



## Anders Omstedt

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## Research:

How do the earth's water body function, and how will future changes influence them? We need to understand water, energy, nutrient, carbon cycles, ecosystem changes, and human behaviour to answer these questions. The coupling between water bodies, atmosphere, and surrounding land surfaces is also of significant interest. The main research approaches are detection studies by using and developing long-time series and attribution and scenario studies using and developing aquatic process-oriented models. Recent research focuses are the human role and the connection between science and the arts. The research takes part in the Baltic Earth-BALTEX program and as a member of the Future Earth Coasts.

An interview with Anders Omstedt, including a video statement on his professional life and science in general, conducted by Hans von Storch and Marcus Reckermann, is available at: <https://baltic.earth/interviews>

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## Professional Experiences:

### Positions:

- Professor emeritus, Department of Marine Sciences, University of Gothenburg, 2016-10-
- Deputy Head of Department of Earth Sciences, University of Gothenburg, 2012-07-01 - 2015-06-30
- Coordinator at Swedish Institute for the Marine Environment, 2009-11-01 – 2013-12-31
- Member of the Faculty Board of Science at University of Gothenburg, 2009-07-01— 2011-06-31
- Deputy Head of the Department of Earth Sciences, University of Gothenburg. 2006-07-01--2009-06-30, 2012-07-31-
- Chairman of the Research Strategic Group (PROF) at the Department of Earth Sciences, University of Gothenburg. 2006-07-01—2009-06-31, 2012-07-01-
- Member of the Advisory Group at the Department of Earth Sciences, University of Gothenburg. 2006-07-01 --2009-06-31, 2012-07-01-
- Chairman of the Appointment Committee at the Department of Earth Sciences, University of Gothenburg. 2003-09-16 -- 2006-06-30
- Head of the Ocean Climate Group at the University of Gothenburg, Department of Earth Sciences - Oceanography, 2001-10-01--
- Professor, University of Gothenburg, Earth Sciences Centre-Oceanography, 2001-10-01--
- Head of oceanographic research, SMHI, 2000-06--2001-09
- Visiting Professor in Oceanography, University of Gothenburg, 1998-2001
- Research Scientist, SMHI, 1992-12--2000-05
- Visiting Scientist, Institute of Ocean Sciences, Canada, 1992-07--11
- Visiting Scientist, Canada Centre of Inland Waters, 1992-01--06
- Associate Editor, Journal of Geophysical Research 1991--1994
- Head of oceanographic research, SMHI, 1986--1992
- Senior oceanographer, SMHI, 1982--1986
- Meteorologist, SMHI, 1975--1982
- Meteorological assistant, SMHI, 1973--1975

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### Degrees:

- Associate Professor, University of Gothenburg, 1990.
- Ph.D., Göteborg University, Physical Oceanography, 1985-11-09. Thesis: On cooling and initial ice formation in the upper layers of the ocean.
- B.Sc., Stockholm University, Mathematics, Physics, Meteorology and Oceanography, 1974.

## **Key qualifications:**

Prof. Anders Omstedt has participated actively in several national and international scientific bodies and has an active role in the BALTEX (Baltic Sea Experiment) and BONUS programs and was active in the MUSCAD (Multi proxy Studies of Climate Anno Domini) and EUROCEAN programs. He has been involved in the built-up phase of the Stockholm Marine Centre as a member of the board during 1990-1991 and 1993-1998. He was responsible for coordinating the BALTEX research within SMHI (1995-2001). Since 1996 he has been a member of the BALTEX Science Steering Group, between 1997-2002 chairman of the Swedish IGBP (International Geosphere-Biosphere Programme) and WCRP (World Climate Research Programme) Subcommittee for BALTEX and 2000-2006 a member of the Swedish National Committee for the IGBP and WCRP. At SMHI he was responsible for the BALTEX Ph. D. program, which included four Ph. D. students working on atmosphere, river-runoff, and ocean modeling.

