

Curriculum Vitae - Peter M. Haugan

Name: Peter M. Haugan
Address: Nansen Environmental and Remote Sensing Center (www.neresc.no),
Thormøhlensgate 47, N-5006 Bergen, Norway
E-mail: Peter.Haugan@neresc.no
Date of birth: 28 July 1958
Nationality: Norwegian
Family: Married, two children.
Position: Director, Nansen Environmental and Remote Sensing Center (NERSC)
and professor II at the Geophysical Institute, University of Bergen
(www.gfi.uib.no)
Education: Dr. philos at University of Bergen 1999, University pedagogical
training 1999, Cand. real in applied mathematics at University of
Bergen 1982, Norwegian military service 1977 and high school 1976.

Previous employment:

2003-2011: Director/head of the Geophysical Institute, University of Bergen
2011: September through December: Research director II at NERSC
2000-2003: Vice-director of the Bjerknes Centre for Climate Research
1999- Professor of physical oceanography at the Geophysical Institute
1997-1999: Associate professor of polar oceanography at the University Courses
on Svalbard (www.unis.no)
1996-1997: Senior scientist at the Geophysical Institute and adjunct senior scientist
(Norwegian "bistilling") at Institute of Marine Research (www.imr.no)
1987-1995: Senior scientist (1987-1989), research leader (1989-1993), research
director and assistant director (1993-1995) at the Nansen
Environmental and Remote Sensing Center (www.neresc.no).
1982-1987: Research engineer and project leader in the Numerical Modelling
Dept., Reservoir Section, Norsk Hydro Research Centre, Bergen.

Fields of interest and present research activities:

Research interests focus on high latitude ocean climate processes including physical processes that affect carbon cycling and ocean carbon storage. Related to these there have been a range of activities which are continuing fields of interest:

- Physical oceanographic field work in the Norwegian, Greenland and Barents Seas (a prime focus from 1988 to 2003).
- Ocean climate modelling initiated at the Nansen Center contributing to building up the climate group there from 1990 to 1995.
- Supervision of master and PhD students since 1989.
- Teaching of university level courses in polar oceanography, air-sea interaction and dynamical oceanography since 1996, including extensive field courses in Spitsbergen.
- Multidisciplinary research projects with biologists and geologists.
- Ocean carbon storage and ocean acidification.

- Process oriented climate research and small scale ocean mixing research built up at the Geophysical Institute from 1999.
- Technologically advanced deep sea field work in the North Pacific and collaborative initiatives in marine measurement technology.
- Air-sea interaction research which underpins new cross-disciplinary initiatives in offshore wind energy and marine renewable energy.

In connection with the appointment to head/director of the Geophysical Institute for two 4-year periods there has been an increasing emphasis on research strategy and research planning. This encompasses:

- Experience from international science committees and panels as well as intergovernmental marine science coordination.
- Involvement in development of national and European infrastructure for marine and polar research.
- Interest in theory of science and public discourse about climate technology and climate ethics.

Membership in academic and professional committees, scientific review work including peer-review, outreach activities, and other professional merits (selected with emphasis after 2005)

