195, 1-3.

91. **Meier, H. E. M.**, and S. Saraiva, 2020: Projected Oceanographical Changes in the Baltic Sea until 2100. Oxford Research Encyclopedia of Climate Science, online publication date: 28 Feb 2020. DOI: 10.1093/acrefore/9780190228620.013.699

92. Placke, M. and **H. E. M. Meier,** 2020**.** Realizing coordinated model simulations from international contributors from all over the Baltic Sea region. Baltic Earth Newsletter, 6

93. Reckermann, M. and **H.E.M. Meier**, 2022: The Baltic Earth Assessment Reports: From BACC to BEAR. GEWEX Newsletter. October 2022.

94. Jędruch A, Aigars J, Ehlers SM, Kuliński K, **Meier HEM** and Tuomi L (2026) Editorial: New challenges for Baltic Sea earth system research. Front. Earth Sci. 14:1843953. doi: 10.3389/feart.2026.1843953

95.

Other publications

1. Haapala, J., W. Krauss, M. Leppäranta, A. Lehmann, P. Ljungemyr, **M. Meier**, and A. Omstedt, 1997: Baltic Sea modelling must include ice! *BASYS Newsletter*, 3rd issue (May 1997), http://www.io-warnemuende.de/Projects/ Basys/newslett/news3.htm
2. Bengtsson, L., R. Döscher, L. Funkquist, B. Håkansson, **H.E.M. Meier**, A. Omstedt, J. Sahlberg and B. Sjöberg, 2001: A strategy for ocean modelling at SMHI. *Internal Report, SMHI, Norrköping, Sweden*, 48 pp + 8 pp Apendix.

3. **Meier, H. E. M.**, and K. Kulinski, 2024: Scientific cooperation under changing geopolitics. Baltic Rim Economies – 4/2024, Germany. https://www.centrumbalticum.org/en/publications/baltic_rim_economies/baltic_rim_economies_4_2024_-_germany/markus_meier_karol_kulinski_scientific_cooperation_under_changing_geopolitics

Plenary lectures at international meetings and other important presentations since 1998

Lectures 1998

- SWECLIM workshop on atmosphere and ocean circulation climate modeling, Norrköping, Sweden, February 25, 1998, Author(s): **H.E.M. Meier**, Title: First steps towards a Baltic/North Sea model for regional climate studies.
- SWECLIM workshop on modeling sea ice coupled to a 3D Baltic Sea model, Norrköping, Sweden, November 19-20, 1998, Author(s): **H.E.M. Meier**, Title: Introduction into the workshop idea and brief overview of the ocean modeling activities at the Rossby Centre.

Lectures 1999

- CARTUM (Comparative Analysis and Rationalization of Second-Moment Turbulence Models) Kick-Off Workshop I, Hamburg, Germany, June 23-25, 1999, Author(s): **H.E.M. Meier**, Title: Choices for parameterization of turbulence in the Baltic Sea.
- BALTEX workshop on "Parameterization of surface fluxes, atmospheric planetary boundary layer and ocean mixed layer turbulence for BRIDGE - What can we learn from field experiments", Abisko, Lapland, Sweden, June 20-21, 1999, Author(s): **H.E.M. Meier**, Title: Choices for parameterization of turbulence in the Baltic Sea.
- Third workshop of Baltic sea-ice climate change, Stawiska, Poland, October 5-8, 1999, Author(s): **H.E.M. Meier**, Title: Multi-year simulations using a coupled ice-ocean model for the Baltic Sea.
- SWECLIM workshop on coupling of ocean, ice, and atmosphere, Norrköping, Sweden, October 20-22, 1999, Author(s): **H.E.M. Meier**, Title: First results of multi-year simulations using the Rossby Centre Ocean model.

Lectures 2000

- European Geophysical Society 25th General Assembly, Nice, France, April 25-29, 2000, Author(s): **H.E.M. Meier**, Title: Scenario simulations using a coupled ice-ocean Baltic Sea model.
- Second CARTUM Workshop, Marseilles, France, March 1-2, 2000, Author(s): **H.E.M. Meier**, Title: Modeling turbulence under sea ice.

Lectures 2001

- Swedish Ministry of the Environment - Informal workshop on Climate Change, Norrköping, Sweden, February 4-7, 2001, Author(s): **H.E.M. Meier**, Title: Impact on Baltic Sea.

- European Geophysical Society 26th General Assembly, Nice, France, April 21-25, 2001, Author(s): **H.E.M. Meier**, Title: On the parameterization of mixing in 3D Baltic Sea models.

- European Geophysical Society 26th General Assembly, Nice, France, April 21-25, 2001, Author(s): **H.E.M. Meier** and R. D¨oscher, Title: On the closure of simulated heat cycles in the Baltic Sea.

- Third CARTUM Workshop, Budapest, Hungary, May 31 - June 1, 2001, Author(s): **H.E.M. Meier**, Title: On the parameterization of mixing in 3D Baltic Sea models.

- Third study conference on BALTEX, Mariehamn, Åland, Finland, July 2 - 6, 2001, Author(s): **H.E.M. Meier**, Title: Simulated water and heat cycles of the Baltic Sea using a 3D coupled ice-ocean model.

- CARTUM Final Conference, Brussels, Belgium, December 3-5, 2001, Author(s): **H.E.M. Meier**, Title: On the mean vertical circulation of the Baltic Sea simulated with a 3D coupled ice-ocean-turbulence model.

Lectures 2002

- European Geophysical Society 27th General Assembly, Nice, France, April 21-25, 2002, Author(s): **H.E.M. Meier** and F. Kauker, Title: Modeling decadal variability of the Baltic Sea during 1902-1998 (Poster).

- Fourth Workshop on Baltic Sea Ice Climate, Norrköping, Sweden, May 22-24, 2002 Author(s): **H.E.M. Meier** and R. D¨oscher, Title: On the sensitivity of Baltic Sea ice variability to changing climate.

- International Workshop on Small-Scale Sea Ice-Ocean Modeling (SIOM) for Nearshore Beaufort and Chukchi Seas, Fairbanks, Alaska, August 7-9, 2002, Author(s): **H.E.M. Meier**, Title: On the sensitivity of Baltic Sea ice variability to changing climate (invited).

- Kick-off meeting of SEAREG (Sea Level Change Affecting the Spatial Development in the Baltic Sea Region), Helsinki, Finland, September 15-17, 2002, Author(s): **H.E.M. Meier**, Title: Introduction of the SWECLIM project.

- Baltic Sea Ice Workshop, Celebrating the 100th anniversary of the Tvärminne Zoological Station, September 18-21, 2002, Author(s): **H.E.M. Meier**, Title: Baltic sea ice in changing climate simulated with the Rossby Centre coupled ice-ocean model.

- SWECLIM-MARE workshop on Processes of importance for the large-scale salinity distribution of a semi-enclosed sea such as the Baltic, Kristineberg, Sweden, November 4-6, 2002, Author(s): **H.E.M. Meier** and F. Kauker, Title: Modeling decadal variability of the Baltic Sea during 1902-1998.

- SWECLIM-MARE workshop on Processes of importance for the large-scale salinity distribution of a semi-enclosed sea such as the Baltic, Kristineberg, Sweden, November 4-6, 2002, Author(s): **H.E.M. Meier**, Title: Modeling the vertical circulation of the Baltic Sea deepwater using a 3D ocean model.

- First Workshop on Climate Variations in Sweden During the Past 2000 Years, Stockholm University, Stockholm, November 7-8, 2002, Author(s): **H.E.M. Meier** and F. Kauker, Title: Modeling climate variability of the Baltic Sea.

- BALTEX Workshop on Achievements of and Perspectives for the BALTEX Programme, Lund University, Lund, Sweden, November 18, 2002, Author(s): **H.E.M. Meier** and R. D¨oscher, Title: Modeling the climate, environment and processes of the Baltic Sea: Examples and ideas based on the regional model system at the Rossby Centre (invited).

Lectures 2003

- Seminar at the International Arctic Research Center (IARC), Frontier Research System for Global Change, University of Alaska, Fairbanks, U.S.A., February 19, 2003, Author(s): **H.E.M. Meier**, Title: Regional climate modeling at the Rossby Centre (invited).

- Seminar on Measures against Coastal Erosion, Helsingborg, Sweden, March 27, 2003, Author(s): **H.E.M. Meier**, Title: Climate change - projections of Baltic sea level variability in 100 years (invited).

- EGS - AGU - EUG Joint Assembly, Nice, France, April 6-11, 2003, Author(s): **H.E.M. Meier**, Title: On the sensitivity of the Baltic Sea salinity to the freshwater supply.

- First Annual SEAREG Workshop (Sea Level Change Affecting the Spatial Development in the Baltic Sea Region), University of Greifswald, Greifswald, Germany, April 23-25, 2003, Author(s): **H.E.M. Meier**, Title: Modeling of climate change and possibilities of application.

- First Annual SEAREG Workshop (Sea Level Change Affecting the Spatial Development in the Baltic Sea Region), University of Greifswald, Greifswald, Germany, April 23-25, 2003, Author(s): **H.E.M. Meier** and B. Broman, Title: Climate and sea level change modeling: Further work.

- SWECLIM (Swedish Regional Climate Modelling Programme) Final Scientific Conference, Söderköping, Sweden, June 11-12, 2003, Author(s): **H.E.M. Meier** and R. Döscher, Title: Ocean Climate Research at the Rossby Centre during SWECLIM.

- 4th Baltic Sea Science Congress, Helsinki University, Helsinki, Finland, August 24-28, 2003, Author(s): **H.E.M. Meier**, Title: Modelling the changing climate of the Baltic Sea during the 20th and 21st century (plenary session).