Anders Omstedt is since 2001 Professor at the University of Gothenburg, Department of Earth Sciences: Oceanography and from 2016 at Department of Marine Sciences. Earlier he was the Head of Oceanographic Research at SMHI and Visiting Professor at University of Gothenburg having an extensive experience in ocean and lake modeling. During 2007-2009 he was Deputy Head of Department of Earth Sciences at University of Gothenburg where he was involved in the reorganization of the department and responsible for research.

His main work has been oriented towards the ocean climate and the physics of ice-covered water bodies, in particularly the Baltic Sea and the polar oceans. He has developed several numerical models for cold water bodies such as rivers, lakes, estuaries, shelf seas and the polar oceans. His recent research work is oriented towards climate change and modelling of coupled physical-biogeochemical systems including the carbon cycle.

Anders Omstedt has written about 250 articles, books and book chapters, more than 100 of which have been published in reviewed international journals and books. His professional experience involves project/scientific leader for many research programs, reviewer and guest editor, chairmen and convener, invited speaker, opponent for Ph. D. thesis, member of examination committees, tutor for M. Sc and Ph. D. thesis, member of international unions and working groups.

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## **Awards and Honors:**

- Chair of the Baltic Earth Working Group on Philosophical Views of Baltic Earth and Science, 2023-
- Member and mentor in Expert Panel on the reaccreditation of the University Postgraduate (Doctoral) Programme *Oceanology* University of Zagreb, Faculty of Science, Croatia, April 2018.

- Member and mentor in Expert Panel on the reaccreditation of the University Postgraduate (Doctoral) Programme *Applied Marine Sciences* University of Split, Faculty of Science, Croatia, April 2018.
  - Elected member of the Faculty Board of Science, University of Gothenburg, 2009-2012.
  - Deputy Head of Department of Earth Sciences, University of Gothenburg, 2006-2009.
  - Deputy Head of Department of Earth Sciences, University of Gothenburg, 2012-2015
  - Member of BALTEX Science Steering Group and Co-Chair of BALTEX, 1995-2013
  - Member of the Baltic Earth Science Steering Group, 2014-2017
  - Member of the Baltic Earth Senior Advisory Board, 2018-
  - Certificate of Excellence in recognition of outstanding achievements for the Baltic Earth and BALTEX science communities, June 2016
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### **Project/scientific leader of major research programs:**

- Commercial shipping as a source of acidification in the Baltic Sea. Together with David Turner, Ida-Maja Hasselöv, Angela Wulff, Anna Rutgersson. FORMAS, 2013-2016.
- BONUS/Baltic-C program. Coordinator and principal investigator. 2009-2011.
- Modelling carbon dioxide in the Baltic Sea from pre-industrial times to the present and into the future (AD1500-2100). The Swedish Research Council, 2007- 2012
- EUR-OCEANs (European Network of Excellence for Ocean Ecosystems Analysis). Principal investigator. The Sixth Framework Programme for Research and Technological Development of the European Communities (FP6). 2005--2008
- Geosphere Dynamics; especially the Baltic Sea water and mass transport. Göteborg University and Swedish Natural Science Research Council. 2001-10-01--
- The climate sensitivity of sea ice. Research related to sea ice in the Baltic Sea and climate. Financed by the Swedish and Finnish Winter Navigation Research Board. 2000-2001.
- SMHI's part in: Salinity change in the Baltic Sea during the last 8500 years and during the coming 10 000 years. Financed by SKB, 1999-2000.
- SMHI's part in: Pilot study of Evaporation and Precipitation in the Baltic Sea (PEP in BALTEX): A field experiment of BALTEX, financed by EU-MAST III, 1997-2000.
- SMHI's part in: Baltic Air-Sea-Ice Study (BASIS): A field experiment of BALTEX, financed by EU-MAST III, 1997-2000.
- Coordinating the SMHI's part within the BALTEX research, 1995-2001
- SMHI's part in: Ice formation and the influence of ice-coverage on the circulation in the Baltic Sea, Part of the BASYS project financed by EU-MAST III, 1996-1999.
- The role of sea ice in the climate system. NFR, 1995/96-1998.
- Modeling of inflow and dense bottom water mixing in non-tidal seas and Great Lakes. NFR, 1993/94-94/95.
- The thermohaline circulation in the Gulf of Bothnia. Financed by the Swedish Environmental protection Agency, 1990/91-91/92.