- Vice-chair of the Intergovernmental Oceanographic Commission (IOC; <http://www.unesco.org/new/en/natural-sciences/ioc-oceans/>) elected for 2011-2013, National delegate for Norway to the General Assembly of from 1999 and to the Executive Council (EC) for 2005-2007, re-elected to the EC for 2007-2009.
- Member (vice-chair with responsibility for science) of the Norwegian National Committee for UNESCO 2008-2012.
- Chair of the national Norwegian Committee for the Scientific Committee on Oceanic Research (SCOR, <http://www.jhu.edu/scor/>) of the International Council for Science (ICSU) from 2005, member from 2004.
- Vice-chair of the Marine Board – European Science Foundation on behalf of the University of Bergen 2011-2014 (member since 2008).
- Invited member of The Norwegian Scientific Academy for Polar Research since its start in 2008.
- Elected member of the board of the University of Bergen 2009-2013.
- Chair of the interim board for establishing a master programme in energy at the University of Bergen and Bergen University College 2011-2012.
- Chair of the University of Bergen Strategy Board on Marine Science 2007-2010.
- Chair of the University of Bergen Working Group on High North Research 2009-11.
- Chair of the science committee of the Bergen Marine Research Cluster (www.bergenmarine.no) 2008-2011.
- Member of the ESFRI Environment Thematic Working Group on behalf of Norway 2010.
- Member of the Scientific Board of the Nansen Environmental and Remote Sensing Center in Bergen, and of the Advisory and Coordinating Board of the Nansen-Zhu Centre in Beijing, both from 2008. Member of the Nansen-Tutu Advisory Board from the startup of the Nansen-Tutu Centre in Cape Town in 2010.
- Member of the Advisory Board of the Centre for Ice, Climate and Ecosystems (ICE) at the Norwegian Polar Institute from 2009.

Member of the External Advisory Board of CliSAP (integrated Climate System Analysis and Prediction) cluster of excellence in Hamburg, Germany, since 2009.

Project leader for a major not yet funded initiative to establish Cabled Observatories for Monitoring of the Ocean System (COSMOS), a 188 MNOK infrastructure application to the Norwegian Research Council, based on the Norwegian Ocean Observatory Network (NOON).

Project leader for Norwegian Atlantic Current Observatory (NACO) a glider-based research infrastructure funded by the Norwegian Research Council 2011-2014.

Scientific leader and chair of the scientific committee of NORCOWE, a centre for environment friendly energy funded by the Norwegian Research Council and industry 2009-2017.

Member of the steering committee for the preproject phase of Norwegian Offshore Wind Energy Research Infrastructure (NOWERI), a national research infrastructure to be funded through the Norwegian Research Council.

Responsible for the University of Bergen contribution to Svalbard Integrated Arctic Earth Observing System (SIOS), an ESFRI Preparatory Phase Project funded from the EU 2010-2014.

Principal investigator in the Michelsen Centre for Research-based Innovation (CRI) funded by the Norwegian Research Council and industry 2007-2015.

Principal investigator (vice-director 2000-2003) in the Bjerknes Centre for Climate Research, a Centre of Excellence funded by the Norwegian Research Council 2002-2012. Chair of the University of Bergen internal board for climate research, named Bjerknes Centre-UiB since 2009.

Project manager of the Atmosphere-Ocean Interaction project funded by the Norwegian Research Council 2006-2010.

Principal investigator in the EU funded CARBOOCEAN project 2005-2010.

Principal investigator in the EU funded DAMOCLES project 2005-2010.

Project manager of the Current Measurements North of Svalbard (CuNoS) project funded by the Norwegian Research Council POLRES programme 2006-2009.

Principal investigator in the Svalbard Ice Ocean Interaction Studies project funded by the Norwegian Research Council POLRES programme 2007-2009.

Project manager of the Norwegian Ocean and Climate Project (NOCLim, <http://www.noclim.org/>) funded from the Norwegian Research Council Climate Research Programme 2000-2006 (Phases I and II).

Project manager of the Polar Ocean Climate Processes Project (ProClim, <http://www.gfi.uib.no/Proclim>) funded from the Norwegian Research Council Polar Climate Programme 2003-2007.

Project manager of the project "Atmosphere/Ice/Ocean Interaction Studies" funded by the Norwegian Research Council 2002-2006.

Project manager of the EU funded Bjerknes Marie Curie Training Site on the role of ice-ocean-atmosphere processes in high latitude climate change (<http://vilhelm.bjerknes.uib.no/mcts/>) 2002-2006.

Principal investigator in the EU funded IPY-CARE project 2005-2007.

Responsible organizer of International Summer School on Sea Ice in Longyearbyen July 2007 (www.seaice.info).

