
CURRICULUM VITAE

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Date of birth:

3. April 1958

Education:

Ph.D. March 17 1993 in Meteorology, University of Copenhagen. (Master degree 11/9 1987 in Meteorology, University of Copenhagen)

Present position:

Professor in Meteorology at the Niels Bohr Institute for Physics, Astronomy and Geophysics, University of Copenhagen.

Previous employment's:

- 1983: student programmer in the Weather Service Department of the Danish Meteorological Institute (DMI).
- 1984: student programmer for Dr. Bennert Machenhauer at University of Copenhagen.
- 1/3 1985 - 31/3 1987: student assistant at the Nordic HIRLAM project, positioned at the DMI.
- 1/4 1987 - 31/5 1989: Scientific employee at DMI. Scientific and partly operational responsibility for the operational Danish numerical forecasting system, DK-LAM.
- 1986-1989: teaching assistant in meteorology in different shorter periods at the Geophysical Institute, University of Copenhagen.
- 1/6 1989 - 15/6 1992: Ph.D. student at University of Copenhagen. The work was carried out at DMI with a 7 month visit at National Center for Atmospheric Research, Boulder Colorado. The thesis titled "Ultra low-Frequency, Large scale flow Patterns and local Blocking of the westerlies in the Northern Winter Hemisphere" was finished in the autumn 1992.
- 15/6 1992 - 30/6 1998: Employed at DMI as scientist.
- 1/7 1998-31/3 2006: Head of Climate Research Division at DMI.
- 1/4 2006-present: Professor in Meteorology, Niels Bohr Institute, University of Copenhagen.
- 1/1 2011-present: Section head of the Climate and Geophysics Section

National Projects/Centres:

- Director of Centre for Energy Environment and Health (www.ceeh.dk), funded by the Danish Strategic Research Council, under the programme for Energy and Environment. Period: 2007-2011.
- Part-time member of the scientific staff of the Centre for Ice and Climate (<http://www.isogklima.nbi.ku.dk/>). Period: 2007 – 2018.

International Projects:

Co-ordinator of two international scientific projects supported by the EU-commission:

- Project On Tendency Evaluations using New Techniques to Improve Atmospheric Long-term Simulations (POTENTIALS). Institutions: DMI (Copenhagen, DK), CNRM/Meteo France

(Toulouse, F), MPI for Meteorology (Hamburg, D), LMD/CNRS (Paris, F), CINECA (Bologna, I). **Period: 1998-2000**. Contract no.: ENV-CT97-497.

- STorm, WAVE and SURge Scenarios for the 2100 Century (STOWASUS-2100). Institutions: DMI (Copenhagen, DK), Proudman Oceanographic Laboratory (Merseyside, UK), University of Padua (Padova, I), FISBAT-CNR (Bologna, I), GKSS (Geesthacht, D), RIKZ (Den Haag, NL), DNMI (Oslo, N). **Period: 1998-2000**. Contract no.: ENV-CT97-498.

Work-package leader on “Hind-cast simulations of the climate evolution in the 20th Century” in the ongoing EU-project:

- ENSEMBLE-based Predictions of Climate Changes and their Impacts (ENSEMBLES). **Period: Sept. 2004-2009**. Integrated project under the European Commission's 6th Framework Programme. ENSEMBLES has 73 participating institutions.

Scientific responsibility for DMI contribution in **seven** additional international projects on climate modelling and climate research

Reviewed scientific articles since 2010 (ORCID 0000-0001-6970-2404):