- Second Workshop on Climate Variations in Sweden during the past 2000 years: Climate variability, environmental change, and cultural response, Uppsala, Sweden, October 20-21, 2003, Author(s): **H.E.M. Meier**, Title: The Baltic Sea as integrating climate indicator.

Lectures 2004

- WCRP-sponsored Regional-scale Climate Modelling Workshop on “High-resolution climate modeling: Assessment, added value and applications”, Lund, Sweden, March 29 April 2, 2004, Author(s): **H.E.M. Meier**, Title: Regional ocean modeling (invited), http://www.natgeo.lu.se/Lars.barring/RCMworkshop/RCMhome.htm

- Second Annual SEAREG Workshop (Sea Level Change Affecting the Spatial Development in the Baltic Sea Region), Stockholm, Sweden, April 22-24, 2004, Author(s): **H.E.M. Meier**, Title: Simulated sea level in past and future climate of the Baltic Sea.

  http://www.gsf.fi/projects/seareg/2ndworkshop.html

- Second Annual SEAREG Workshop (Sea Level Change Affecting the Spatial Development in the Baltic Sea Region), Stockholm, Sweden, April 22-24, 2004, Author(s): **H.E.M. Meier**, Title: Foreseen SMHI contribution to Knowledge Base and other DSF parts.

  http://www.gsf.fi/projects/seareg/2ndworkshop.html

- Fourth study conference on BALTEX, Gudhjem, Bornholm, Denmark, 24-28 May, 2004, Author(s): **H.E.M. Meier** and F. Kauker, Title: What causes stagnation of the Baltic Sea deepwater?
- Fourth study conference on BALTEX, Gudhjem, Bornholm, Denmark, 24-28 May, 2004, Author(s): **H.E.M. Meier**, B. Broman, and E. Kjellström, Title: Modelling sea level variability in different climates of the Baltic Sea (Poster).

- Workshop on "Sea waves and current modeling in marine ecology with emphasis given to data assimilation" organized by BALTDER (Centre of Excellence for Baltic Development, Education and Research), Marine Station on Hel, Institute of Oceanology, University of Gdansk, Poland, 22-24 August, 2004, Author(s): **H.E.M. Meier**, Title: Variational data assimilation using the adjoint method: an application for the Baltic Sea (invited).

- Presentation at the Institute of Oceanology, Polish Academy of Sciences, Sopot, Poland, 25 August, 2004, Author(s): **H.E.M. Meier**, Title: Modeling climate variability of the Baltic Sea - new results based upon the regional model system at the Rossby Centre (invited).

- Bjerknes Centenary 2004, Open Science Conference "Climate Change in High Latitudes", Bergen, Norway, September 1-3, 2004, Author(s): **H.E.M. Meier** and R. D¨oscher, Title: Sea-ice climate of the Baltic in the late 21st century - a dynamical downscaling approach using results of two global models and two forcing scenarios (Poster).

- Rossby Centre Climate Modelling Day, Norrköping, Sweden, October 6, 2004, Author(s): **H.E.M. Meier**, Title: What information do we get from the RCO model?

Lectures 2005

- Third Annual SEAREG Workshop (Sea Level Change Affecting the Spatial Development in the Baltic Sea Region), Tallin, Estonia, March 3-5, 2005, Author(s): **H.E.M. Meier**, B. Broman, H. Kallio, and E. Kjellström. Title: Projections of future surface winds and sea levels in the late 21st century and their application for impact studies of flood prone areas in the Baltic Sea Region. http://www.gsf.fi/projects/seareg/2ndworkshop.html

- 9th Workshop of the Arctic Ocean Model Intercomparison Project (AOMIP), McGill University, Montreal, Canada, June 15-16, 2005, Author(s): **H.E.M. Meier**, R. D¨oscher, K. Wyser, and K. Döös, Title: The Rossby Centre Ocean model applied to the Arctic Ocean using ERA-40.

- 5th Baltic Sea Science Congress ("The Baltic Sea - a changing ecosystem"), Sopot, Poland, June 20-23, 2005, Author(s): **H.E.M. Meier**, Title: Modelling the age of Baltic Sea water masses: inter-annual variability, steady-state sensitivity experiments, and scenarios (plenary session).

- Workshop on "Ventilation of the Baltic Sea deepwater: observations and model results" at the 5th Baltic Sea Science Congress ("The Baltic Sea - a changing ecosystem"), Sopot, Poland, June 20-23, 2005, Author(s): **H.E.M. Meier**, R. D¨oscher,

B. Broman, and J. Piechura, Title: The major Baltic inflow in January 2003 and preconditioning by smaller inflows in summer/autumn 2002: a model study.

- 5th Baltic Sea Science Congress ("The Baltic Sea - a changing ecosystem"), Sopot, Poland, June 20-23, 2005, Author(s): R. D¨oscher, and **H.E.M. Meier**, Title: Simulated Sea Surface Temperature and Sea Ice in different Climates of the Baltic (Poster).
- Rossby Centre Day 2005, Norrköping, Sweden, October 6, 2005, Author(s): **H.E.M. Meier**, Title: Stakeholder support. Experiences and tools from the SEAREG project.
- Presentation at the Baltic Sea Research Institute Warnemünde, Germany, 25 October, 2005, Author(s): **H.E.M. Meier**, Title: Klimaveränderungen der Ostsee im 20. und 21. Jahrhundert - neue Ergebnisse basierend auf dem regionalen Modellsystem des Rossby Centers (invited).
- Fourth Workshop on Climate Variations in Sweden during the past 2000 years: Observed and simulated climate variability. Norrköping, Sweden, November 3-4, 2005, Author(s): **H.E.M. Meier**, Title: Observed and simulated salinity variations in the Baltic Sea.
- Presentation at the Institute of Oceanology, University of Gdansk, Gdynia, Poland, 7 November, 2005, Author(s): **H.E.M. Meier**, Title: Past and future climate change of the Baltic Sea (invited).
- Presentation at the Institute of Oceanology, University of Gdansk, Gdynia, Poland, 9 November, 2005, Author(s): **H.E.M. Meier**, Title: Modelling the vertical circulation of the Baltic Sea deep water (invited).

Lectures 2006

- UK/Sweden science seminar "Predicting climate change in the Arctic", Stockholm, Sweden, 8-9 March, 2006, Author(s): **H.E.M. Meier**, Title: The Rossby Centre Ocean model applied to the Baltic Sea and Arctic Ocean (invited).
- International "Workshop on Polar and Global Climate Modeling: Connection and Interplay", International Arctic Research Center, University of Alaska Fairbanks, Alaska, USA, 14-16 June, 2006, Author(s): **H.E.M. Meier**, Title: Sensitivity of Arctic sea ice in coupled and uncoupled regional climate model simulations (invited).

Lectures 2007

- 6th Baltic Sea Science Congress, Rostock, Germany, 19-23 March, 2007, Author(s): **H.E.M. Meier**, Title: On the Baltic conveyor belt.
- Baltic Sea 2020 Workshop: Understanding hypoxia in the Baltic Sea, Lund University, Lund, Sweden, 17-19 April, 2007, Author(s): **H.E.M. Meier**, Title: Modelling hypoxia in the Baltic Sea during the 20th and 21st centuries (invited short presentation).
- HELCOM-EuroGOOS workshop: Operational models in the service of the Baltic Sea Action Plan, Helsinki, Finland, 22 May, 2007, Author(s): **H.E.M. Meier**, Title: Longterm scenario simulations of the Baltic Sea ecosystem to support decision making.
- Workshop on added values of regional climate models and detection and attribution studies in the Baltic Basin, Göteborg University, Göteborg, Sweden, 24-25 May, 2007, Author(s): **H.E.M. Meier**, Title: How RCO can be used in Baltic Sea attribution studies.
- Fifth study conference on BALTEX, Kuressaare, Saaremaa, Estonia, 4-8 June 2007, Author(s): **H.E.M. Meier**, Title: Modeling the pathways and ages of inflowing salt- and freshwater in the Baltic Sea.

- Fifth study conference on BALTEX, Kuressaare, Saaremaa, Estonia, 4-8 June 2007, Author(s): **H.E.M. Meier** and K. Eilola. Title: Impact of climate change on the Baltic Sea ecosystem.

- AOMIP/(C)ARCMIP/SEARCH for DAMOCLES workshop, University Pierre et Marie Curie, Paris, France, 29-31 October 2007, Author(s): **H.E.M. Meier** and Per Pemberton. Titel: On the parameterization of mixing in regional circulation models for the Arctic Ocean.

- Presentation at Uppsala University, Sweden, 5 October, 2007, Author(s): **H.E.M. Meier**, Title: Baltic Sea modeling activities at the Swedish Meteorological and Hydrological Institute 1997-2007 - a review (invited).

- Swedish Marine Science Conference 2007, Tjärno marine biological laboratory, Strömstad, Sweden, 7-9 November 2007, Author(s): **H.E.M. Meier**, Kari Eilola, and Elin Almroth, Title: Uncertainties of future projections of the Baltic ecosystem.

- Baltic Sea 2020 Workshop: Understanding hypoxia in the Baltic Sea, Lund University, Lund, Sweden, 27-29 November, 2007, Author(s): **H.E.M. Meier**, Kari Eilola, and Lars Axell, Title: Simulations of some engineering methods proposed to improve conditions in the Baltic proper using RCO-SCOBI (invited presentation).

Lectures 2008

- BALTEX workshop on the Utility of Regional Climate Models, Swedish Meteorological and Hydrological Institute, Norrköping, Sweden, 23 January, 2008, Author(s): **H.E.M. Meier**, Title: Scenarios of the Baltic Sea ecosystem calculated with a regional climate model.

