

# Aleksi Nummelin

## Curriculum Vitae, February 2019

Email: [aleksi.h.nummelin@gmail.com](mailto:aleksi.h.nummelin@gmail.com)  
Web: <https://aleksinummelin.github.io/>

Skype: aleksi.nummelin  
GitHub: [github.com/AleksiNummelin](https://github.com/AleksiNummelin)

### Education

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- 10/2016 PhD, climate dynamics and physical oceanography, Geophysical Institute, University of Bergen.  
Thesis: [The Arctic Ocean in a Fresh and Warm Future](#)  
Supervisors: Prof. C. Li, Prof. L. H. Smedsrud and Dr. B. Risebrobakken
- 4/2012 Master of Science (major: geophysics, minors: meteorology, methodological sciences), Department of Physics, University of Helsinki.  
Thesis: [Convection in the Greenland Sea: model and observations.](#)  
Supervisor: Prof. B. Rudels
- 6/2010 Bachelor of Science (major: geophysics, minors: physics, meteorology), Department of Physics, University of Helsinki.  
Thesis: Denmark Strait Overflow  
Supervisor: Prof. B. Rudels

### Work Experience

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- 12/2018 – 1/2019 – Senior Scientist, NORCE Norwegian Research Centre AS, Bergen, Norway  
Scientist (adjunct, 20 %), CEED, University of Oslo, Oslo, Norway
- 1/2017-12/2018 Postdoctoral Fellow, Earth & Planetary Sciences, Johns Hopkins University
- 8/2016-12/2016 Scientist, Geophysical Institute, University of Bergen
- 8/2012–8/2016 PhD research focusing on model simulations and data analysis of ocean circulation changes under freshwater forcing. University of Bergen  
Supervisors: Camille Li, Lars Henrik Smedsrud, Bjørg Risebrobakken
- 5/2009–8/2012 Research assistant, Finnish Meteorological Institute (FMI). Analysis of MITgcm model results and writing a scientific article. Analysis of CTD data and Argo data, and GOTM model results. Participation in FMI's Argo activities in the Baltic Sea. Supervisors: Dr. Tapani Stipa, Prof. Bert Rudels and Dr. Jari Haapala
- 7–8/2008 & 5–6/2007 Summer intern, Finnish Institute of Marine Research. Analysis of MITgcm model results for project report. Supervisor: Dr. Tapani Stipa

### Research & Teaching Experience

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- 2017-2018 Participation in the Johns Hopkins [Teaching Academy](#)
- 7/2015 Lecturer in *A Changing Arctic* -course as part of the International Summer School (ISS) at University of Oslo, Norway
- 1–6/2014 Graduate Student Trainee with Professor Bruno Tremblay, Department of Atmospheric and Oceanic Sciences, McGill University, Canada
- 2013–2015 Teaching assistant in following courses *numerical modelling, data-analysis in meteorology and oceanography, dynamical meteorology, and seminar in atmospheric sciences*, University of Bergen, Norway
- 1–5/2012 Teaching assistant, *introduction to oceanography*, University of Helsinki, Finland

summers 2010/11 Research cruises in the North Atlantic and Nordic Seas on board F/S Meteor (M82-1) and F/S Poseidon (P418/2). Tasks included CTD work including post-processing of the CTD and ADCP data.  
Chief scientists: Prof. D. Quadfasel (M82-1) and Dr. K. Latarius (P418/2), both University of Hamburg, Germany.

## Supervision

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2015–2016	Co-supervisor, MSc thesis, Musa Ssemujju: Monsoon in North East Bangladesh
2014	Co-supervisor, MSc thesis, Emilie Otilde Lotsberg: A view on possible regime shifts in the North Atlantic subpolar gyre in the mid 1920s and 1990s

## Publications

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Lambert, E., **Nummelin, A.**, Pemberton, P., & Ilıcak, M. (2019). Tracing the imprint of river runoff variability on Arctic water mass transformation. *Journal of Geophysical Research: Oceans*, 124. <https://doi.org/10.1029/2017JC013704>