- Kaas, E., and J. R. Nielsen (2010): A mass conserving quasi-monotonic filter for use in semi-Lagrangian models. *Monthly Weather Review*, **138**, No. 5.
- Rasmussen, T. A. S., N. Kliem, E. Kaas (2010) Modelling the sea ice in the Nares Strait. *Ocean Modelling*, **35**, No. 3, 2010, 161-172.
- Rasmussen, T. A. S., N. Kliem, E. Kaas (2011) The effect of climate change on the sea ice and the hydrography in the Nares Strait. *Atmosphere-Ocean*. doi:10.1080/07055900.2011.604404
- Cvijanovic, I, Langen, PL, and Kaas, E (2011), ' Weakened atmospheric energy transport feedback in cold glacial climates ', *Climate of the Past*, vol 7, pp. 1061-1073.
- B. Hansen, J. Brandt, J. H. Christensen, and E. Kaas (2011): Semi-Lagrangian methods in air pollution models, *Geosci. Model Dev.*, 4, 511-541, doi:10.5194/gmd-4-511-2011.
- Funder S, H. Goosse, H. Jepsen, E. Kaas, K. H. Kjær, N. J. Korsgaard, N. K. Larsen, H. Linderson, A. Lyså, P. Möller, J. Olsen, E. Willerslev (2011): A 10,000-Year Record of Arctic Ocean Sea-Ice Variability—View from the Beach, *Science*. 5 August 2011: 747-750. [DOI:10.1126/science.1202760].
- Cvijanovic, I, P. L. Langen, E. Kaas, and Peter D. Ditlevsen (2013): Southward Intertropical Convergence Zone shifts and implications for an atmospheric bipolar seesaw. *J. climate*, <http://dx.doi.org/10.1175/JCLI-D-12-00279.1>
- Sørensen, B., E. Kaas, U. S. Korsholm (2013): A mass conserving and multi-tracer efficient transport scheme in the online integrated Enviro-HIRLAM model. *Geosci. Model Dev.*, 6, 1029-1042, doi:10.5194/gmd-6-1029-2013, <http://www.geosci-model-dev.net/6/1029/2013/gmd-6-1029-2013.pdf>
- Rathmann, N. M., S. Yang and E. Kaas (2013): Tropical cyclones in enhanced resolution CMIP5 experiments. *Clim Dyn*, DOI 10.1007/s00382-013-1818-5.
- Krueger, O., F. Feser, L. Bärring, E. Kaas, T. Schmith, H. Tuomenvirta and H. von Storch, 2013: Comment on “Trends and low frequency variability of extra-tropical cyclone activity in the ensemble of Twentieth Century Reanalysis” by Xiaolan L. Wang, Y. Feng, G. P. Compo, V. R. Swail, F. W. Zwiers, R. J. Allan, and P.D. Sardeshmukh, *Climate Dynamics*, published online, DOI 10.1007/s00382-013-1814-9
- Brandt, J., J. D. Silver, J. H. Christensen, M. S. Andersen, J. H. Bønløkke, T. Sigsgaard, C. Geels, A. Gross, A. B. Hansen, K. M. Hansen, G. B. Hedegaard, E. Kaas and L. M. Frohn (2013): Contribution from the ten major emission sectors in Europe and Denmark to the health-cost externalities of air pollution using the EVA model system – an integrated modelling approach. *Atmos. Chem. Phys*, **13**, 7725-7746. doi:10.5194/acp-13-7725-2013.
- Brandt, J., J. D. Silver, J. H. Christensen, M. S. Andersen, J. H. Bønløkke, T. Sigsgaard, C. Geels, A. Gross, A. B. Hansen, K. M. Hansen, G. B. Hedegaard, E. Kaas and L. M. Frohn (2013): Assessment of past, present and future health-cost externalities of air pollution in Europe and the contribution from international ship traffic using the EVA model system. *Atmos. Chem. Phys*, **13**, 7747-7764, doi:10.5194/acp-13-7747-2013.
- Kaas, E., B. Sørensen, C. C. Tscherning and M. Veicherts (2013): Multi-processing least squares