- HELCOM EUTRO PRO 6-2008 meeting, Copenhagen, Denmark, 4-5 February, 2008, Author(s): Kari Eilola and **H.E.M. Meier**, Title: Modelling of Baltic Sea reference conditions for WFD implementation.

- ECOOP Annual Meeting, Hellenic Centre for Marine Research, Glyfada (Athens), Greece, 13-14 February, 2008, Author(s): **H.E.M. Meier**, Kari Eilola, and Elin Almroth, Title: Climate-related changes in marine ecosystems simulated with a three-dimensional coupled biogeochemical-physical model of the Baltic Sea (invited presentation).

- Presentation at the Centre for Marine and Atmospheric Sciences (ZMAW), Geophysical Colloquium, Hamburg, Germany, 17 April, 2008, Author(s): **H.E.M. Meier**, Title: Changing climate of the Baltic Sea during the 20th and 21st century - latest results based upon coupled physical-biogeochemical model simulations (invited presentation).

- US/EU-Baltic 2008 International Symposium: Ocean Observations, Ecosystem-Based Management and Forecasting, Tallinn, Estonia, 27-29 May, 2008, Author(s): **H.E.M. Meier**, Title: Impact of climate change on physical and biogeochemical variables of the Baltic Sea. (invited presentation).

- US/EU-Baltic 2008 International Symposium: Ocean Observations, Ecosystem-Based Management and Forecasting, Tallinn, Estonia, 27-29 May, 2008, Author(s): **H.E.M. Meier** and K. Eilola, Title: SMHI ecosystem hindcasting the last 30 years - a basis for reference conditions within the Marine Directive.

- Rossby Centre Day 2008: “Nordic-Arctic Climate Change : Towards an Earth System Approach” Norrköping, Sweden, October 13-14, 2008, Author(s): **H.E.M. Meier**, Title: Coupled Climate and Environmental Modeling for the Baltic Sea Region. (invited presentation)

- Marine Environmental Day 2008: “Can we save the Baltic Sea? - Eutrophication in future climate”, Norrköping, Sweden, October 21, 2008, Author(s): **H.E.M. Meier**, Title: Will the Baltic Sea Action Plan work in future climate?

- TELLUS-BALTEX Workshop on “Biogeochemical Land and Baltic Sea Interactions driven by Climate and Land Use”, University of Gothenburg, Sweden, 1-2 December 2008, Author: **H.E.M. Meier**, Title: Regional climate models and the coupling with marine biogeochemical models. (invited presentation)

- Application presentation at the Centre for Marine and Atmospheric Sciences (ZMAW), Hamburg, Germany, 22 December, 2008, Author(s): **H.E.M. Meier**, Title: Ursachen der dekadischen Variabilitt der vertikalen Zirkulation in der Ostsee. (invited presentation)

Lectures 2009

- 2nd Lund Regional-scale Climate Modelling Workshop: “21st Century Challenges in Regional-scale Climate Modelling”, Lund, Sweden, 4 - 8 May 2009, Author(s): **H.E.M. Meier**, for the ECOSUPPORT consortium Title: Future challenges for regional coupled climate and environmental modeling in the Baltic Sea Region.

- 2nd Lund Regional-scale Climate Modelling Workshop: “21st Century Challenges in Regional-scale Climate Modelling”, Lund, Sweden, 4 - 8 May 2009, Author(s): **H.E.M. Meier**, L. Bärring, O. Bøssing Christensen, E. Kjellström, P. Lorenz, B. Rockel, and E. Zorita. Title: Selected examples of the added value of regional climate models (Poster).

- Joint Assembly of IAMAS (International Association of Meteorology and Atmospheric Science), IAPSO (International Association for the Physical Sciences of the Oceans) and IACS (International Association of the Cryospheric Sciences), Montreal, Canada, July 2024, 2009, Author(s): **H.E.M. Meier**, Title: Regional coupled climate and environmental modeling for the Baltic Sea Region.

- 7th Baltic Sea Science Congress, Tallinn, Estonia, 17-21 August, 2009, Author(s): **H.E.M. Meier**, for the ECOSUPPORT consortium Title: ECOSUPPORT - Advanced modeling tool for scenarios of the Baltic Sea ecosystem to support decision making.

- 7th Baltic Sea Science Congress, Tallinn, Estonia, 17-21 August, 2009, Author(s): **H.E.M. Meier**, K. Eilola, and E. Almroth Title: Climate-related changes in marine ecosystems simulated with a three-dimensional coupled biogeochemical-physical model of the Baltic Sea

- International conference on “Linking Science and Management in the Baltic Sea Ecoregion”, Copenhagen, Denmark, 9-10 September, 2009, Author(s): **H.E.M. Meier** Title: New modeling tools for scenarios of the Baltic Sea ecosystem to support decision making

- International Workshop on “The marine ecosystem in changing climate - on the added value of coupled climate-environmental modeling for the Baltic Sea”, Norrköping, Sweden, 16 October, 2009, Author(s): **H.E.M. Meier**, Title: Impact of changing climate on biogeochemical cycles in the Baltic Sea - an introduction.

- 13th Workshop of the Arctic Ocean Model Intercomparison Project (AOMIP), Woods Hole Oceanographic Institute, Woods Hole, MA, USA, October 20-23, 2009, Author(s): **H.E.M. Meier**, Sebastian Mårtensson, and Per Pemberton, Title: Impact of sea ice dynamics on the Arctic climate variability - a model study.

Lectures 2010

- BONUS annual conference 2010, Vilnius, Lithuania, 19-21 January, 2010, Author(s): **H.E.M. Meier** and ECOSUPPORT co-workers, Title: First results of recently performed scenario simulations for the Baltic Sea for 1961-2099.

- International workshop on "Effects of climate change on the marine environment" organized by the Nordic Council of Ministers, Copenhagen, Denmark, 9-10 March, 2010. Author(s): **H.E.M. Meier** Title: Impact of changing hydrography on biogeochemical cycles in future climates of the Baltic Sea. (invited presentation)

- Deutsche Meteorologische Gesellschaft, Deutscher Wetterdienst, Seewetteramt Hamburg, Hamburg, 16 March, 2010. Author(s): **H.E.M. Meier**, Title: Klimaszenarien für das 21. Jahrhundert - neue Ergebnisse basierend auf einem regionalen gekoppelten Atmosphäre-Eis-Ozeanmodell für die Ostsee. (invited presentation)

- Presentation at Finland's environmental administration (SYKE), 24 May 2010, Helsinki, Finland, Author(s): **H.E.M. Meier**, Title: From daily algae forecasts towards scenario simulations of changing climate - an overview on environmental modelling activities at the Swedish Meteorological and Hydrological Institute. (invited presentation)

- Sixth study conference on BALTEX, Miedzyzdroje, Island of Wolin, Poland, 14 - 18 June 2010, Author(s): **H.E.M. Meier** and ECOSUPPORT collaborators. Title: Transient scenario simulations for the Baltic Sea for 1961-2099. (solicited)

- Sixth study conference on BALTEX, Miedzyzdroje, Island of Wolin, Poland, 14 - 18 June 2010, Author(s): K. Eilola, B.G. Gustafsson, R. Hordoir, A. Höglund, I. Kuznetsov, **H.E.M. Meier**, T. Neumann and O.P. Savchuk. Title: Quality assessment of state-of-the-art coupled physical-biogeochemical models for the Baltic Sea.

- EUTRO 2010, Nyborg, Denmark, 14 - 18 June 2010, Author(s): **H.E.M. Meier**, H. Andersson, K. Eilola, R. Hordoir, and A. Höglund, Title: New scenario simulations of the Baltic Sea ecosystem to support decision making.

- BalticStern workshop on scenarios, Stockholm Resilience Centre, Stockholm, Sweden, 6-7 October 2010, Author(s): **H.E.M. Meier**, Title: "Coupled climate-environmental modelling for the Baltic Sea Region" (invited presentation)

- BONUS+ program cluster workshop on "Uncertainties of scenario simulations", Norrköping, Sweden, 14 October 2010. Author(s): **H.E.M. Meier**, A. Höglund, R. D¨oscher, H. Andersson, U. Löptien and E. Kjellström, Title: "Quality assessment of atmospheric surface fields over the Baltic Sea of an ensemble of regional climate model simulations with respect to ocean dynamics"

Lectures 2011

- Presentation at the Swedish Ministry of Environment within a seminar on climate change impact studies, Stockholm, 29 March, 2011: Author(s): **H.E.M. Meier**, Title: Klimat och Ostersjöns havsmiljö (Climate and the Baltic Sea environment).¨

- Presentation at the Centre of Water and Environmental Studies, Linköping University, Sweden, 30 March, 2011, Author(s): **H.E.M. Meier**, Title: Coupled climate and marine environmental modelling (invited presentation).

- Kungliga Skogs- och Lantbruksakademiens (KSLAs) Vattenkommitté (The Royal Swedish Academy of Agriculture and Forestry's water committee), Seminarium om Baltic Sea Action Plan - De svåra frågorna om eutrofieringen. Author(s): **H.E.M. Meier**, Title: Behövs fler modeller av Ostersjöns eutrofiering? (Are several models of the Baltic Sea¨ eutrophication needed?) (invited presentation).

- EFARO (the European Fisheries and Aquaculture Research Organisation) General Assembly, Sopot, Poland, 24 May 2011, Author(s): **H.E.M. Meier**, Title: ECOSUPPORT management support for a changing Baltic Sea. (invited presentation)

- 8th Baltic Sea Science Congress, St. Petersburg, Russia, August 22-26, 2011, Author(s): **H.E.M. Meier**, H. Andersson, C. Dieterich, K. Eilola, B. Gustafsson, A. Höglund, R. Hordoir, I. Kuznetsov, T. Neumann, O. Savchuk and S. Schimanke, Title: Nutrient load reductions in future climate of the Baltic Sea - assessment of uncertainties.