- The oceanographic conditions in ice covered seas - three model studies. Financed by NFR, 1990/91-92/93.
  - On the thermal and dynamic control of an ice cover in semi-enclosed seas. Financed by NFR, 1988/89.
  - Model computations of bottom boundary currents related to the Baltic Sea. Financed by the Natural Sciences Research Council (NFR), 1987/88.
  - Forecasting sea ice. Research related to operational forecasting of sea ice in the Baltic Sea. Financed by the Swedish and Finnish Winter Navigation Research Board. 1983-1996.
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### **Reviewer and guest editor in the following journals/books:**

- Editor in Oxford Research Encyclopedia of Climate Change, 2016 - 2022
  - BACC II Author Team (2015). Second Assessment of Climate Change for the Baltic Sea basin. Springer Regional Climate Studies. ISSN 1862-0248 ISSN 1865-505X (electronic). ISBN 978-3-319-16005-4 ISBN 978-3-319-16006-1 (eBook). DOI 10.1007/978-3-319-16006-1. Springer Cham Heidelberg New York Dordrecht London.
  - Editorial Board of OCEANOLOGIA, 2014 -
  - Limnology and Oceanography
  - BACC Author Team (2008) Assessment of climate change for the Baltic Sea basin. Series: Regional Climate Studies. ISBN: 978-3-540-72785-9. Springer-Verlag.
  - BACC Group (2007) "BALTEX assessment of climate change for the Baltic Sea basin", Springer-Verlag
  - Global and Planetary Change
  - FORMAS Fokuserar 9: Österjön – hot och hopp. ISBN 91-540-5970-4. FORMAS, Stockholm, Sweden
  - Boreal Environment Research
  - Continental Shelf Research
  - Cold Regions Science and Technology
  - German Journal of Hydrology
  - Geophysica (Editorial Board, 2001-)
  - Journal of Geophysical Research
  - Journal of Marine Systems
  - Journal of Fluid Mechanics
  - Journal of Physical Oceanography
  - Journal of Sea Research (Guest editor)
  - Meteorologische Zeitschrift
  - Nordic Hydrology
  - Oceanologica Acta
  - Tellus
  - The Netherlands Journal of Sea Research
-