- collocation: Applications to gravity field analysis. *Journal of Geodetic Science*. Volume 3, Issue 3, Pages 219–223, DOI: [10.2478/jogs-2013-0025](https://doi.org/10.2478/jogs-2013-0025)
- Kaas, E., B. Sørensen, P. H. Lauritzen and A. B. Hansen (2013): A hybrid Eulerian Lagrangian numerical scheme for solving prognostic equations in fluid dynamics. *Geosci. Model Dev.* **6**, 2023–2047, doi:10.5194/gmd-6-2023-2013.
 - Baklanov, A., K. H. Schlunzen, P. Suppan, J. Baldasano, D. Brunner, S. Aksoyoglu, G. Carmichael, J. Douros, J. Flemming, R. Forkel, S. Galmarini, M. Gauss, G. Grell, M. Hirtl, S. Joffre, O. Jorba, E. Kaas, M. Kaasik, G. Kallos, X. Kong, U. Korsholm, A. Kurganskiy, J. Kushta, U. Lohmann, A. Mahura, A. Manders-Groot, A. Maurizi, N. Moussiopoulos, S. T. Rao, N. Savage, C. Seigneur, R. Sokhi, E. Solazzo, S. Solomos, B. Sørensen, G. Tsegas, E. Vignati, B. Vogel, and Y. Zhang, (2014): Online coupled regional meteorology-chemistry models in Europe: current status and prospects. *Atmos. Chem. Phys.*, **14**, 317–398, doi:10.5194/acp-14-317-2014.
 - Lauritzen, P.H., P.A. Ullrich, C. Jablonowski, P.A. Bosler, D. Calhoun, A.J. Conley, T. Enomoto, L. Dong, S. Dubey, O. Guba, A.B. Hansen, E. Kaas, J. Kent, J.F. Lamarque, M.J. Prather, D. Reinert, V.V. Shashkin, W.C. Skamarock, B. Sørensen, M.A. Taylor, and M.A. Tolstykh (2014): A standard test case suite for two-dimensional linear transport on the sphere: results from a collection of state-of-the-art schemes. *Geosci. Model Dev.*, **7**, 105–145, doi:10.5194/gmd-7-105-2014.
 - Acheampong, C. Fosu, L. K. Amekudzi, and E. Kaas (2015): Comparison of precipitable water over Ghana using GPS signals and reanalysis products. *J. Geod. Sci.*; Volume 5, Issue 1, ISSN (Online) 2081-9943, DOI: [10.1515/jogs-2015-0016](https://doi.org/10.1515/jogs-2015-0016), November 2015.
 - Lang, A., S. Yang, and E. Kaas (2017), Sea ice thickness and recent Arctic warming, *Geophys. Res. Lett.*, **44**, 409–418, doi:10.1002/2016GL071274.
 - Baklanov, A, U. S. Korsholm, R. Nuterman, A. Mahura, K. P. Nielsen, B. H. Sass, A. Rasmussen, A. Zakey, E. Kaas, A. Kurganskiy, B. Sørensen, and I González-Aparicio (2017): Enviro-HIRLAM online integrated meteorology–chemistry modelling system: strategy, methodology, developments and applications (v7.2). *Geosci. Model Dev.*, DOI: 10.5194/gmd-10-2971-2017.
 - Olesen, M., J. H. Christensen, E. Kaas and F. Boberg (2018): On the robustness of high resolution regional climate projections for Greenland: A method for uncertainty distillation. *Climate Research*, <https://doi.org/10.3354/cr01536>.
 - Hintz, K. S, H. Vedel and E. Kaas (2019): Collecting and Processing of Barometric Data from Smartphones for Potential Use in NWP Data Assimilation. *Meteorological Applications*, <https://doi.org/10.1002/met.1805>
 - Hintz, K. S., K. O'Boyle, S. L. Dance, S. Al Ali, I. Ansper, D. Blaauboer, M. Clark, A. Cress, M. Dahoui, R. Darcy, J. Hyrkanen, L. Isaksen, E. Kaas, M. Lavanant, G. Lebloa, E. Mallet, C. McNicholas, J. Onvlee-Hooimeijer, B. Sass, V. Siirand, H. Vedel, J. A. Waller, X. Yang, (2019): Collecting and utilising crowdsourced data for numerical weather prediction: Propositions from the meeting held in Copenhagen, 4-5 December 2018. *Atmospheric Science Letters*. <https://doi.org/10.1002/asl.921>
 - Hintz, K. S, H. Vedel, E. Kaas and N. W. Nielsen (2020): Estimation of wind speed and roughness length using smartphones: Method and quality assessment. *Journal of Atmospheric and Oceanic Technology*, <https://doi.org/10.1175/JTECH-D-19-0037.1>
 - Kurganskiy, A, C. A. Skjøth, A. Baklanov, M. Sofiev, A. Saarto, E. Severova, S. Smyshlyaev, and E. Kaas (2020): Incorporation of pollen data in source maps is vital for pollen dispersion models, *Atmospheric Chemistry and Physics (ACP)*. **20**, 2099–2121.
 - Ringgaard, I. M; S. Yang; E. Kaas; J. H. Christensen (2020): Barents-Kara sea ice and European winters in the coupled model EC-Earth. *Climate Dynamics*. **54**, pages 3323–3338.
 - Jach, L ., K. Warrach-Sagi, J. Ingwersen, E. Kaas, V. Wulfmeyer(2020): Land Cover Impacts on Land-Atmosphere Coupling Strength in Climate Simulations with WRF over Europe. *JGR – atmospheres*, Volume 125, Issue 18, <https://doi.org/10.1029/2019JD031989>
 - Ukkonen, P, R. Pincus, R. J. Hogan, K. P. Nielsen, E. Kaas (2020): Accelerating radiation computations for dynamical models with targeted machine learning and code optimization. *Journal of Advances in Modeling Earth Systems*. **Submitted**.