Chair of the science committee for the open science conference on "Polar Dynamics: Monitoring, Understanding and Prediction" in Bergen August 2007.

Member of the Scientific Steering Committee for the UK NERC Thematic Programme on Rapid Climate Change (www.nerc.ac.uk/funding/thematics/rcc/) 2001-2007.

Member of the Scientific Steering Group for the Arctic and Subarctic Ocean Fluxes Programme (ASOF, <http://asof.npolar.no/>) from 2001-2008.

Member of programme committee for the IOC/SCOR Symposia on “The ocean in a high CO₂ world” I held in Paris in 2004 and II held in Monaco in 2008.

Lead author for the Intergovernmental Panel on Climate Change (IPCC) Special Report on carbon dioxide capture and storage written during 2003-2005 (http://arch.rivm.nl/env/int/ipcc/pages_media/ccs-report.html).

Member of the IOC/SCOR CO₂ Advisory Panel (www.ioc.unesco.org/iocweb/co2panel) 2000-2005.

Member of the Scientific Steering Committee for the Joint Global Ocean Flux Study (JGOFS, <http://ads.smr.uib.no/jgofs/jgofs.htm>) 2000-2003.

Principal investigator and manager of subproject in the Ocean Abyssal Carbon Experiment (OACE) project funded by NEDO of Japan 2002-2005, and CO₂ Sinking Method for Ocean Storage (COSMOS) 1999-2001.

Member of the Technical Committee of the International CO₂ Ocean Sequestration Project (www.co2experiment.org/) 1997-2003.

Member of the Ocean Observation Panel for Climate of the Global Climate Observing System/Global Ocean Observing System (IOC/WMO/UNEP/ICSU) 1996-2002.

President of the Norwegian Geophysical Society 2000-2001 (vice president 1998-99).

Member of American Geophysical Union, European Geosciences Union, Norwegian Geophysical Society

Referee for the journals *Nature*, *J. Phys. Oceanogr.*, *J. geoph. res.*, *Geophysical Research Letters*, *Prog. Oceanogr.*, *Deep-Sea Research*, *J. Climate*, *Global Biogeochemical Cycles*, *Pol. Res.*, *Ann. Glaciology*, *Environmental Science and Technology*, for research council projects in Norway, Sweden, the Netherlands, UK and USA.

Expert reviewer for the IPCC 4th Assessment Report.

Invited expert to IPCC WGI/WGII Workshop on ocean acidification Japan, 2011.

Invited expert to IPCC WGI/WGII/WGII Workshop on geoengineering, Peru, 2011.

Served as PhD thesis opponent in Norway, Sweden, Denmark and France.

Supervised 15 PhD students and 10 master students:

PhD students:

Geir Evensen (1992, NERSC/Dept. of Mathematics): Data Assimilation Using the Extended Kalman Filter with a Multilayer Quasi-Geostrophic Ocean Model.

Helge Drange (1994, NERSC/Dept. of Mathematics): An Isopycnic Coordinate Carbon Cycle Model for the North Atlantic; and the Possibility of Disposing of Fossil Fuel CO₂ in the Ocean.

Knud Simonsen (1996, NERSC/Geophysical Institute): Heatbudgets and freshwater forcing of the Nordic Seas and the Arctic Ocean.

Guttorm Alendal (1996, NERSC/Dept. of Mathematics): Implementation and testing of different gravity current models with application to oceanic and man-made currents.

Kjetil Lygre (1996, NERSC/Geophysical Institute): A Numerical Modelling Study of the Circulation of the North Atlantic and Arctic Oceans.

Jørg Haarpaintner (2001, University of Paris/NPI/UNIS): Brine formation through ice production in Storfjorden, Svalbard, estimated by ERS-2 SAR imagery and simple ice drift and formation models.

Tuomo Saloranta (2001, Geophysical Institute): The Sea West of Svalbard: Structures, Trends and Variability in Hydrography.