### **Chairman, convener or invited speaker:**

- Keynote speaker during 3<sup>rd</sup> Baltic Earth Conference. Earth system changes and Baltic Sea Coasts. Jastarnia, Hel Peninsula, Poland, 1-5 June 2020. Via internet.
- Member of the Science Conference Committee for 3<sup>rd</sup> Baltic Earth Conference. Earth system changes and Baltic Sea Coasts. Jastarnia, Hel Peninsula, Poland, 1-5 June, 2020.
- Member of the Science Conference Committee for 2<sup>nd</sup> Baltic Earth Conference. The Baltic Sea Region in Transition. Helsingør, Denmark, 11-15 June, 2018.
- Over aching talk: "The development of climate science of the Baltic Sea region" during 2<sup>nd</sup> Baltic Earth Conference. The Baltic Sea Region in Transition. Helsingør, Denmark, 11-15 June, 2018.
- Invited speaker: A Doctoral Students Conference: Challenges for Earth system sciences in the Baltic Sea region: From measurements to models. University of Tartu and Vilsandi Island, Estonia, 10-14 August, 2015.
- Invited speaker: 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.
- Co-convener during EGU General Assembly 2015. Vienna Austria 12-17 April. Climate change assessments for the Baltic and North Sea regions: Observations, model projections and impacts. Convener: Marcus Reckermann. Co-Conveners: Corinna Schrum, Markus Quante, Anders Omstedt
- Co-chairmen of BACC II (BALTEX Assessment of Climate Change for the Baltic Basin) Invited Speaker University of Szczecin, Poland. "Baltic Sea past, present and future marine system". 15 march 2010.
- Invited speaker "Dissent is the Motor of Further Development". Scientific Symposium on the Occasion of the 60th Birthday of Prof. Hans von Storch, October 16, 2009, Hamburg, Germany.
- Invited speaker 7th Baltic Sea Science Congress 2009, August 17-21, 2009, Tallinn, Estonia.
- Invited speaker ICCMI 2008-Impact of Climate Change on the Maritime Industry, June 2-4, Malmö, Sweden.
- Chairman during Assessment of Climate Change for the Baltic Sea Basin-The BACC Project. International Conference. Göteborg, Sweden, 22-23 May, 2006.
- Invited speaker during ESF/COST workshop on "Ocean climate around Europe" 20 -21 January, 2005. Title: Monitoring programs needed for detection of ocean climate change.
- Chairman during the third MUSCAD (Multi-proxi Studies of Climate Anno Domini) Göteborg, 2004.
- Chairman and Invited speaker during The Fourth Study Conference on BALTEX, Gudhjem, Bornholm, 24-28 May, 2004.
- Chairman of the Appointments Committee for Geosciences at Göteborg University, 2003-
- Invited speaker for the Tvärminne Zoological Station Celebrating its 100th anniversary. September 18-21, 2002. Title: Knowledge gained about the Baltic Sea from the BALTEX program.
- The program and organization Committee of the Fourth Workshop on the Baltic Sea Ice Climate, Norrköping, Sweden, 22-24 Mai, 2002.
- Co-convener 24th General Assembly of the EGS, the Hague, 19-23 April 1999.

- Chairman during The Second Study Conference on BALTEX, Rugen, Germany, May, 1998.
  - European Geophysical Society, Vienna 1997.
  - Chairman of the Second Workshop on the Baltic Sea Ice Climate, Otepää, Estonia, 2-5 Sept., 1996.
  - The First Workshop on the Baltic Sea Ice Climate, Tvärminne, Finland, 1993
  - European Geophysical Society, Copenhagen, 1990
  - Conference of the Baltic Oceanographers, Norrköping, 1990
  - International Association for Hydraulic Research, Helsinki, 1990
  - Symposium on the Marine Environment, Linköping, 1986
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### **Appointed faculty opponent or evaluator for following Ph. D., and licentiate thesis:**

- Amna Salah El-Din Mohammed Ali Dabbous. Alexandria University, Egypt. External reviewer for Ph.D. thesis in oceanography. 2020.
  - Jari Uusikivi, 2013. On optical and physical properties of sea ice in the Baltic Sea. Ph D thesis University of Helsinki, Finland.
  - Marius Årthun, 2011. Water mass transformations and air-sea exchange in the Barents Sea. University of Bergen, Norway.
  - Mats Granskog 2004. Investigations into the Physical and Chemical Properties of Baltic Sea Ice. Department of Geophysics, University of Helsinki. Ph. D thesis March 6, 2004.
  - Bin Chen, 2002. On the modelling of sea ice thermodynamics and air-ice coupling in the Bohai Sea and the Baltic Sea. Department of Geophysics, University of Helsinki. Ph. D thesis May 8, 2002.
  - Zhanhai Zhang, 2000. On modelling ice dynamics of semi-enclosed seasonally ice-covered seas. Department of Geophysics, University of Helsinki. Ph. D. thesis September 8, 2000.
  - Lars Henrik Smedsrud, 2000. Frazil ice formation and incorporation of sediments into sea ice in the Kara Sea. Geophysical Institute, Bergen University. Ph. D. thesis.
  - Madleine Carlsson, 1997. Sea level and salinity variations in the Baltic Sea. An oceanographic study using historical data. Department of Oceanography, Gothenburg University. Ph. D. thesis.
  - Lars Hammar, 1994. Frazil ice evolution in open channels. Luleå University of Technology. Tech. Licentiate thesis.
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### **Member of the following boards, working groups and societies:**

