

curriculum vitae

Arne Melsom

Biographical data

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Position: Senior scientist

Degrees: 1987: Cand. scient. (MS),
Institute of Geophysics, University of Oslo
1992: Dr. scient. (PhD),
Institute of Geophysics, University of Oslo

Award: 1994: Young Scientist Publication Award,
European Geophysical Society

Professional career: 1987-88: Research assistant,
Institute of Geophysics, University of Oslo
1989-92: Graduate research fellow,
Institute of Geophysics, University of Oslo
1992-93: Senior scientist,
Division for Research and Development,
Norwegian Meteorological Institute
1994-95: Postdoctoral research fellow,
Norwegian Research Council.
Guest investigator at Center for Ocean-Atmospheric
Prediction Studies, Florida State University, USA (1994)
1996-: Senior scientist,
Division for Research and Development,
Norwegian Meteorological Institute

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Publications

Peer-reviewed publications

- Mauritzen, C., **A. Melsom**, and R.T. Sutton, 2012: Importance of density-compensated temperature change for deep North Atlantic Ocean heat uptake. *Nature Geo.*, **5**, 905-910. doi:10.1038/ngeo1639 (Authors' version [here](#))
- Melsom, A.**, F. Counillon, J.H. LaCasce, L. Bertino, 2012: Forecasting search areas using ensemble ocean circulation modeling. *Ocean Dyn.*, **62**(8), 1245-1257. doi:10.1007/s10236-012-0561-5 (Authors' version [here](#))
- Orsolini, Y.J., R. Senan, R.E. Benestad, and **A. Melsom**, 2012: Autumn atmospheric response to the 2007 low Arctic sea ice extent in coupled oceanatmosphere hindcasts. *Clim. Dyn.*, **38**, 2437-2448. doi:10.1007/s00382-011-1169-z
- R.E. Benestad, R. Senan, M. Balmaseda, L. Ferranti, Y. Orsolini, and **A. Melsom**, 2011: Sensitivity of summer 2-m temperature to sea ice conditions. *Tellus*, **63A**, 334-337. doi:10.1111/j.1600-0870.2010.00488.x
- M. Hidalgo, Y. Gusdal, G.E. Dingsør, D. Hjermann, G. Ottersen, L.C. Stige, **A. Melsom**, and N.C. Stenseth, 2011: A combination of hydrodynamical and statistical modelling reveals nonstationary climate effects on fish larvae distributions. *Proc. Royal Soc., Bio. Ser.*, **279**, 275-283. doi:10.1098/rspb.2011.0750
- Melsom, A.**, 2010: Validation of an ocean model ensemble. In: *Coastal to global operational oceanography: Achievements and Challenges*. Ed.s: Dahlin, Bell, Flemming, Petersson. EuroGOOS publication no. 28, SMHI, Norrköping, Sweden. pp. 253-259. (Author's version [here](#))
- Melsom, A.**, and Y. Gusdal, 2010: A new method for assessing impacts of potential oil spills. In: *Coastal to global operational oceanography: Achievements and Challenges*. Ed.s: Dahlin, Bell, Flemming, Petersson. EuroGOOS publication no. 28, SMHI, Norrköping, Sweden. pp. 531-535.
- Melsom, A.**, V.S. Lien, and W.P. Budgell, 2009: Using the Regional Ocean Modeling System (ROMS) to improve the ocean circulation from a GCM 20th century simulation. *Ocean Dyn.*, **59**, 969-981. doi:10.1029/2007GL030808
- Hjermann, D. Ø, **A. Melsom**, G.E. Dingsør, J.M. Durant, A.M. Eikeset, L.P. Røed, G. Ottersen, G. Storvik, and N.C. Stenseth, 2007: Fish and oil in the Lofoten-Barents Sea system: a synoptic review of what is known and not known about the effect of oil spills on fish populations. *Mar. Eco. Prog. Ser.*, **339**, 283-299.
- Melsom, A.**, 2005: Mesoscale activity in the North Sea as seen in ensemble simulations. *Ocean Dyn.*, **55**(3-4), 338-350. doi:10.1007/s10236-005-0016-3. (Author's version [here](#))
- Melsom, A.**, and Ø. Sætra, 2004: Effects of wave breaking on the near-surface profiles of velocity and turbulent kinetic energy. *J. Phys. Oceanogr.*, **34**, 490-504. doi:10.1175/2496.1
- Melsom, A.**, E.J. Metzger, and H.E. Hurlburt, 2003: Impact of remote oceanic forcing on Gulf of Alaska sea levels and mesoscale circulation. *J. Geophys. Res.*, **108**(C11), 3346. doi:10.1029/2002JC001742
- Benestad, R.E. and **A. Melsom**, 2002: Is there a link between the unusually wet autumns in southeastern Norway and SST anomalies? *Climate Res.*, **23**, 67-79.