- Randi Ingvaldsen (2003, Institute of Marine Research/Geophysical Institute): Atlantic Inflow to the Barents Sea.
- Ragnheid Skogseth (2003, UNIS/Geophysical Institute): Dense Water Production and Circulation in Storfjorden, Svalbard.
- Hjalmar Hatun (2004, Faroese Fisheries Laboratories/Geophysical Institute): The Faroe Current.
- Karolina Widell (2007, Geophysical Institute/UNIS/NPI): Atmosphere-Ice-Ocean Interaction Processes.
- Florian Geyer (2010, Nansen Center/Geophysical Institute): Overflow and topographically induced mixing on the Svalbard shelf.
- Gisle Nondal (2010, Mohn-Sverdrup Center/Geophysical Institute): A Study of the High and Mid Latitude Biogeochemistry in the Atlantic Ocean: the influence of surface processes.
- Kristin Rygg (2011, Bergen Centre for Computational Science/Geophysical Institute): Modeling topographic effects on transport of tracers in the bottom boundary layer using RANS-models.
- Sara de la Rosa (2011, Geophysical Institute/Nansen Center): Temporal changes of sea ice affected by waves and thermal forcing.

Master students:

- Anne Britt Sandø (1992, Dept. of Mathematics): Tidal velocities under sea ice.
- Leif Gunnar Sandtorv (1997, Dept. of Mathematics): On stability of CO₂ droplets.
- Tuomo Saloranta (1998, Univ. Helsinki, co-superv. UNIS): On the role of snow and snow ice in sea ice thermodynamic modelling.
- Tor-Villy Kangas (2000, co-superv. UNIS): Seasonal variations in an Arctic fjord.
- Karina Hjelmervik (2003): On cold droplets of CO₂ in seawater.
- Elin Darelius (2003): Exchange and thermodynamics in an Arctic fjord.
- Anders Sirevaag (2003): Turbulence and heat exchange under ice.
- Reidun Gangstø (2004): Analysis and modeling of single CO₂ drops in the ocean.
- Kristin Richter (2005): Turbulent ocean mixing.
- Julianne Büttner (2011): Permeability of young sea ice from microtomographic images.

Selected publications in referee journals and books:

- Nondal, G., **P. M. Haugan**, K. S. Seim, and R. G. J. Bellerby, 2011: Climate Science: The New Frontier, *submitted to Climatic Change*.
- Rygg, K., G. Alendal and **P.M. Haugan** 2011. Flow over a rounded backward-facing step, comparing a z-coordinate and a σ -coordinate model. *Accepted in Ocean Dynamics*.
- Haugan, Peter M.** 2010a. Observatories for Understanding Arctic Change. In Climate Change and Arctic Sustainable Development, UNESCO Press 2010, p. 303-308.
- Orr, James C., Ken Caldeira, Victoria Fabry, Jean-Pierre Gattuso, **Peter Haugan**, Patrick Lehodey, Silvio Pantoja, Hans-Otto Pörtner, Ulf Riebesell, Tom Trull, Ed Urban, Maria Hood, Wendy Broadgate 2009. Research Priorities for Understanding Ocean Acidification: Summary from the Second Symposium on the Ocean in a High-CO₂ World. *Oceanography Magazine*.
- Haugan, Peter M.** 2009. Communicating scientific uncertainty for decision making about CO₂ storage. In NATO-ASI Series. Edited by Baveye et al.