**Nummelin, A.**, S. Jeffress, and T. Haine (2018): Statistical Inversion of Surface Ocean Kinematics from Sea Surface Temperature Observations. *J. Atmos. Oceanic Technol.*, 35, 1913–1933, doi: [10.1175/JTECH-D-18-0057.1](https://doi.org/10.1175/JTECH-D-18-0057.1)

Jensen M., **A. Nummelin**, S. Nielsen, H. Sadatzki, E. Sessford, B. Risebrobakken and A. Born. A (2018). A spatio-temporal reconstruction of sea-surface temperatures in the North Atlantic during Dansgaard-Oeschger events 5-8, 14, 901-922, doi: 10.5194/cp-14-901-2018

Schemm, S., A. **Nummelin**, N.G. Kvamstø, and Ø. Breivik (2017), The Ocean Version of the Lagrangian Analysis Tool LAGRANTO. *J. Atmos. Oceanic Technol.*, 34, 1723-1741, doi: 10.1175/JTECH-D-16-0198.1

**Nummelin, A.**, C. Li, and P. J. Hezel (2017), Connecting ocean heat transport changes from the midlatitudes to the Arctic Ocean, *Geophys. Res. Lett.*, 44, doi:10.1002/2016GL071333.

**Nummelin A.**, M. Ilıcak, C. Li, and L. H. Smedsrud (2016), Consequences of future increased Arctic runoff on Arctic Ocean stratification, circulation, and sea ice cover, *J. Geophys. Res. Oceans*, 120, doi:10.1002/2015JC011156

**Nummelin A.**, C. Li, and L. H. Smedsrud (2015), Response of Arctic Ocean stratification to changing river runoff in a column model, *J. Geophys. Res. Oceans*, 120, 2655–2675, doi:10.1002/2014JC010571

Rudels B., M. Korhonen, G. Budéus, A. Beszczynska-Möller, U. Schauer, **A. Nummelin**, D. Quadfasel, and H. Valdimarsson, (2012) The East Greenland Current and its impacts on the Nordic Seas: observed trends in the past decade *ICES J. Mar. Sci.* 69(5):841-851. doi:10.1093/icesjms/fss079

Roiha P., A. Westerlund, **A. Nummelin**, and T. Stipa (2010) Ensemble forecasting of harmful algal blooms in the Baltic Sea, *J. Mar Systems*, Vol. 83, Issues 3–4. doi:10.1016/j.jmarsys.2010.02.015

## Outreach

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2018	Fluid dynamics demonstrations, Johns Hopkins Annual Physics Fair
2013 & 2015	Presentations in Forskningsdagene UNG, youth science night, Bergen
2013–	Contributing author, <a href="http://www.scisnack.com/">http://www.scisnack.com/</a> science blog

## Scientific Tools

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Analysis	Currently Python – also experience with tools such as Matlab, R, and Ferret.
Numerical models	Number of hydrodynamic models from Norwegian Earth System Model to GOTM 1-D turbulence model.
Instrumentations	Shipboard equipment (CTD, ADCP), active remote control of Argo floats

## Language

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<b>Finnish</b>	<i>Native</i>	<b>English</b>	<i>Excellent</i>	<b>French</b>	<i>Basics</i>
<b>Norwegian</b>	<i>Fluent</i>	<b>Swedish</b>	<i>Fluent</i>		

## Service

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2019	Co-organizer: Workshop on Machine Learning in the Earth's Climate System
2018	Expert reviewer, IPCC Special Report on Oceans & Cryosphere in a Changing Climate
2015–	Reviewer for Journal of Physical Oceanography, Journal of Geophysical Research: Oceans, Geophysical Research Letters, and Climate Dynamics
1/2016	Organizing committee member, annual meeting of the Bjerknes Centre for Climate Research
10/2012–9/2015	Organizing committee member, Geophysical Institute Colloquium
6/2013–1/2014	Head of the organizing committee, ResClim modelling workshop

## References

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Professor Thomas Haine, postdoc supervisor, +1 410 516 7048, [thomas.haine@jhu.edu](mailto:thomas.haine@jhu.edu)  
Professor Camille Li, PhD supervisor, +47 55 58 37 05, [camille.li@uib.no](mailto:camille.li@uib.no)