- 8th Baltic Sea Science Congress, St. Petersburg, Russia, August 22-26, 2011, Author(s): **H.E.M. Meier**, Title: Assessment of Climate Change for the Baltic Sea - an update.

- 8th Baltic Sea Science Congress, St. Petersburg, Russia, August 22-26, 2011, Author(s): R. Hordoir and **H.E.M. Meier**, Title: Effect of climate change on the thermal stratification of the Baltic Sea: a sensitivity experiment.

- 8th Baltic Sea Science Congress, St. Petersburg, Russia, August 22-26, 2011, Author(s): R. Hordoir and **H.E.M. Meier**, Title: Freshwater fluxes in the Baltic Sea: A model study.

- ICES Annual Science Conference, Gdansk, Poland, 19 - 23 September 2011, Author(s): **H.E.M. Meier**, H. Andersson, C. Dieterich, K. Eilola, B. Gustafsson, A. Höglund, R. Hordoir, I. Kuznetsov, T. Neumann, O. Savchuk and S. Schimanke, Title: Projected Baltic Sea ecosystem changes in future climates.

- BALTEX Workshop on "Different concepts in biogeochemical modelling of the Baltic Sea", Baltic Sea Research Institute Warnemünde, Germany, 29 September 2011, Author(s): **H.E.M. Meier**, Title: Advantages and disadvantages of biogeochemical models used within ECOSUPPORT (invited).

- BONUS Forum at the 2nd Annual Forum for the EU Strategy for the Baltic Sea Region and the Baltic Development Forum, Gdansk, Poland, 24 October 2011, Author(s): **H.E.M. Meier**, Title: Advanced modeling tool for scenarios of the Baltic Sea ECOsystem to SUPPORT decision making (ECOSUPPORT).

- International ECOSUPPORT and RECOCA stakeholder conference on "An outlook to the future Baltic Sea: how can we reach the targets of the Baltic Sea Action Plan?", Stockholm University, Stockholm, Sweden, 7 December 2011, Author(s): **H.E.M. Meier**, Title: Introduction of ECOSUPPORT.

Lectures 2012

- European Climate Research Alliance (ECRA) pilot workshop: "Regional sea level change", Utrecht, The Netherlands, 13-14 March, 2012: Author(s): **H.E.M. Meier**, Title: Projections of future storm surges in the Baltic Sea.

- Second Joint International Symposium on "Effects of Climate Change on the World's Oceans" of ICES, PICES and IOS (convened as one of the official events related to

Expo2012), Yeosu, Korea, May 15-19, 2012: Author(s): **H.E.M. Meier**, Title: Hypoxia in future climates - a model ensemble study for the Baltic Sea (invited).

- Hypoxia workshop at Utrecht University, The Netherlands, 13 November, 2012: Author(s): **H.E.M. Meier**, Title: Ensemble modeling for assessing the status of the Baltic Sea under future climate scenarios and management options (invited).

Lectures 2013

- Application presentation at the Baltic Sea Research Institute Warnemünde, Germany, 11 January 2013, Author(s): **H.E.M. Meier**, Title: Estimating uncertainties in future projections of Baltic Sea hypoxia (invited).
- HELCOM Workshop on "Baltic Sea region climate change and its implications", 5-6 February 2013, Warnemünde, Germany: Author(s): **H.E.M. Meier**, Title: HELCOM Baltic Sea Action Plan in a warmer world (invited).
- ECOCHANGE seminar on "The cycling and fate of contaminants in the Baltic Sea in a Climate Change Perspective", Ume, Sweden, 29 April, 2013, Author(s): **H.E.M. Meier**, Title: Climate change scenarios for the Baltic Sea and its drainage area (invited).
- BEAM seminar on "Modeling climate variability of the Baltic Sea and relevant processes", Stockholm, Sweden, 22 May, 2013, Author(s): **H.E.M. Meier**, Title: (invited).
- Presentation at the DTU Aqua, National Institute of Aquatic Resources, Technical University of Denmark, Charlottenlund, Denmark, 4 June, 2013, Author(s): **H.E.M. Meier**, Title: Impact of changing climate on the marine ecosystem - a numerical modeling approach. (invited presentation)
- Seventh study conference on BALTEX, Borgholm, Island of Oland, Sweden, 10-14 June¨ 2013, Author(s): **H.E.M. Meier** and the ECOSUPPORT co-workers, Title: Advanced modeling tool for scenarios of the Baltic Sea ECOsystem to SUPPORT decision making (ECOSUPPORT, 2009-2011).
- Seventh study conference on BALTEX, Borgholm, Island of Oland, Sweden, 10-14 June¨ 2013, Author(s): **H.E.M. Meier** (chair of the new programme), Title: A new science and outreach programme for the Baltic Sea region.
- Joint Assembly of IAHS (International Association of Hydrological Sciences), IAPSO (International Association for the Physical Sciences of the Oceans) and IASPEI (International Association of Seismology and Physics of the Earth's Interior) on 'Knowledge for the future", Gothenburg, Sweden, 22-26 July, 2013, Author(s): **H.E.M. Meier** and the ECOSUPPORT co-workers, Title: Comparing reconstructed past variations and future projections of the Baltic Sea ecosystem - results from multi-model ensemble simulations.
- Gulf of Finland Year 2014 data/modelling fusion workshop, Finnish Meteorological Institute, Helsinki, Finland, 19 September 2013, Author(s): **H.E.M. Meier**, Title: Long-term changes in Baltic Sea ecosystems under climate and nutrient load changes. (invited presentation)
- ICES Annual Science Conference, Reykjavik, Iceland, 23 - 27 September 2013, Author(s): **H.E.M. Meier** and the ECOSUPPORT co-workers, Title: Comparing reconstructed past variations and future projections of the Baltic Sea ecosystem.

- Conference of the Swedish Institute for the Marine Environment on "Climate change and its impact on the sea - and what are we doing?" ("Klimatförändringar och dess påverkan på havet - och vad gör vi?"), Marstrand, Sweden, 16-17 October 2013, Author(s): **H.E.M. Meier**, Title: Hur kommer klimatet att p*åver*ka Ostersjöns framtid? (How will climate change impact the future Baltic Sea?)

- Colloquium, Mesoskalige Meteorologie und Klima Institut für Atmosphäre und Umwelt/ Geozentrum, Riedberg Goethe-Universität Frankfurt a.M., 24 October 2013, Author(s): **H.E.M. Meier**, Title: On the added value of regional climate system models. (invited presentation)

- Colloquium, Institute for Coastal Research, Helmholtz-Zentrum Geesthacht (HZG), Geesthacht, Germany, 7 November 2013, Author(s): **H.E.M. Meier**, Title: From daily forecasts to regional climate system modelling - an overview on ocean modelling activities at the Swedish Meteorological and Hydrological Institute. (invited presentation)

- Baltic Earth workshop on "Challenges for biogeochemistry research in the Baltic Sea Region", Institute of Oceanology, Polish Academy of Sciences (IOPAN), Sopot, Poland, 13 November 2013, Author(s): **H.E.M. Meier**, Title: Challenges for biogeochemical modeling on centennial time scales. (invited presentation)

- Bolin Days, Bolin Centre for Climate Research, Stockholm University, Stockholm, Sweden, 21 November 2013, Author(s): **H.E.M. Meier**, Title: Modelling the impact of changing climate on biogeochemical cycles in the Baltic Sea and Laptev Sea/Arctic Ocean.

Lectures 2014

- International Conference organized by the European Cooperation in Science and Technology (COST) on "Predictive Power of Marine Science in a Changing Climate, Sopot, Poland, 7-8 April 2014, Author(s): **H. E. M. Meier**, Title: Uncertainties in state-of-theart climate change projections of the Baltic Sea ecosystem (invited keynote speaker of the conference)

- 3rd Lund Regional-scale Climate Modelling Workshop: "21st Century Challenges in Regional Climate Modelling", Lund, Sweden, 16-19 June 2014, Author(s): **H. E. M. Meier** and members of the Baltic Earth Working Group on Regional Climate System Modeling, Title: Challenges in regional climate system modeling for the Baltic Sea and North Sea regions. (invited keynote speaker of Theme 1 "Regional Climate and Earth System Models")

- Sommerakademi (Expedition Akademi) 2014: Globalisierung und Meer - Die Ostsee zwischen Rekordverschmutzung, Wirtschaftswachstum und Interessenkonflikten, Mariehamn, Åland/Finland, 18-23 August 2014, Author(s): **H. E. M. Meier**, Title: Die Zukunft der Todeszonen in den tiefen Becken der Ostsee und mögliche Gegenmaßnahmen. (In German,

- The future of hypoxia in the deep basins of the Baltic Sea and possible countermeasures) (invited keynote speaker)

- The 12th Colloquium on Baltic Sea Marine Geology, Warnemünde, Germany, 8-12 September 2014, Author(s): **H. E. M. Meier**, Title: Reconstruction of Baltic Sea climate variations during the last millennium using numerical modeling (invited keynote speaker)

- Application presentation at the Helmholtz Zentrum Geesthacht, Germany, 19 November 2014, Author(s): **H.E.M. Meier**, Title: Challenges in climate system modelling for the Baltic Sea, North Sea and Arctic Ocean regions (invited).