- Enstad, L.I., K. Rygg, **P.M. Haugan**, G. Alendal 2008. Dissolution of a CO₂ lake, modeled by using an advanced vertical turbulence mixing scheme. *Int. Journ. Greenhouse Gas Control* 2 (2008), 511-519.
- Caldeira, Ken, David Archer, James P. Barry, Richard G.J. Bellerby, Peter G. Brewer, Long Cao, Andrew G. Dickson, Scott C. Doney, Harry Elderfield, Victoria J. Fabry, Richard A. Feely, Jean-Pierre Gattuso, **Peter M. Haugan**, Ove Hoegh-Guldberg, Atul K. Jain, Joan A. Kleypas, Chris Langdon, James C. Orr, Andy Ridgwell, Christopher L. Sabine, Brad A. Seibel, Yoshihisa Shirayama, Carol Turley, Andrew J. Watson, Richard E. Zeebe 2007. Comment on "Modern-age buildup of CO₂ and its effects on seawater acidity and salinity", Vol. 34, L18608, doi:10.1029/2006GL027288, 2007 *Geophysical Research Letters*.
- Widell, K., I. Fer, and **P. M. Haugan** 2006. Salt release from warming sea ice. *Geophys. Res. Lett.*, 33, L12501, doi:10.1029/2006GL026262.
- Alendal, G., **P.M. Haugan**, R. Gangstø, K. Caldeira, E. Adams, P. Brewer, E. Peltzer, G. Rehder, T. Sato and B. Chen 2006. Comment on "Fate of Rising CO₂ Droplets in Seawater", *Environmental Science and Technology*, 40(11), 3653-3654.
- Caldeira, K., M. Akai, P. Brewer, B. Chen, **P. Haugan**, T. Iwama, P. Johnston, H. Kheshgi, Q. Li, T. Ohsumi, H. Poertner, C. Sabine, Y. Shirayama, J. Thomson, 2005: Ocean storage. p. 277-318 in: IPCC, 2005: IPCC Special Report on Carbon Dioxide Capture and Storage. Prepared by Working Group III of the Intergovernmental Panel on Climate Change [Metz, B., O. Davidson, H. C. de Coninck, M. Loos, and L. A. Meyer (eds.)]. Cambridge University Press, Cambridge, United Kingdom and New York, NY, USA, 442 pp. ISBN-13 978-0-521-86643-9.
- Peter M. Haugan**, Peter G. Brewer, Edward T. Peltzer III, Peter Walz, Izuo Aya, Kenji Yamane, Ryuji Kojima, Yasuharu Nakajima, Noriko Nakayama, Joakim Hove, Truls Johannessen, Richard G.J. Bellerby, Guttorm Alendal 2005. Ocean abyssal carbon experiments at 0.7 and 4 km depth. In, E.S.Rubin, D.W.Keith and C.F.Gilboy (Eds.): *Greenhouse Gas Control Technologies. Volume 1: Peer-Reviewed Papers and Overviews*, Elsevier ISBN: 0-080-4481-X, 801-808.
- R. Skogseth, I. Fer and **P.M. Haugan** 2005. Dense-Water Production and Overflow From an Arctic Coastal Polynya in Storfjorden. In: *The Nordic Seas - An Integrated Perspective*. Washington, DC: American Geophysical Union (AGU) ISBN 0-87590-423-8, 73-88.
- Peter M. Haugan** and Guttorm Alendal 2005. Turbulent diffusion and transport from a CO₂ lake in the deep ocean. *J. geoph. res.* 110, C09S14, doi:10.1029/2004JC002583.
- Reidun Gangstø, **Peter M. Haugan** and Guttorm Alendal 2005. Parameterization of drag and dissolution of rising CO₂ drops in seawater. *Geophysical Research Letters*. Vol. 32, L10612, doi:10.1029/2005GL022637, 2005
- Joakim Hove and **Peter M. Haugan** 2005. Dynamics of a CO₂-seawater interface in the deep ocean. *J. Mar. Res.* May 2005, vol. 63, no. 3, pp. 563-577(15).
- Brewer, P.G., E.T. Peltzer, P. Walz, I. Aya, K. Yamane, R. Kojima, Y. Nakajima, N. Nakayama, **P. M. Haugan**, T. Johannessen. 2005. Deep Ocean Experiments with fossil fuel carbon dioxide: creation and sensing of a controlled plume at 4 km depth. *J. Mar. Res.*, 63, 9-33.
- R. Skogseth, **P.M. Haugan** and M. Jakobsson 2005. Watermass transformations in Storfjorden. *Cont. Shelf Research* 25, 667-695.