- Melsom, A.**, S.D. Meyers, H.E. Hurlburt, E.J. Metzger and J.J. O'Brien, 1999: ENSO effects on Gulf of Alaska eddies. *Earth Interactions*, **3**, 1-30.
[doi:10.1175/1087-3562\(1999\)003<0001:EEOGOA>2.3.CO;2](https://doi.org/10.1175/1087-3562(1999)003<0001:EEOGOA>2.3.CO;2)
- Meyers, S.D., **A. Melsom**, G.T. Mitchum and J.J. O'Brien, 1998: Detection of the oceanic fast Kelvin wave teleconnection during ENSO. *J. Geophys. Res.*, **103**, 27.655-27.663.
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- Martinsen, E.A., B. Hackett, L.P. Røed and **A. Melsom**, 1997: Operational Marine Models at the Norwegian Meteorological Institute. In: *Operational Oceanography. The challenge for European Co-operation*. Ed.s Stel et al.. *Elsevier Oceanography Series no. 62*, 436-443. [10.1016/S0422-9894\(97\)80053-0](https://doi.org/10.1016/S0422-9894(97)80053-0)
- Melsom, A.**, 1996: Effects of wave breaking on the surface drift. *J. Geophys. Res.*, **101**, 12071-12078. [doi:10.1029/96JC00584](https://doi.org/10.1029/96JC00584)
- Weber, J.E. and **A. Melsom**, 1993a: Transient ocean currents induced by wind and growing waves. *J. Phys. Oceanogr.*, **23**, 193-206.
[doi:10.1175/1520-0485\(1993\)023<0193:TOCIBW>2.0.CO;2](https://doi.org/10.1175/1520-0485(1993)023<0193:TOCIBW>2.0.CO;2)
- Weber, J.E. and **A. Melsom**, 1993b: Volume flux induced by wind and waves in a saturated sea. *J. Geophys. Res.*, **98**, 4739-4745. [doi:10.1029/92JC02057](https://doi.org/10.1029/92JC02057)
- Melsom, A.**, 1993: Effects of variable eddy viscosity on wave-induced currents under ice. *Ann. Geophys.*, **11**, 78-88.
- Melsom, A.**, 1992: Wave-induced roll motion beneath an ice cover. *J. Phys. Oceanogr.*, **22**, 19-28. [doi:10.1175/1520-0485\(1992\)022<0019:WIRMBA>2.0.CO;2](https://doi.org/10.1175/1520-0485(1992)022<0019:WIRMBA>2.0.CO;2)