- Member of Baltic Earth Science Senior Advisory Board (BESAB, <https://www.baltic-earth.eu/organisation/besab.html>), 2013-

- Member of Baltic Earth Science Steering Group (BESSG; <http://www.baltic-earth.eu/organisation/bessg.html>), 2014-2018
- Member of Conference Committees for 1<sup>st</sup> Baltic Earth Conference: Multiple drivers for Earth system changes in the Baltic Sea region. Nida, Curonian Spit, 13-17 June, 2016.
- Member of the Conference Committee for the 9<sup>th</sup> Baltic Sea Congress, 26-30 August, 2013, Klaipeda, Lithuania.
- Member of the Conference Committee and organisation Committee for the 7<sup>th</sup> Study Conference on BALTEX, Borgholm, Island of Öland, Sweden, 10-14 June 2013.
- Member of the International Conference on Assessment of Climate Change for the Baltic Sea Basin, Tallinn, Estonia, 6-7 September, 2012.
- Member of Conference Committee for the 8th Baltic Sea Science Congress on August 22-26, 2011 in St.Petersburg, Russia.
- Member of Conference Committee for 6th Study Conference on BALTEX. Miedzyzdroje Island of Wolin, Poland, 14-18 June 2010.
- Member of the Advisory Committee of Forum Östersjön, 2009 -
- Member of the organization committee for the International Advanced PhD Course on: Climate impact on the Baltic Sea from science to policy. 27 July-5 August, 2009, Nexö, Bornholm, Denmark.
- Member of Scientific Advisory Committee for the 6th Workshop on Baltic Sea Ice Climate, August 25-28, 2008. Lammi Biological Station, Finland.
- Member of Conference Committee for 5th Study Conference on BALTEX. Kuressaare, Saaremaa, Estonia, 4-8 June 2007.
- Member of the science steering committee for the Baltic Sea Science Congress, Rostock, Germany, March 19-13, 2007.
- Elector for forming the new board at the Swedish Research Council, 2006.
- Working group forming new board at the Faculty of Science at Göteborg University, 2005.
- The scientific committee of the fifth Workshop on the Baltic Sea Ice Climate, Hamburg, Germany, 2005.
- The scientific committee of the Baltic Sea Science Congress 2005 in Sopot, Poland.
- Co-chair person for the Workshop: Climate variations in Sweden During the Past 2000 Years. SMHI, 2005.
- The organization committee for the Workshop: Climate variations in Sweden During the Past 2000 Years. Göteborg University, 2004.
- The organization committee for the Workshop: Climate variations in Sweden During the Past 2000 Years. Uppsala University, 2003.
- The organization committee for the Workshop: Climate variations in Sweden During the Past 2000 Years. Stockholm University, Nov 6-8, 2002.
- SWECLIM-MARE workshop on Processes of importance for the large-scale salinity distribution of a semi-enclosed sea such as the Baltic at Kristineberg, Sweden, 4-6 November, 2002.
- The scientific program committee of the Fourth Study Conference on BALTEX, Bornholm, Denmark, 2004.
- The program and organization committee of the Fourth Workshop on the Baltic Sea Ice Climate, Norrköping, Sweden, 22-24 May, 2002.