- Cicerone, R., J. Orr, P. Brewer, **P. Haugan**, L. Merlivat, T. Ohsumi, S. Pantoja and H.-O. Poertner 2004. The Ocean in a High CO₂ World. *EOS Trans. AGU* 85 (37), 351-353.
- Cicerone, R., J. Orr, P. Brewer, **P. Haugan**, L. Merlivat, T. Ohsumi, S. Pantoja and H.-O. Poertner, M. Hood and E. Urban 2004. The Ocean in a High CO₂ World. *Oceanography* 17(3), 72-78.
- R. Skogseth, **P.M. Haugan** and J. Haarpaintner 2004. Ice and Brine Production in Storfjorden From Four Winters of Satellite and in Situ Observations. *J. geoph. Res.* 109, C10008, doi:10.1029/2004JC002384.
- Hjálmar Hátún, Bogi Hansen and **Peter M. Haugan** 2004. Using an “Inverse Dynamic Method” to Determine Temperature and Salinity Fields from ADCP Measurements. *Journal of Atmospheric and Oceanic Technology* 21(3), 527-534, doi: 10.1175/1520-0426(2004)021.
- Brewer, P.G., Peltzer, E., Aya, I., **Haugan, P.M.**, Bellerby, R., Yamane, K., Kojima, R., Walz, P., Nakajima, Y. 2004: Small scale field study of an ocean CO₂ plume. *Journal of Oceanography*, Vol. 60, 751-758.
- Peter M. Haugan** and Fortunat Joos 2004. Metrics to assess the mitigation of global warming by carbon capture and storage in the ocean and in geological reservoirs. *Geophysical Research Letters* 31, L18202, doi:10.1029/2004GL020295.
- T. M. Saloranta and **P.M. Haugan** 2004. Northward cooling and freshening of the warm core of the West Spitsbergen Current. *Pol. Res.*, 79-88, 23(1).
- I. Fer, R. Skogseth and **P.M. Haugan** 2004. Mixing of the Storfjorden (Svalbard Archipelago) overflow inferred from density overturns. *J. geoph. res.* Vol. 109, C01005, doi:10.1029/2003JC001968
- I. Fer, R. Skogseth, **P.M. Haugan** and P. Jaccard 2003. Observations of the Storfjorden overflow. *Deep-Sea Research Part I*, Vol 50 (10-11) pp 1283-1303.
- I. Fer and **P.M. Haugan** 2003. Dissolution from a liquid-CO₂ lake disposed in the deep ocean, *Limnology and Oceanography*, 872-883, 48(2)
- L.H. Smedsrud, T. Saloranta, **P.M. Haugan**, T. Kangas 2003. Sea Ice Formation on a Very Cold Surface, *Geophysical Research Letters*, 30(6), 1284, doi:10.1029/2002GL016786.
- J. Meincke, D. Quadfasel, W.H. Berger, K. Brander, R.R. Dickson, **P.M. Haugan**, M. Latif, J. Marotzke, J. Marshall, J.F. Minster, J. Pätzold, G. Parrilla, W. de Ruijter and F. Schott 2003. Variability of the Thermohaline Circulation (THC). In Wefer, G., Lamy, F. and Mantoura, F. (Eds): *Marine Science Frontiers for Europe*, Springer, ISBN 3-540-40168-7, 39-60.
- T.M. Saloranta and **P.M. Haugan** 2001. Interannual variability in the hydrography of Atlantic water northwest of Svalbard. *J. geoph. res.* 106(C7) 13931-13943.
- Haarpaintner, J., J.-C. Gascard and **P.M. Haugan** 2001. Ice production and brine formation in Storfjorden. *J. geoph. res.* 106(C7) 14001-14013.
- Haarpaintner, J., **P.M. Haugan** and J.-C. Gascard 2001. Interannual variability of the Storfjorden (Svalbard) ice cover and ice production observed by ERS-2 SAR. *Ann. Glaciol.* 33, 430-436.
- Haarpaintner, J., J. O'Dwyer, J.-C. Gascard, **P.M. Haugan**, U. Schauer, and S. Østerhus 2001. Seasonal transformation of water masses, circulation and brine formation observed in Storfjorden, Svalbard. *Ann. Glaciol.* 33, 437-443.
- Haugan, P.M.** 1999. Structure and heat content of the West Spitsbergen Current. *Pol. Res.* 18(2), 183-188.