Lectures 2015

- Gordon Research Conference (GRC) on Coastal Ocean Modeling, Biddeford, Maine, U.S., 7-12 June 2015, Author(s): **H. E. M. Meier**, Title: Challenges in regional climate system modeling. (invited presentation)

- Scientific Symposium on Harmful Algal Blooms and Climate Change, Göteborg, Sweden, 19-22 May 2015, Author(s): **H. E. M. Meier**, Title: Impact of changing physics on marine ecosystems in future coastal seas. (invited presentation)

- 10th Baltic Sea Science Congress, Riga, Latvia, June 15-19, 2015, Author(s): **H. E. M. Meier**, Title: Challenges in climate system modelling for the Baltic Sea, North Sea, Mediterranean Sea and Arctic Ocean regions.

- Euromarine Foresight Symposium: "Future Coast - Europe, Berlin, 5-7 October, 2015, Author(s): **H. E. M. Meier**, Title: Integrated system modelling for coastal seas. (invited presentation)

- Joint HyMeX-Baltic Earth Workshop on "Joint regional climate system modelling for the European sea regions", Rome, 5-6 November, 2015, Author(s): **H. E. M. Meier**, M. Reckermann, A. Rutgersson, G. Sannino, and S. Somot, Title: Regional climate system modelling for European sea regions aims of the workshop.

- Baltic Earth/Gulf of Finland PhD Seminar 2015: " Exchange processes between the Gulf of Finland and other Baltic Sea basins, Tallinn, 19 November, 2015, Author(s): **H. E. M. Meier**, K. Eilola, K. Myrberg, and G. Väli, Title: Physical-Biogeochemical modelling of the Baltic Sea- Gulf of Finland. (invited presentation)

- Szczecin Climate Seminars, Winter Semester 2015/2016, University of Szczecin, Faculty of Geosciences, Szczecin, 3 December, 2015, Author(s): **H.E.M. Meier**, Title: The future of hypoxia in the deep basins of the Baltic Sea. (invited presentation)

- Leibniz Institute for Baltic Sea Research, Institute seminar, Warnemünde, Germany, 16 December 2015, Author(s): **H.E.M. Meier**, Title: Hypoxia in past and future climates of the Baltic Sea.

Lectures 2016

- DEFROST final conference, University Centre in Svalbard (UNIS), Longyearbyen, Svalbard, 2 February 2016, Author(s): I. Wåhlström and **H.E.M. Meier**, Title: Impact of increasing inflow of warmer Atlantic water into the Arctic Ocean on the sea-air exchange of CO_2 and CH_4 in the Laptev Sea.

- Fakultätskolloquium der Mathematisch-Naturwissenschaftliche Fakultät, Universität Rostock, Antrittsvorlesung, 7 April, 2016: Author(s): **H.E.M. Meier**, Title: Klimaveränderungen der Ostsee im 20. und 21. Jahrhundert - neue Ergebnisse basierend auf regionaler Systemmodellierung. (In German, Changing climate of the Baltic Sea during the 20th and 21st century - new results based upon regional climate system modelling.) (invited presentation)

- Physikalisches Kolloquium der Mathematisch-Naturwissenschaftliche Fakultät, Universität Rostock, 12 Mai, 2016: Author(s): **H.E.M. Meier**, Title: Herausforderungen

für die Klimamodellierung der Ostsee. (In German, Challenges in modelling of the Baltic Sea climate.) (invited presentation)

- International Conference on Regional Climate-CORDEX 2016 (ICRC-CORDEX 2016), Stockholm, 17-20 May, 2016: Author(s): **H.E.M. Meier** and Moa Edman, Title: Estimating uncertainties in projections for the Baltic Sea region based upon an ensemble of regional climate system models.

- Fehmarn Belt Days 2016, Hafencity Universität, Hamburg, 20-22 September 2016, Author(s): **H.E.M. Meier**, Title: Impact of climate change on the water exchange between the North Sea and Baltic Sea. (invited presentation)

- 1st Baltic Earth Conference **on "**Multiple drivers for Earth system changes in the Baltic Sea region", Nida, Curonian Spit, Lithuania, 13-17 June 2016, Author(s): **H.E.M. Meier** on behalf of the Baltic Earth program, Title: Baltic Earth and Conference Opening.

- Climate Limited-area Modelling Community Assembly, Lüneburg, 22 September 2016, Author(s): **H.E.M. Meier**, Title: Do we need regional climate system models? (invited presentation)

- 15th German-Polish Seminar, Hamburg, 11-12 October 2016, Author(s): **H.E.M. Meier**, Title: Regional climate system modelling for the North Sea and Baltic Sea region - a review. (invited presentation)

Lectures 2017

- International seminar connected to the COCOA annual meeting, Leibniz Institute for Baltic Sea Research Warnemünde, Rostock, Germany, 24 January 2017, Author(s): **H.E.M. Meier**, Title: Challenges in Baltic Sea coastal zone modelling. (invited presentation)

- Baltic Earth Seminar on Saltwater Inflows, Leibniz Institute for Baltic Sea Research Warnemünde, Rostock, Germany, 8 March 2017, Author(s): **H.E.M. Meier**, G. Väli, M. Naumann and K. Eilola, Title: Causes of recently accelerated oxygen consumption rates in the Baltic Sea.

- 11th Baltic Sea Science Congress "Living along gradients: past, present, future" to be held on June, 12 – 16, 2017 in Rostock, Germany, Author(s): **H.E.M. Meier**, A. Höglund, K. Eilola and E. Almroth, Title: Impact of accelerated future global mean sea level rise on hypoxia in the Baltic Sea

Lectures 2018

- Helmholtz Centre for Ocean Research Kiel (GEOMAR), FB1-Seminar, Kiel, Germany, 22 January 2018, Author(s): **H.E.M. Meier**, Title: Integrated Earth System Modeling for the Baltic Sea Region (invited presentation)

- WWF and Coalition Clean Baltic (CCB) side event at the HELCOM Ministerial Meeting in Brussels on "The uncomfortable truth of the BSAP – 10 years down the line towards saving the Baltic Sea", 6th March 2018, 13:30-15:00, Palais d'Egmont, 8 Place du Petit Sablon, Brussels, Author(s): **H.E.M. Meier** (Leibniz Institute for Baltic Sea Research Warnemünde and Swedish Meteorological & Hydrological Institute), Title: What will the BSAP need to address to meet the challenges of climate change?

- MedCORDEX-Baltic Earth-COST Workshop on "Regional Climate System Modelling for the European Sea Regions", Universitat de les Illes Balears, Palma de Mallorca,

Spain, 14- 16 March 2018, Author(s): **H.E.M. Meier,** Title: Baltic Earth and Integrated Earth System Modeling for the Baltic Sea Region

- 8th GEWEX Open Science Conference: Extremes and Water on the Edge. May 6 - 11, 2018, Canmore, Alberta, Canada, Author(s): **H.E.M. Meier,** Title: Integrated Earth System Modeling for the Baltic Sea Region.

- 2nd Baltic Earth Conference on **"**The Baltic Sea Region in Transition", Helsingør, Denmark, 11-15 June 2018, Author(s): H.E.M. Meier**, G. Väli**, M. Naumann, K. Eilola, and C. Frauen, Title: Recently accelerated oxygen consumption rates amplify deoxygenation in the Baltic Sea – observations and model results.

- 2nd Baltic Earth Conference on **"**The Baltic Sea Region in Transition", Helsingør, Denmark, 11-15 June 2018, Author(s): **H.E.M. Meier** on behalf of the Baltic Earth program, Title: Baltic Earth and Conference Opening

- Baltic Earth Workshop on "Multiple drivers for Earth system changes in the Baltic Sea region", Tallinn University of Technology, Tallinn, Estonia, 26- 27 November 2018, Author(s): **H.E.M. Meier,** Title: Response of the hydrography and marine biogeochemistry to multiple drivers in the Baltic Sea region.

Lectures 2019

- Coastal Seminar at Rostock University, 31 January 2019, Author(s): **H. E. M. Meier**, Title: The coastal zone in a Baltic Zone Model.

- Paleolink Workshop, A joint effort to bring together GCM, RCM and Proxy communities, University of Murcia, Spain, 6th-8th February 2019, Author(s): **H. E. M. Meier**, Title: Reconstructing low-frequency climate variability of the Baltic Sea region

- Meeresumweltsymposium 2019, Bundesamt für Seeschiffahrt und Hydrologie, Hamburg, 4-5 June 2019, Author(s): **H. E. M. Meier**, Title: Wird der Ostseeaktionsplan auch unter zukünftigen Klimabedingungen sein Ziel erreichen? (Will the Baltic Sea Action Plan achieve its goal under future climatic conditions?)

- 12th Baltic Sea Science Congress "Making connections for the future" 19-23 August, 2019 in Stockholm, Sweden, Author(s): **H. E. M. Meier**, Moa K. Edman, Kari J. Eilola, Manja Placke, Thomas Neumann, Helén C. Andersson, Sandra-Esther Brunnabend, Christian Dieterich, Claudia Frauen, René Friedland, Matthias Gröger, Bo G. Gustafsson, Erik Gustafsson, Alexey Isaev, Madline Kniebusch, Ivan Kuznetsov, Bärbel Müller-Karulis, Anders Omstedt, Vladimir Ryabchenko, Sofia Saraiva, and Oleg P. Savchuk, Title: Uncertainties of future projections of the Baltic Sea

- 6th Med-CORDEX workshop, Centre International de Conférences, Météo-France, Toulouse, France, November 25-29, 2019, Author(s): **H. E. M. Meier**, Title: Regional climate system modeling within Baltic Earth (invited presentation)

- Seminar at the Finnish Meteorological Institute, 19 Dezember 2019, Author(s): **H. E. M. Meier**, Title: Regional climate system analysis and modeling of the Baltic Sea region" (invited presentation).