- The organisation committee for Climate and Ozone: Programme Conference, Bergen, 27-29 November, 2001.
- The scientific program committee of the Third Study Conference on BALTEX, Mariehamn, Åland, 2-6 July, 2001.
- BALTEX Working Group of Energy and Water Cycles 1998-2005
- KLIMAProg (the Norwegian Climate Program) board 2001-2002.
- The Swedish national committee for the IGBP and WCRP, 2000-
- Advisory board for the Baltic Sea Science Congress 2001 and 2003.
- The BALTEX/BRIDGE Task Force, 1998-
- The scientific program committee of the Second Study Conference on BALTEX, Rugen, Germany, May 25-29, 1998.
- Chairmen of the Swedish IGBP-WCRP Subcommittee for BALTEX, 1997-
- The Scientific Steering Group of BALTEX, 1996 -
- The program and organization committee of the Second Workshop on the Baltic Sea Ice Climate, Otepää, Estonia, 2-5 Sept., 1996.
- The Swedish IGBP - WCRP Subcommittee for BALTEX, 1993 – 1997.
- The scientific and local organization committee of the First Study Conference on BALTEX, Visby, Sweden, Aug. 28- Sept. 1, 1995.
- The scientific and local organizing committees of an Advanced Study Institute School: "Physics of Ice-covered Seas, Savonlinna, Finland, 1994", 1992-1994.
- The International Association for Hydraulic Research, Committee on Ice Problems, 1992 – 1996.
- The evaluation commission of the Marine Research in Estonia, 1991 – 1992.
- The board of Stockholm Marine Research Center, 1990 - 1991, 1993 -1998.
- The International Association for the Physical Sciences of the Ocean (IAPSO) Commission on Sea Ice, 1987 – 1997.
- The International Association for Hydraulic Research, Working Group on the Thermal Regime of Water Bodies, 1986 – 1996.
- The Swedish Geophysical Society.
- The European Geophysical Society.
- The American Geophysical Union.
- The Swedish Marine Society.

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**Member of examining committee for the following Ph. D. thesis, associate professor and post-doctoral positions:**

- Hongxing He, Ph D planned to 2015, Göteborg, Sweden.
- Johanna Linders, PhD planned to 2015, Göteborg, Sweden.
- Peng Zhang, pH D 2015, Göteborg, Sweden.
- Jesper Björklund PhD 2014, Göteborg, Sweden.
- Selma Pacariz, PhD 2013, Göteborg, Sweden.
- Thinghai Ou, Ph D, Göteborg, Sweden.
- Cecilia Bennet, Ph D., Göteborg, Sweden, 2009.

- Lin Tang, Ph D., Göteborg, Sweden, 2009.
- Johan Burman, Ph. D., Göteborg, Sweden, 2006.
- Christine Aschberger, Ph. D., Göteborg, Sweden, 2004.
- Mikkel Sanders, Ph. D., Lund, Sweden, 2003.
- Cecilia Johansson, Ph. D., Göteborg, Sweden, 2003.
- Anna Sjöblom, Ph.D., Uppsala, Sweden, 2002.
- Karin Gustafsson, Ph. D., Göteborg, Sweden, 2002.
- Bengt Liljebladh, Ph. D., Göteborg, Sweden, 2000.
- Charlotta Pers, Ph. D., Linköping, Sweden, 2000.
- Evaluation of postdoctoral position in Oceanography, University of Gothenburg, Sweden, 2000.
- Bo Gustafsson, Ph. D., Göteborg, Sweden, 1997.
- Göran Björk, Ass. Prof., Göteborg, Sweden, 1997.
- Annika Andersson, Ph. D., Luleå, Sweden, 1997.
- Johan Mattson, Ph. D., Göteborg, Sweden, 1996.
- Lars Rydberg, Ass. Prof, Göteborg, Sweden, 1996.
- Elias Valur Holm,, Ph. D., Stockholm, Sweden, 1994.
- Johan Rodhe, Ph. D., Göteborg, Sweden, 1992.
- Bertil Håkansson , Ph. D., Göteborg, Sweden, 1990.