- Thorkildsen, F. and **P.M. Haugan** 1999. Modeling of Deep Water Renewal Through Cold Convective Plumes. *Deep-Sea Res.* II 46, 1357-1383.
- Simonsen, K. and **P.M. Haugan** 1996. Heat Budgets of the Arctic Mediterranean and Sea Surface Heat Flux Parameterizations for the Nordic Seas. *J. geoph. res.* 101(C3), 6553-6576.
- Lundberg, L. and **P.M. Haugan** 1996. A Nordic Seas - Arctic Ocean Carbon Budget From Volume Flows and Inorganic Carbon Data. *Global Biogeochemical Cycles* 10(3), 493-510.
- P.M. Haugan** and H. Drange 1996. Effects of CO₂ on the ocean environment. *Energy Convers. Mgmt.* 37 (6-8), 1019-1022.
- P.M. Haugan** and H. Drange 1995. Disposal Options in View of Ocean Circulation. In N. Handa and T. Ohsumi, editors, *Direct Ocean Disposal of Carbon Dioxide*, pages 123--141. TERRAPUB, Tokyo.
- P.M. Haugan**, F. Thorkildsen, and G. Alendal 1995. Dissolution of CO₂ in the ocean. *Energy Convers. Mgmt.*, 36(6-9):461-466.
- Alendal, G., H. Drange, and **P.M. Haugan** 1994. Modelling of Deep-Sea Gravity Currents Using an Integrated Plume Model. In O.M. Johannessen, R.D. Muench, and J.E. Overland (Ed.): *The Polar Oceans and Their Role in Shaping the Global Environment: The Nansen Centennial Volume*, volume 85 of AGU Geophysical Monograph, pages 237-246. American Geophysical Union.
- Johnny A. Johannessen, Lars P. Røed, Ola M. Johannessen, Geir Evensen, Bruce Hackett, Lasse H. Petterson, **Peter M. Haugan**, Stein Sandven and Robert Shuchman 1993. Monitoring and modeling of the marine coastal environment. *Photogrammetric Eng. and Remote Sensing*, (59), pp 351-361.
- Helge Drange and **Peter M. Haugan** 1992. Disposal of SO₂ in sea water. *Nature* 357(6379) doi:10.1038/357547
- P.M. Haugan** and H. Drange 1992. Sequestration of CO₂ in the deep ocean by shallow injection. *Nature* 357, 318-320.
- Haugan, P.M.**, G. Evensen, J.A. Johannessen, O.M. Johannessen and L.H. Pettersson 1991. Modeled and Observed Mesoscale Circulation and Wave-Current Refraction During the 1988 Norwegian Continental Shelf Experiment. *J. geoph. res.* 96 (C6), 10487-10506.
- T. Kydland, **P.M. Haugan**, G. Bousquet and S.O. Havig 1988. Application of unconventional techniques in constructing an integrated reservoir simulation model for the Troll field. *SPE Res. Eng. J.* 3(3), 967-976.
- Engevik, L., **P.M. Haugan** and S. Klemp 1985. Stability analysis adjacent to neutral solutions of the Taylor-Goldstein equation when Howard's formula breaks down. *J. Fluid Mech.* 159, 347-358.