Lectures 2020

- 3rd Baltic Earth Conference on **"**Earth System Changes and Baltic Sea Coasts", online video conference, 2-3 June 2020, Author(s): **H. E. Markus Meier**, C. Dieterich, M. Gröger. Title: Uncertainties of Baltic Sea future projections under different shared socioeconomic pathways.

- 3rd Baltic Earth Conference on "Earth System Changes and Baltic Sea Coasts", online video conference, 2-3 June 2020, Author(s): **H. E. Markus Meier** on behalf of the Baltic Earth program, Title: Welcome and Conference Opening.

- Online Conference on Marginal Seas – Past and Future, 16-17 December 2020, 1-6 pm CET, co-organized by Baltic Earth, Author(s): **H. E. Markus Meier**, Title: Hypoxia in Marginal Seas

Lectures 2021

- Workshop on Climate Challenges in the Baltic Sea Region, organized by C3S (ECMWF, DWD), 26-27 May 2021, Author(s): **H. E. Markus Meier** on behalf of the EN-CLIME team, Title: Climate change fact sheets for sustainable Baltic Sea management

- 4th Baltic Sea Marine Spatial Planing Forum, 1-2 June 2021, Author(s): **H. E. Markus Meier** on behalf of the EN CLIME team, Title: Climate Change in the Baltic Sea Region

- Workshop Integrated Earth System Research – Challenges, Approaches and Impacts, Virtual conference, 29th June 2021, 13:00 to 30th June 2021, 14:00 (CEST), Organiser: Leibniz Research Network "Integrated Earth System Research", Author(s): **H. E. Markus Meier**, Title: The role of the ocean in the Earth system

- Press launch event of the Baltic Earth-HELCOM Climate Change Fact Sheet produced by EN CLIME, 3 September 2021, Author(s): **H. E. Markus Meier** on behalf of the EN-CLIME team, Title: Climate change fact sheet – Direct and indirect parameters (ecosystem)

- 13th Baltic Sea Science Congress "Understanding transitions in the Baltic Sea" 18-22 October, 2021 in Aarhus, Denmark, Author(s): **H. E. M. Meier** on behalf of the BEARs and EN-CLIME teams, Title: Current knowledge about past and future climate changes in the Baltic Sea region (invited keynote speaker)

- The Gulf of Finland Science Days 2021-Estonian Academy of Sciences, Tallinn, 29-30 November 2021, Author(s): **H. E. M. Meier** on behalf of the BEARs and EN-CLIME teams, Title: Current knowledge about past and future climate changes in the Gulf of Finland region (invited keynote speaker)

- Baltic Breakfast, Baltic Sea Centre, Stockholm University, 14 December 2021, Author(s): H. E. M. Meier on behalf of the BEARs and EN-CLIME teams, Title: What do we know about the impact of climate change on the Baltic Sea? (invited speaker) https://balticeye.org/en/articles/baltic-breakfast-impacts-of-climate-change/

Lectures 2022

- Lions Club Rostock, Online, 6 March 2022, Author(s): **H. E. M. Meier**, Title: Klimawandel im Ostseeraum, Climate Change in the Baltic Sea Region
- HELCOM Stakeholder Conference 2022, 9-10 March 2022, Author(s): **H. E. M. Meier** on behalf of the BEARs and EN-CLIME teams, Title: What do we know about the impact of climate change on the Baltic Sea? (invited speaker, canceled)
- ESPON Peer Learning Workshop: Climate change adaptation strategies in the Baltic Sea Region, 5 May 2022, Author(s): **H. E. M. Meier**, Title: How is climate change currently affecting the Baltic Sea? (invited speaker)
- Leibniz Institute for Baltic Sea Research Warnemünde Colloquium, 6 May 2022, Author(s): **H. E. M. Meier**, Title: Climate change as a grand challenge of the IOW research programme (invited speaker)

- International JPI Oceans and JPI Climate Knowledge Hub Sea Level Rise Baltic Sea Workshop, 9 May 2022, Author(s): **H. E. M. Meier**, Title: Summary of existing knowledge based upon the Baltic Earth Assessment reports and the Knowledge Hub Sea Level Rise survey results for the Baltic Sea (invited speaker)
- Swedish Meteorological and Hydrological Institute Colloquium, 12 May 2022, Author(s): **H. E. M. Meier**, Title: Investigating hypoxic and euxinic area changes based on various datasets from the Baltic Sea (invited speaker).
- Meeresumweltsymposium 2022, Bundesamt für Seeschiffahrt und Hydrologie, Hamburg, 18-19 May 2022, Author(s): H. E. M. Meier, Title: Der dritte Klimazustandsbericht für die Ostseeregion. (The third climate change assessment report for the Baltic Sea region)
- 4th Baltic Earth Conference on "Assessing the Baltic Sea Earth System", 30 May – 3 June 2022, Jastarnia, Hel Peninsula, Poland, Author(s): **H. E. Markus Meier** on behalf of the Baltic Earth program, Title: Welcome and Conference Opening.
- Leibniz Institute for Baltic Sea Research Warnemünde (IOW) Colloquium, Online, 6 May 2022, Author(s): **H. E. M. Meier**, Title: Climate change as a grand challenge of the IOW research programme
- Royal Netherlands Institute for Sea Research (NIOZ) - Leibniz Institute for Baltic Sea Research Warnemünde (IOW) Workshop, Online, 23 June 2022, Author(s): **H. E. M. Meier**, Title: Climate Change in the Baltic Sea Region
- The Baltic Stakeholder Conference 2022 - Climate Change in the Baltic Sea (BSC2022), Online, 26-27 September 2022, Author(s): **H. E. M. Meier**, Title: Baltic Earth/HELCOM Fact Sheet on Climate Change in the Baltic Sea (invited speaker)
- EU Strategy for the Baltic Sea Region (EUSBSR) Annual Forum 2022, Lappeenranta, Finland, 28-29 September 2022, Author(s): **H. E. M. Meier**, Title: Baltic Earth/HELCOM Fact Sheet on Climate Change in the Baltic Sea (online invited speaker)
- Kulturkaten Kiek, Prerow, 13 October 2022, Author(s): **H. E. M. Meier**, Title: Do we expect a future increase in the severity of extreme water levels in the Baltic Sea? (In German: Erwarten wir für die Zukunft eine Zunahme der Häufigkeit extremer Wasserstände in der Ostsee?) (invited speaker)
- Keynote lecture on the occasion of the award ceremony of the Richard-Siegmann-Medal by the Richard-Siegmann foundation, 8 November2022, Author(s): **H. E. M. Meier**, Title: "What do we know about the future climate in Rostock and the Baltic Sea region?" (In German: „Was wissen wir über das zukünftige Klima in Rostock und der Ostseeregion?") (invited speaker)
- Assessment of medium-sized ships in Germany by the Science Council (Begutachtung der mittelgroßen Schiffe in Deutschland durch den Wissenschaftsrat), 16 – 17 November 2022, Author(s): **H. E. M. Meier**, Title: Observational data for basic climate research (In German: Beobachtungsdaten für die Klimagrundlagenforschung) (invited speaker)

Lectures 2023

- Lecture and panel discussion of experts from the John Nurminen Foundation (Diskussion der Expertenrunde der John Nurminen Stiftung), Helsinki, Finland, 7 February 2023, Author(s): **H. E. M. Meier**, Title: Climate change in the Baltic Sea region. (invited speaker)

- Lecture within the sustainMare program, online, 10 May 2023, Author(s): **H. E. M. Meier**, Title: Future climate change in the North Sea and Baltic Sea regions (In German: „Zukünftige Klimaänderungen in Nord- und Ostsee")
- International Conference on Regional Climate, ICRC-CORDEX 2023, 25-29 September 2023, Trieste, Italy, Author(s): **H. E. M. Meier** and the Baltic Earth Assessment Report team, Title: Regional Climate System Modeling for the Baltic Sea region – an overview about Baltic Earth activities (invited speaker)
- 5th Data Community of Practice (CoP) Workshop (eMSP-NBSR), 11 October 2023, Author(s): **H. E. M. Meier**, Title: Baltic Earth/HELCOM Fact Sheet on Climate Change in the Baltic Sea (invited speaker)
- Baltic Earth Colloquium, online, 4 December 2023, Author(s): **H. E. M. Meier**, Title: Past trends in the water balance of the Baltic Sea

Lectures 2024

- Laureate's lecture on the occasion of the award ceremony of the Professor Kazimierz Demel Medal by the National Marine Fisheries Research Institute, Gdynia, Poland, 20 March 2024, Author(s): **H. E. M. Meier**, Title: Impact of Climate Change on the Baltic Sea ecosystem from a modelling perspective: what do we actually know? (invited speaker)
- 5th Baltic Earth Conference on "New Challenges for Baltic Sea Earth System Research", 13 – 17 May 2024, Jūrmala, Latvia, Author(s): **H. E. Markus Meier** on behalf of the Baltic Earth program, Title: Welcome and Conference Opening
- 5th Baltic Earth Conference on "New Challenges for Baltic Sea Earth System Research", 13 – 17 May 2024, Jūrmala, Latvia, Author(s): **H. E. Markus Meier**. K. Safonova and M. Gröger, Title: More frequent and longer marine heatwaves (MHW) in the Baltic Sea.
- GEWEX-GHP meeting, Sapporo, 3 July 2024, Author(s): **H. E. M. Meier** and M. Reckermann, Title: Baltic Earth summary 2024
- Swedish Meteorological and Hydrological Institute, 10 October 2024, Author(s): **H. E. M. Meier**, Title: Multidecadal climate variability dominated past trends in the water balance of the Baltic Sea watershed (invited lecture).
- 2nd Baltic Earth Workshop on "Multiple Drivers in Earth system changes in the Baltic Sea region", 4 – 5 December 2024, Helsinki, Finland, Author(s): **H. E. M. Meier**, Title: Interaction of climate change with other drivers of the Baltic Sea region