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### **Tutor for the following thesis:**

- Moa Edman, PhD Thesis, Modelling the Dissolved Inorganic Carbon System in the Baltic Sea, Department of Earth Sciences, University of Gothenburg, 2013, <https://gup.ub.gu.se/publication/184857>
- Johannes Johansson, Master of Science. Characterizing the surface accumulation of cyanobacteria in the Baltic Sea using remote sensing and in situ data during the period 2002-2014. Department of Earth Sciences, University of Gothenburg, 2015 B883.
- Irene Wählström, PhD Thesis. Fluxes and transformation of Carbon in the Siberian Shelf Sea under changing Environment. University of Gothenburg, Department of Chemistry and Molecular Biology. 2012. Together with Leif Anderson (Main supervisor) and Göran Björk.
- Karin Wesslander, PhD Thesis. The Carbon Dioxide Systems in the Baltic Sea Surface Waters. University of Gothenburg, 2010. Doctoral thesis No. A 137.
- Victor Veiderpass, Master thesis in Oceanography. The Swedish oceanographic expedition 1877 lead by F.L. Ekman: Climate characterization of the Baltic Sea-Kattegat marine system, based on field observations, SST-series and model data. University of Gothenburg, 2011.
- Erik Gustafsson, PhD Thesis. The Baltic Sea Marine System: Human impact and natural variations. University of Gothenburg, 2010. Doctoral thesis No. A 133.
- Daniel Hansson, PhD Thesis. Ocean Climate Variability over Recent Centuries Explored by Modelling the Baltic Sea. University of Gothenburg, 2009. Doctoral thesis No. A 125.

- Jessica Ask. Master of Science. Monitoring strategies for climate change detection: Statistical assessment of marine data. University of Gothenburg, 2009.
- Christin Ericsson. PhD thesis. Characterizing and reconstructing 500 years of climate in the Baltic Sea Basin. University of Gothenburg, 2009
- Christian Nohr PhD thesis. Oceanographic studies of the Baltic Sea with emphasis on sea ice and mixing processes. University of Gothenburg, 2009 Together with Bo Gustafsson (Main supervisor) and Göran Björk.
- Emilia Lalander. Master of Sciences. Surface water circulation in the Panama Bight- Influence on the circulation around the Island Gorgona Thesis for Master of Sciences, Göteborg University, 2006.
- Leandra Caldarulo. Master of Sciences. Can the different coral reef distribution around Gorgona Island, Colombian Pacific be explained by differences in temperature? Thesis for Master of Sciences, Göteborg University, 2006.
- Johanna Nilsson. Master of Sciences. Does the deep-water temperature in the Gullmar Fjord reflect the Nordic climate? Thesis for Master of Sciences, Göteborg University, 2005.
- Martin Hansson. Monitoring and Prediction of Algal Blooms in the Baltic Sea- Using Satellite Data and a Fuzzy Logic Model for Cyanobacterial Blooms. Thesis for Master of Sciences, Göteborg University, 2004.
- Emma Pettersson. How well does HIROMB simulate temperature and salinity in the Kattegat? Thesis for Master of Sciences, Göteborg University, 2003.
- Karin Wesslander. Are the Nordic Seas Cooling? Thesis for Master of Sciences, Göteborg University, 2003.
- Martin Hansson, Can satellite SMMR and SSM/I data improve ice mapping over the Baltic Sea? A 10 weeks project at Department of Oceanography, Göteborg University.
- Lars Axell. Turbulent mixing in the ocean with application to Baltic Sea modeling. Ph. D. thesis in Oceanography, Göteborg University, 2001.
- Anna Rutgersson. Water and Heat Exchange Processes over the Baltic Sea. Ph. D. thesis in Meteorology, Uppsala University, 2000.
- Ola Nordblom. Numerical simulation of the atmospheric surface layer. Master's Thesis, Luleå University of Technology, 1997:351 CIV, 1997.

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## Teaching and examination:

- Oceanographic models (Oceanografiska Modeller, OC6310) a 10 weeks course at Earth Sciences, University of Gothenburg, 2013.
- Geophysical Fluid Dynamics a 10 weeks course at Earth Sciences University of Gothenburg, 2012-2013
- Oceanographic models (Oceanografiska Modeller, OC6310) a 10 weeks course at Earth Sciences: Oceanography, University of Gothenburg, 2011.
- Co-organizer and lectures for Advanced PhD course: Climate impacts on the Baltic Sea- from science to policy, 27 July to 5 August, Bornholm, Denmark. 2009.