Reports

- Melsom, A.**, M. Simonsen, and L. Bertino, 2011: Scientific Validation Report (ScVR) for V1 Real-time Forecasts. [MyOcean project report MYO-WP05-ScCV-RT-ARC-METNO-OSLO-NO](#), 21 pp.
- Melsom, A.**, 2010: Perturbing the ocean initial state from NAO regression. [met.no note 1/2010](#), Norwegian Meteorological Institute. 7 pp.
- Melsom, A.**, 2010: Validation of sea ice concentration in the myOcean Arctic Monitoring and Forecasting Centre. [met.no note 12/2010](#), Norwegian Meteorological Institute. 8 pp.
- Hidalgo, M., Y. Gusdal, G.E. Dingsør, L. Ciannelli, D.Ø. Hjermann, G. Ottersen, L.C. Stige, I. Fossum, **A. Melsom**, and N.C. Stenseth, 2009: Combining hydrographical particles-tracking models with spatial analyses to evaluate spatial dynamics of cod larvae and 0-group in the Barents Sea. *ICES CM 2009/C:06*, 21 pp.
- Melsom, A.**, and I. Fossum, 2009: Validation of an ocean model ensemble for the Barents Sea and the northeastern Nordic Seas. Norwegian Meteorological Institute. [met.no report 2/2009](#), Norwegian Meteorological Institute. 23 pp.
- Broström, G., **A. Melsom**, and A. Carrasco, 2009: Iceberg modeling at met.no: Validation of hindcast experiment. [met.no report 16/2009](#), Norwegian Meteorological Institute. 63 pp.
- Broström, G., **A. Melsom**, M. Sayed, and I. Kubat, 2009: Iceberg modeling at met.no: Validation of iceberg model. [met.no report 17/2009](#), Norwegian Meteorological Institute. 36 pp.
- Melsom, A.**, 2009: Ocean – sea ice – atmosphere heat fluxes over the Arctic Ocean. [met.no note 14/2009](#), Norwegian Meteorological Institute. 7 pp.
- Isachsen, P.E., H. Engedahl, A.K. Sperrevik, B. Hackett, and **A. Melsom**, 2009: The TOPAZ system at met.no under MERSEA. [met.no note 26/2009](#), Norwegian Meteorological Institute. 20 pp.
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- Melsom, A.**, 2005: The ncl-metno shell script collection. [met.no note 8/2005](#), Norwegian Meteorological Institute. 30 pp.
- Melsom, A.**, 2004: Nondeterministic variability in the Skagerak and the North Sea: A pilot study. [met.no report 11/2004](#), Norwegian Meteorological Institute. 19 pp.
- Røed, L.P., H. Engedahl, B. Hackett, **A. Melsom**, X.B. Shi, and Ø. Sætra, 1999: [Circulation and hydrography in the Nordic Seas inferred from ocean model experiments at DNMI](#). *RegClim General Technical Report (NILU)* **2**, 109-124.

Popular science publications

- Benestad, R.E., Y. Orsolini, **A. Melsom**, I.K.T. Kindem, and R. Senan, 2012: **Havisens rolle som sesongvarsler** (The role of sea ice as a predictor on seasonal time scales). *Klima*, **2012/1**, 32-33.
- Melsom, A.**, 2011: Statistics of trajectories from ocean currents. *META 01/2011*, The Norwegian metacenter for computational science (NOTUR), 14-16.
- Melsom, A.**, V.S. Lien, and W.P. Budgell, 2009: Modellering av havklima i Barentshavet (Modeling the oceanic climate of the Barents Sea). *Klima*, **2009/6**, 37-38.
- Benestad, R.E., R. Senan, Y. Orsolini, **A. Melsom**, and I.T. Kindem, 2008: Havis kan være jokeren i langtidsvarslene (Sea ice could be a wild card in seasonal forecasts). *Klima*, **2008/6**, 36-37.
- Røed, L.P., C. Mauritzen, **A. Melsom**, and J. Debernard, 2004: **New ice age in the midst of global warming?** (Ny istid under global oppvarming?). *Cicerone*, **13**(2), 14-15.
- Melsom, A.**, 2007a: **IPCC og endring i havnivå** (IPCC and sea level change). *forskning.no*.
- Melsom, A.**, 2007b: **Satellittmlinger av havnivå** (Sea level observations from satellites). *forskning.no*.
- Melsom, A.**, 2002: **Liten samvariasjon i overflatetemperatur mellom Atlanterhavet og Norskehavet** (Low correlations between sea surface temperatures in the Atlantic Ocean and the Norwegian Sea). *Cicerone*, **11**(4), 22-24.
- Melsom, A.**, 2001: **Fjernvirkninger i havet: Datamaskinen som laboratorium** (Oceanic teleconnection: The computer laboratory). *Cicerone*, **10**(1), 24-27.
- Røed, L.P., Ø. Sætra, and **A. Melsom**, 1998: Hvilken risiko foreligger for en rask klimaforandring som følge av endrede mønstre for havstrømmene i Nordatlanten (What is the present risk of rapid climate change due to changing patterns in the North Atlantic ocean circulation). *Kunliga Skogs- och Lantbruksakademins Tidsskrift*, **137**(8), 31-36.