Some popular science articles, media contributions and public outreach (not updated):

- P.M. Haugan** 2010. Facing the scientific facts. Public Service Science and Technology Review No. 6, p.
- P.M. Haugan** 2010. Usikkerhet og vitenskapelige metoder. *Bladet Forskning* 1-2010.
- P.M. Haugan**. 2010. Et veivalg for universitetsstrategien. *Leserinlegg i PåHøyden* 19. mars 2010.
- P.M. Haugan**. 2009. How to do climate education. Public Service Science and Technology Review No. 5, p. 134.

- P.M. Haugan** 2007. "Ten years from one hundred." (In Norwegian). Chapter 8 of the book "I vinden. Geofysisk Institutt 90 år" edited by Edgar Hovland. Fagbokforlaget ISBN 978-82-450-0666-7.
- P.M. Haugan** 2006. "Efforts on the role of the ocean in climate approaching the end." Interview in Cicerone No. 5/2006.
- P.M. Haugan** 2006. "Active climatic influence from the polar regions" (in Norwegian), p.31 in Cicerone No. 4/2006.
- P.M. Haugan** 2006. "Large and rapid sea ice changes in the Arctic" (in Norwegian), p.37 in Cicerone No. 3/2006.
- P.M. Haugan** 2006. "The Ocean Current Theory" ("Havstrømsteorien", in Norwegian) Chapter 23., pp. 362-375 of the book by Stein Ugelvik Larsen (Ed.): "Teori og metode i geografi", 412 pp., ISBN-13:978-82-7674-878-9, Fagbokforlaget, Bergen.
- P.M. Haugan**, C. Turley and H.-O. Poertner 2006. Ocean acidification resulting from elevated levels of CO₂ in the atmosphere, DN-utredning 2006-1, 32 pp. Norwegian Directorate for Nature Management, Trondheim, Norway.
- P.M. Haugan** 2005. "Norway – a polar nation?" (in Norwegian) in Aftenposten 26 April.
- P.M. Haugan** 2005. Secret history of the climate. Interview on p.10 in "Features - University of Bergen 2005-2006, Research – Education – International cooperation".
- P.M. Haugan** 2004. Possible effects of ocean acidification. Reports in Meteorology and Oceanography 2-2004. Geophysical Institute, University of Bergen, ISBN 82-8116-002-0, ISSN 1502-5519.
- P.M. Haugan** 2004. Contribution to "professor relay" in QED student magazine, University of Bergen (in Norwegian).
- P.M. Haugan** 2004. On the Gulf Stream and ocean carbon. Interview in daily newspaper Aftenposten 2 April (in Norwegian).
- S.S. Hjøllø and **P.M. Haugan**. "Atlantehavet er et gigantisk varmelager". Contribution to popular climate science magazine Cicerone No. 3, June 2003.
- P. M. Haugan**: Chronicle in newspaper Bergens Tidende, interview in NRK-Radio, in newspaper Bergensavisen and in university periodicals in connection with 75 year anniversary for Geophysical Institute building 5 June 2003.
- P.M. Haugan**: Interview and contribution of material to NRK-TV program "Schrödingers katt" concerning CO₂ in the ocean 8 May 2003.
- P.M. Haugan**: Chronicle in newspaper Aftenposten on 27 March 2003 on CO₂ experimentation and freedom of research. Also several readers contributions on related issues. Partly based on invited talk in Kyoto September 2002 (Proceedings of GHGT-6).
- P.M. Haugan**: "Redusert innsats fra KlimaProg om havets rolle", Cicerone No. 1, January 2003.
- P.M. Haugan**: "Fremtidens utfordringer i havforskningen". Contribution to 75 year anniversary publication of "Selskapet til vitenskapenes fremme" published by Bergen Museum December 2002.

Other selected publications:

- Tveiten, B.W., J.O. Tande, **P.M. Haugan**, K.G. Frøysa, I. Barstad and J. Onarheim 2010. Offshore Wind Technology Research in Norway – An Overview of National Research Programs. The Japan Society of Naval Architects and Ocean Engineers Special Issue for Proceedings of Renewable Energy 2010.

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