- Oceanographic models (Oceanografiska Modeller, OC6310) a 10 weeks course at Earth Sciences: Oceanography, University of Gothenburg, 2009.
- Responsible for organizing the PhD education within Earth System Science at the University of Gothenburg, 2008-
- Examination of Sofia Åström Master Thesis: Modelling the effects of horizontal density gradients on wind driven surface mixed layers. 2009.
- PhD Course in Process oriented numerical modelling of lakes, coastal seas and oceans a 10 weeks course at the Earth Sciences Centre: Oceanography, University of Gothenburg, 2008
- Geophysical Fluid Dynamics a 5 weeks course in Ocean Models II at the Earth Sciences Centre: Oceanography, University of Gothenburg, 2007
- Geophysical Fluid Dynamics a 5 weeks course in Ocean Models II at the Earth Sciences Centre: Oceanography, University of Gothenburg, 2006
- Geophysical Fluid Dynamics a 5 weeks course in Ocean Models II at the Earth Sciences Centre: Oceanography, University of Gothenburg, 2005.
- Ph. D. Course in ocean and lake modeling. Earth Sciences Centre, University of Gothenburg, 2004.
- Ph. D. Course in ocean and lake modeling. Earth Sciences Centre, University of Gothenburg, 2002.
- Examination of Ph.D. students in Physics of Sea Ice. Earth Sciences Centre, University of Gothenburg, 2000.
- Ph. D. Course in ocean and lake modeling. Earth Sciences Centre, University of Gothenburg, 1998.
- Invited teacher during a summer school in Maratea, Italy. Lecture topic: Forecasting Ice on Lakes, Estuaries and Shelf Seas. Organized by NATO Advanced Science Study Institute, 1998.
- Invited teacher during a summer school in Savonlinna, Finland. Lecture topic: Freezing Estuaries and Semi-Enclosed Basins. Organized by IAPSO (International Association for Physical sciences of the Ocean), 1994.
- Dynamic Oceanography, SMHI, Norrköping, Sweden, 1977-1979.
- Introduction courses in oceanography and sea ice at SMHI, Norrköping, Sweden, 1975-1986

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## **Publications: Articles in reviewed scientific journals:**

- Omstedt, A. (2023). How to develop an understanding of the marginal sea system by connecting natural and human sciences. *Earth System Change Changes in Marginal Seas/Oceanologia*. Volume 65, Issue 1, January–March 2023, Pages 20-29.
- Omstedt, A. and von Storch, H. (2023). The BALTEX/Baltic Earth programs: Excursions and returns. Submitted
- Omstedt, A., and Gustavsson, B. (2022a). The ocean: Excursion and return. *Filosofia*, (67). <https://doi.org/10.13135/2704-8195/7241>

- Omstedt, A. and Gustavsson, B. (2022b). The complex interactions between humans and the marine environment require new efforts to build beauty and harmony. *Front. Mar. Sci.* 9:913276. doi: 10.3389/fmars.2022.913276
- Reckermann, M., Omstedt, A., Soomere, T., Aigars, J., Akhtar, N., Bełdowska, M., Bełdowski, J., Cronin, T., Czub, M., Eero, M., Hyytiäinen, K. P., Jalkanen, J.-P., Kiessling, A., Kjellström, E., Kuliński, K., Larsén, X. G., McCrackin, M., Meier, H. E. M., Oberbeckmann, S., Parnell, K., Pons-Seres de Brauwer, C., Poska, A., Saarinen, J., Szymczycha, B., Undeman, E., Wörman, A., and Zorita, E.(2022): Human impacts and their interactions in the Baltic Sea region. *Earth Syst. Dynam.*, 13, 1–80, 2022 <https://doi.org/10.5194/esd-13-1-2022>.
- Omstedt, A. (2021). How to develop an understanding of the marginal sea system by connecting natural and human sciences. *Oceanologia*. <https://doi.org/10.1016/j.oceano.2021.06.003>. Available online 14 July 2021.
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