Lectures 2025

- 15th Baltic Sea Science Congress "From the pier of knowledge to the horizon of discovery" 26-30 May, 2025 in Sopot, Poland, Author(s): **H. E. M. Meier** on behalf of the Baltic Earth Science Steering Group, Title: Baltic Earth 2.0 (solicited)
- 15th Baltic Sea Science Congress "From the pier of knowledge to the horizon of discovery" 26-30 May, 2025 in Sopot, Poland, Author(s): **H. E. M. Meier**, Leonie Barghorn, Florian Börgel, Matthias Gröger, Lev Naumov, and Hagen Radtke, Title: Causes of multidecadal climate variability of the Baltic Sea system
- GEWEX- GHP meeting 2025, 9 - 10 July, 2025 in Montreal, Canada, Author(s): **H. E. M. Meier**, Juris Aigars, Inga Dalidiene, Georgia Destouni, Matthias Gröger, Kari Hyytiäinen, Karol Kulinski, Urmas Lips, Kai Myrberg, Kevin Parnell, Piia Post, Gregor Rehder, Anna Rutgersson, Tarmo Soomere, Martin Stendel, Laura Tuomi, Ralf Weisse, Tamara Zalewska and the working group co-chairs, Title: Baltic Earth 2.0,

- International scientific conference: “Climate Compass 2025: The art of adaptation in the light of science”, Tartu University, 27 November 2025, Author(s): **H. E. M. Meier,** Title: Impact of past climate change on the Baltic Sea (invited)

Lectures 2026

- AGU Ocean Science Meeting 2026, Glasgow, 22-27 February 2026, Author(s): **H. E. M. Meier,** Title: Past and ongoing regional climate modeling activities in the Baltic Sea region (Poster)
- International colloquium on the occasion of the retirement of Dr. Andreas Lehmann, GEOMAR, Kiel, 17 March 2026, Author(s): **H. E. M. Meier,** Title: Earth system research within the framework of Baltic Earth (invited speaker)
- 6th Baltic Earth Conference in Heringsdorf, Usedom, Germany, 13-17 April 2026, Author(s): **H. E. M. Meier** and K. Kulinski**,** Title: Welcome and introduction
- 6th Baltic Earth Conference in Heringsdorf, Usedom, Germany, 13-17 April 2026, Author(s): **H. E. M. Meier**, Sven Karsten, Sebastian Georg Völker, Leonie Barghorn, Florian Börgel, Matthias Gröger, Lev Naumov, Kseniia Safonova, Title: Past and ongoing regional climate modeling activities in the Baltic Sea region (Poster)
- Baltic Sea Archipelagos Symposium, Sakari Alhopuro Foundation, Turku, Finland, 27-28 April 2026, Author(s): **H. E. M. Meier**, Title: The Baltic Sea in changing climate – what do we know from historical measurements and what do we expect for the future? (invited key note)
-

Projects

(Third party funding total 11,986 M€)

- BALTEX (Baltic Sea Experiment), my PhD project was funded partly from the German Ministery of Research within BALTEX:

  http://w3.gkss.de/baltex/baltex home.html

- BASYS (Baltic Sea System Study), EU funded MAST-III project MAS3-CT96-0058 and IC20-CT96-0080, 1996-1998, project participant:

  http://www.io-warnemuende.de/Projects/Basys/overview/overview 1.htm

- SWECLIM (Swedish Regional Climate Modelling Programme), funded by the Foundation for Strategic Environmental Research (MISTRA) and by the Swedish Meteorological and Hydrological Institute (SMHI), 1997-2003, project participant:

  http://www.smhi.se/sweclim/

- CARTUM (Comparative Analysis and Rationalization of Second-Moment Turbulence Models), EU Concerted Action MAS3-CT98-0172 and IC20-CT98-0104, 1999-2001, project participant:

  http://www.ifm.uni-hamburg.de/ wwwto/ResearchTopics/CARTUM/carthome.htm

- SEAREG (Sea Level Change Affecting the Spatial Development in the Baltic Sea Region), funded by the European Regional Development Fund (ERDF) within the Baltic Sea Region INTERREG IIIB program, 2002-2005, Co-PI for SMHI and the sub-contractor INREGIA AB Stockholm, workpackage leader, 475 000 Euro:

http://www.gsf.fi/projects/seareg/

- ICEMON (Sea ice monitoring in the polar regions), funded by Global Monitoring for Environment and Security GMES is a joint initiative of the European Space Agency (ESA) and the European Commission, ESA ESRIN Contract No. 17060/03/I-IW, 2003-2004, project participant:

  http://www.nersc.no/ICEMON/

- GLIMPSE (Global implications of Arctic climate processes and feedbacks), European Commision project EVK2-CT-2002-00164, 2002-2005, project participant: http://www.awi-potsdam.de/www-pot/atmo/glimpse/index.html

- SNIC (Swedish National infrastructure for computing, computational resources from SWEGRID, Swedish National Allocation Committee, PI, SNIC 004/03-74, 2004, 11 738 cpuh/month; PI, SNIC 011/04-10, 2005, 8 000 cpuh/month; PI, SNIC 007/05-44, 2006, 13 000 cpuh/month; PI, SNIC 021/06-8, 2007, 32 000 cpuh/month)

  http://www.swegrid.se/, http://www.snic.vr.se/

- BALTDER (Centre of Excellence for Baltic Development, Education and Research, European Commission project EVK3-2002-00502, 2002-2005, external expert and advisor):

  http://www.ocean.univ.gda.pl/baltder/

- MUSCAD (Multi-proxy Studies of Climate Anno Domini), organizer of a workshop on "Climate variations in Sweden during the past 2000 years", joined the network during 2002-2006
  http://www.geol.lu.se/proxy/

- AOMIP (Arctic Ocean Model Intercomparison Project, since 2005), project participant (without funding)

  http://fish.cims.nyu.edu/project aomip/overview.html

- BACC (BALTEX Assessment of Climate Change for the Baltic Sea Basin), member of the writing team of chapter 2 and 3

  http://dvsun3.gkss.de/BACC/

- DAMOCLES (Developing Arctic Modelling and Observing Capabilities for Long-term Environmental Studies, 2005-2009), project participant http://www.damocles-eu.org

- "Modeling climate variability of the Arctic Ocean in past and future climates with special focus on changing sea-ice", Swedish Research Council (Vetenskåpsrådet), project-no. 621-2006-5030, 2007-2009, PI, 1 822 500 SEK (192 000 Euro)

  http://www.vr.se

- "Sensor Networks to Monitor Marine Environment with Particular Focus on Climate Changes", Swedish Governmental Agency for Innovation Systems (Vinnova), project-no. P29461-1, 2007-2009, under-consult of the Swedish Institute of Computer Science AB (SICS), PI: Dr. Thiemo Voigt, 1 500 000 SEK

  http://www.vinnova.se

- “Investigating harmful algae blooms in future climate of the Baltic Sea”, The Swedish Research Council for Environment, Agricultural Sciences and Spatial Planning (Formas), project-no. 212-2006-1993, 2007-2008, PI, 1 659 450 SEK (175 000 Euro)

  http://www.formas.se

- “Fluid and climate dynamics - Large scale simulations with applications to turbulence research and geophysics”, Knut and Alice Wallenberg foundation and the Swedish Infrastructure for Computing (SNIC), a unit of the Swedish Research Council, 2008-2011, Co-PI for SMHI and MISU, PI: Prof. Erland Källén, MISU, total 25.4 million SEK for a climate computing resource

- “Simulations of some engineering methods proposed to improve oxygen conditions in the Baltic proper”, Baltic Sea 2020 foundation, 2007, Co-PI for SMHI, PI: Dr. Bo Gustafsson, Göteborg University, 420 000 SEK

- NoIce (Nordic Observations of Ice Cover Extinction), Nordic Council of Ministers, 2007, 2009, 2010, Co-PI for SMHI, PI: Dr. Jari Haapala, Finnish Institute for Marine Research, 77 000 SEK (2007), 60 000 DKK (2009), 60 000 DKK (2010)

- NetICE (Nordic Network on sea-ice research), NordForsk, 2008-2010, Co-PI for SMHI, PI: Prof. Jorma Kuparinen, Helsinki University, 900 000 NOK (for the whole network) (http://www.helsinki.fi/netice)

- ECOSUPPORT (Advanced modeling tool for scenarios of the Baltic Sea ECOsystem to SUPPORT decision making), BONUS+ program, 2009-2011, PI and coordinator, total funding: about 1.6 mio Euro, 3 649 802 SEK for SMHI

- INFLOW (Holocene saline water inflow changes into the Baltic Sea, ecosystem responses and future scenarios), BONUS+ program, 2009-2011, Co-PI for SMHI, PI: Dr. Aarno Kotilainen, Geological Survey of Finland, 2 301 651 SEK
- AMBER (Assessment and Modelling Baltic Ecosystem Response), BONUS+ program, 2009-2011, Co-PI for SMHI, PI: Dr. Joachim Dippner, Leibniz Institute for Baltic Sea Research Warnemünde, 1 347 342 SEK

- BalticWay (The potential of currents for environmental management of the Baltic Sea maritime industry), BONUS+ program, 2009-2011, Co-PI for SMHI, PI: Prof. Tarmo Soomere, Institute of Cybernetics at Tallinn University of Technology, 2 379 501 SEK

- SAFEWIN (Safety of winter navigation in dynamic ice), EU/FP7, 2009-2012, Co-PI for SMHI, PI: Prof. Pentti Kujala, Helsinki University of Technology, 377 000 Euro