Reviewed scientific book chapters

Machenhauer, B., E. Kaas, and P. H. Lauritzen, 2008: “Finite volume methods in meteorology”. Chapter of 119 pages in ”COMPUTATIONAL METHODS FOR THE ATMOSPHERE AND THE OCEANS”

published by Elsevier. Editors: Roger Temam, Joe Tribbia and Philippe Ciarlet. 784 pages. ISBN 978-0-444-51893-4.

Kaas, E. 2000: Numerical modelling in meteorology and climate research - an overview. Pages LII-LXIV (52-64) in "Modelling of Casting, Welding and Advanced Solidification Processes - IX", Editors: P. R. Sahm, P. N. Hansen and J. G. Conley. SHAKER Verlag, ISBN 3-8265-7230-0.

Kaas, E. and U. Andersen, 2000: Scenarios for extra-tropical storm and wave activity: Methodologies and results. Pages 49-65 in "Climate Scenarios for Water-Related and Coastal Impacts", ECLAT-2 workshop report no. 3. Editor: J. Beersma. ISBN 0-902170-45-7.

Three chapters in "Sea level change and coastal processes. Implications for Europe", pages 110-119. European Commission. ISBN 92-828-9023-6:

Kaas, E., H. von Storch and I. Lozano, 2000: "Wind driven sea level variations in the past and in the future";

Kaas, E. and H. von Storch, 2000: "Wind and pressure forcing and the implications for sea level".

Sánchez-Archilla, A, P. Hoekstra, J.A. Jiménez, E. Kaas and A. Maldonado, 2000: "Climate change implications for coastal processes".

Educational articles / book chapters / material:

Kaas, E., Kaj Mantzius Hansen, Wilhelm May, Henrik Voldborg, Maryanne Kmit, Martin Stendel, Jan-Peter Schulz, Ole Bøssing Christensen, Jens Hesselbjerg Christensen, Sirpa Kilund, Annette Guldborg and Uffe Andersen, 2000: An interactive system for animating the greenhouse induced change in different weather parameters: "Climate of the Future". Permanent exhibition at the Experimentarium, Copenhagen, DK. Background text also available at: <http://www.dmi.dk/pub/STOWASUS-2100/Experimentarium/>

Eigil Kaas: 2006: "Vejr, klima og klimaændringer". Kap. 5 i "Naturgeografi, udgivet på Geografforlaget", side 145-184.

Eigil Kaas, 2008: "Hvad sker der med Jordens klima i disse år – og hvorfor?" I "Klima ændringerne – Menneskehedens hidtil største udfordring", side 11-21. Red: Hans Meltofte, Forlag: Hovedland, ISBN 978-87-7070-125-9

Presentations:

In the order of 410 oral presentations at international conferences, workshops and symposia. Approximately 35 invited talks.

Outreach

- In the order of 110 interviews in Danish Radio channels and Danish Television about climate research.
- Approximately 500 interviews in popular articles in newspapers and other media on climate change and variability, and on physics of the atmosphere.
- Blog (2008-2009) on climate change at ing.dk

Review activities

Reviewer on numerous scientific articles in the areas of large-scale atmospheric dynamics, statistical downscaling and in numerical techniques for the journals "Journal of Atmospheric Science", "Tellus", "Atmosphere and Ocean", "Atmospheric Research", "Climate Research", "The Atmosphere - Ocean System", "Journal of Geophysical Research", "Geophysical Research Letters" and "Climate Dynamics"

Censorship

Officially appointed examiner in physics at the Danish universities.

Committees and councils

Member of the review board for the international scientific journal "Climate Research" (1999-2010).

Member of the Danish National Committee for the International Polar Year.

Member of the Ph.D. committee of the Copenhagen Global Change Initiative (COGCI) (2000-2006).

Member of the Danish National Committee for Climate Research (2001-).

Member of the Climate Panel at University of Copenhagen (2008-...).

Chairman (president) of the Danish Meteorological Society. (2007. ...)

Member of the Danish IUGG committee (IAMAS representative) (2008- ...)

Member of the Scientific Advisory Board of the Oxford Res. Encyclopedia of Climate Science (2014...)

Appointed member of the Scientific Advisory Committee for the European Centre for Medium Range Weather Forecasting (ECMWF) (2014 ...).