- ABNORMAL (A Baltic and North Sea model eutrophication assessment in a future climate), Nordic Council of Ministers, 2009, Co-PI for SMHI, PI: Dr. Morten Skogen, Institute of Marine Research, Bergen (Norway), 70 000 DKK (2009), 65 000 DKK (2010), 50 000 DKK (2011)

- “Ocean modelling of Kattegat and Skagerrak”, commonly funded by Göteborg University, Swedish Board of Fisheries, Swedish Environmental Protection Agency (Dnr. 2356835-09Nh), Länsstyrelse i Västra Götaland, Västragötalandsregionen (Dnr. 612-0690-09), 2010, PI, 450 000 SEK

- “Advanced Simulation of Arctic climate change and impact on Northern regions” (ADSIMNOR), The Swedish Research Council for Environment, Agricultural Sciences and Spatial Planning (Formas), Strategic Research Area, project-no. 214-2009-389, 2010-2013, Co-PI for SMHI/Ocean Research, PI: Prof. Colin Jones, SMHI/Rossby Centre, 3 200 000 SEK (for a PhD position)

- “Impact of accelerated future global mean sea level rise on the phosphorus cycle in the Baltic Sea”, The Swedish Research Council for Environment, Agricultural Sciences and Spatial Planning (Formas), project-no. 214-2009-577, 2010-2012, PI, 4 671 000 SEK (492 000 Euro)

- “Integrated Management of Agriculture, Fishery, Environment and Economy” (MAFIA), Danish Council for Strategic Research (DSF), 2010-2013, Co-PI for SMHI, PI: Prof. Bo Riemann, University of Aarhus, 216 000 DKK

- BEAM (Baltic Ecosystem Adaptive Management), The Swedish Research Council for Environment, Agricultural Sciences and Spatial Planning (Formas), Stockholm University’s Strategic Marine Environmental Research Funds, 2010-2015, Co-PI for Meteorological Institute at Stockholm University (MISU), PI: Prof. Kåre Bremer, Stockholm University, in total 41.7 MSEK (raised funding for a three-year research position at MISU, in total 3 170 000 SEK for MISU and SMHI)

- DEFROST - “Impacts of a changing cryosphere - depicting ecosystem-climate feedbacks from permafrost, snow and ice”, Nordic Center of Excellence on Interaction between Climate Change and the Cryosphere, 2011-2015, Co-PI for SMHI, PI: Torben R. Christensen, Lund University, 1 250 000 NOK (1 postdoc position)

- NorMER - “The Nordic Centre for Research on Marine Ecosystems and Resources under Climate Change”, Nordic Centre of Excellence on Climate Change Effects on Marine Ecosystems and Resource Economics, 2011-2015, Co-PI for SMHI, PI: Prof. Nils Christian Stenseth, University of Oslo, project in total 30.5 MNOK, SMHI 1.5 MNOK.

- KLIWAS - “Impacts of Climate Change on Waterways and Shipping - Development of Adaptation Options”, Federal Ministry of Transport, Building, and Urban Development (BMVBS), Germany 2011-2012, SMHI is under-consult of the Federal Maritime and Hydrographic Agency (BSH), Germany, 195 000 EURO

- Interreg projekt, “Hav möter land - klimat, förvaltning och samhällsplanering tillsammans” (KASK), 2010-2013, project totally 3.8 mio EUR, FoUo 3915+360 hours, coordinator: Länsstyrelsen i Västra Götalands län

- “Impact of changing climate on circulation and biogeochemical cycles of the integrated North Sea and Baltic Sea system”, The Swedish Research Council for Environment, Agricultural Sciences and Spatial Planning (Formas), project-no. 214-2010-1575, 2011-2013, PI, 5 170 000 SEK (544 000 Euro)

- MyOcean - 2010 Research and Development call, No. FP7-SPACE-2007-1, EU/FP7, “Towards operational modelling of the Baltic Sea using NEMO”, 2011, PI (involved countries Sweden, Denmark, Finland), 35 000 Euro in total (15,397 Euro for SMHI)

- SNIC (Swedish National infrastructure for computing), Applications for large scale allocations coordinated by the Swedish National Allocations Commmittee (SNAC), “Regional climate modelling for the North Sea and Baltic Sea”, PI, SNIC 002/12-25, 2012-2013, 200 000 core hours/month;

- Research projekt on “Flooding risks at Swedish coasts: extreme situations in present and future climates” funded by the Insurance company “Länsförsäkringar”, 2013-2015, PI, 2 089 375 SEK

- North Sea Region Climate Change Assessment (NOSCCA), Lead author of the chapter 3.b Projected changes in the Norths Sea (and interface regions), 2011-2015, no funding

- “Reconstructing and projecting Baltic Sea climate variability 1850-2100”, Swedish Research Council (Vetenskåpsrådet), project-no. 2012-23233-96678-38, DNR 2012-02117, 2013-2015, PI, 2 100 000 SEK (221 000 Euro)

- “Impact of future cryospheric changes on northern hemisphere. Climate, green growth and society (GREENICE)” funded by Top-level Research Initiative (TRI), Norden, 2014-2016, Co-PI for SMHI, PI: Prof. Noel Keenlyside, University of Bergen, 3 750 000 NOK (36 PMs)

- SNIC (Swedish National infrastructure for computing), Applications for large scale allocations coordinated by the Swedish National Allocations Commmittee (SNAC), “Impact of changing climate on biogeochemical cycling in the North Sea and Baltic Sea”, PI, SNIC 2013/11-22, 2013-2014, 250 000 core hours/month

- COCOA - “Nutrient Cocktail in coastal zones of the Baltic Sea”, BONUS program, 2014-2017, Co-PI for SMHI, PI: Prof. Jacob Carstensen, Aarhus University, Denmark, project in total 4 069 013 EURO, SMHI 396 648 EURO or 3 500 000 SEK.

- “Cyanobacteria life cycles and nitrogen fixation in historical reconstructions and future climate scenarios (1850-2100) of the Baltic Sea”, The Swedish Research Council for Environment, Agricultural Sciences and Spatial Planning (Formas), project-no. 214-2013-1449, 2014-2016, PI, 5 135 000 SEK (541 000 Euro)

- BalticAPP - “Wellbeing from the Baltic Sea - applications combining natural science and economics”, BONUS program, 2015-2017, Work Package 1 leader and Co-PI for SMHI, PI: Prof. Kari Hyytiäinen, University of Helsinki, Finland, project in total 1 998 560 EURO, SMHI 301 500 EURO or 2 788 875 SEK.
- STORMWIND - “Strategic and Operational Risk Management for Wintertime Maritime Transportation System”, BONUS program, 2015-2017, Co-PI for SMHI, PI: Prof. Pentti Kujala, Aalto University (AALTO), Finland, project in total 1 996 654 EURO, SMHI 321 480 EURO or 2 973 690 SEK.

- SNIC (Swedish National infrastructure for computing), Applications for large scale allocations coordinated by the Swedish National Allocations Commmittee (SNAC), “Impact of changing climate on biogeochemical cycling in the North Sea and Baltic Sea - part 2”, PI, SNIC 2014/8-36, 2014-2015, 250 000 core hours/month

- BACC II (BALTEX Assessment of Climate Change for the Baltic Sea Basin), lead author for chapter 13 (http://www.baltic-earth.eu/BACC2/index.html)

- International advanced PhD course on “Impact of climate change on the marine environment with special focus on the role of changing extremes, 24 - 30 August 2015, co-organized by the “Baltic Ecosystem Adaptive Management (BEAM) and Baltic Earth programmes, PI, the application for the doctoral coarse was awarded 295 000 SEK or 31 053 EUR from BEAM.

- ARCPATH - “Arctic Climate Predictions: Pathways to Resilient, Sustainable Socities, Nordic Center of Excellence in Arctic Research, Nordforsk, 2016-2019, Co-PI for SMHI, PI: Dr. Yongqi Gao, Nansen Environmental and Remote Sensing Center (NERSC), Bergen, Norway, project in total 28 mio NOK, SMHI 3 893 389 NOK.

- ``Per Hall'', Swedish Research Council (Vetenskåpsrådet), DNR 2015-03717, 2016-2019, Co-PI for SMHI, PI: Prof. Per Hall, ??? SEK (??? Euro)

- INTEGRAL “Integrated carbon and trace gas monitoring for the Baltic Sea, BONUS program, 2017-2019, Work Package 6 leader and project member for IOW, PI: Prof.

Gregor Rehder, IOW, project in total 2 111 038 EUR, IOW (Meier): 33 person months for one postdoc

- RADO – „Ran an die Ostsee", Co-PI for UI, PI: Prof Dr. U. Bathmann, IOW, project in total about 80 000 EUR
- CoastalFutures “DAM Schutz und Nutzen – CoastalFutures: Zukunftsszenarien zur Förderung einer nachhaltigen Nutzung mariner Räume; Vorhaben: Szenarien für Ökosystemleistungen“, 2021-2024, PI: Corinna Schrum (Hereon), Co-PI for IOW, Förderkennzeichen: 03F0911B, 835,806 €
- CoastalFutures II “DAM-SN-CoastalFutures II – Zukunftsszenarien zur Förderung einer nachhaltigen Nutzung mariner Räume – Teilprojekt B: Szenarien für Ökosystemleistungen“, 2025-2027, PI: Corinna Schrum (Hereon), Co-PI for IOW, Förderkennzeichen: 03F0911B, 689,599.09 €
- RIVIERADE, HORIZON-CL6-2024-CLIMATE-01, 2026-2029 (48 months), starte date 1 January 2026, grant preparation, PI: Stefano Salon (OGS), Co-PI for IOW, total budget: 4,356,201.25 €, IOW budget: 573,002.50 €, 63 person months
-