Curriculum Vitae for Michael Tjernström

Full name: Michael Kjell Henry Tjernström
Address: Department of Meteorology,
Stockholm University,
106 91 Stockholm
Born: 17 August 1955
Place of Birth: Solna, Sweden
Citizenship: Swedish
Marital Status: Married, to Gunilla Svensson
Children: Martin (1979), and Linnea (1984), Johanna (2000)

Education:

1979	B.Sc.	Stockholm University
1979	Air-Force Officer	Swedish Air Force Officer Training Schools.
1988	Ph.D.	Uppsala University

Professional record:

Present position

07/2001 – present	Professor in Boundary-Layer Meteorology, Stockholm University.

Employment record:

10/2005 – 08/2006	CIRES Visiting Fellow, University of Colorado at Boulder, USA
12/1998 – 11/2005	Senior Scientist, Swedish Research Council, at Stockholm University
05/2000 – 06/2001	Professor in Meteorology, Uppsala University
05/1997 – 11/1997	Research Fellow (part time 50%), Research Department, Swedish Meteorological and Hydrological Institute (SMHI), Norrköping
06/1996 – 02/1997	Visiting Faculty, California Institute of Technology, Engineering and Applied Science (Environmental Engineering), Pasadena, USA
07/1994 – 04/2000	Senior Lecturer in Meteorology, Uppsala University
01/1991 – 06/1994	Assistant Professor in Meteorology, Uppsala University
04/1988 – 12/1990	Post-doctoral Fellow, Department of Meteorology, Uppsala University
09/1983 – 03/1988	Graduate Student, Department of Meteorology, Uppsala University
07/1979 – 06/1994	Officer, Swedish Air Force, Swedish Armed Forces Weather Service

Other:

08/2001 – 12/2009	Partial parental leave, net-total ~40 months.
03/1993	Associate Professor [*Docent*] in Meteorology, Uppsala University

Longer invited visits:

08/2016–07/2017: Visiting Scientist, National Cener for Atmospheric Research, Boulder Colorado
06–07 & 10–12/2009: Visiting scientist, NOAA Earth System Research Lab, Boulder, Colorado
07–08/2007 & 07/2008: Visiting Professor, CIRES, University of Colorado at Boulder
01–04/2000 & 02–05/2003: Visiting Scientist, Naval Research Laboratory, Marine Meteorology Division, United States Department of the Navy, Monterey, California
01 - 02/1996, 01 – 02/1998 & 01 – 03/1999: Visiting Scientist, California Institute of Technology
06 – 07/1993 Visiting Scientist, Scripps Institution of Oceanography, Physical Oceanography Division, University of California, San Diego, California
11/1991 & 02 – 03/1992 : Visiting Scientist Desert Research Institute, Atmospheric Sciences Division, University of Nevada, Reno, Nevada, Reno, Nevada

Other shorter visits:

Duke University, Durham, North Carolina; University of Leeds, Leeds, UK; National Oceanic and Atmospheric Administration (NOAA), Boulder, Colorado; University of California at Irvine, California; National Center for Atmospheric Research (NCAR), Boulder, Colorado; Naval Postgraduate School, Monterey, California; Stanford University, Palo Alto, California; NOAA Air Resources Lab, Turbulence and Diffusion Division, Oak Ridge, Tennessee; Desert Research Institute, University of Nevada at Reno, Nevada.

Main research interests:

- Arctic climate processes: Arctic boundary-layer meteorology, clouds and aerosols, atmospheric circulation changes.
- Atmospheric boundary layer and mesoscale dynamics: Boundary layer clouds, interplay between radiation, cloud microphysics and turbulence in and below clouds; Interaction with mesoscale dynamics; Stable boundary layers; Analysis of field experiment data and development of parameterizations.

- Coastal meteorology, the dynamics of mesoscale circulations: sea/land breeze circulation, coastal jets, super-critical flows and wind reversal events, interaction with the boundary layer dynamics; Interaction between mesoscale flow and complex coastal orography and coastline orientation.

Scientific activity:

- Arctic Climate Across Scales (ACAS), 2016 – present, PI, funded by *Knut and Alice Wallenberg Foundation*
- Physics of Arctic warm-air intrusions, 2016 – present, PI, funded by the *Swedish Research Council*
- Integrated Arctic Observation System (INTAROS), 2016 – present, co-PI, Theme Leader for the *Atmosphere* and WP2 Task Leader, *European Opinion Horizon2020* program
- Advanced Prediction in Polar regions and beyond: modelling, observing system design and LInkages associated with arctic ClimATE change (APPLICATE), 2016 – present, co-PI, funded by the *European Opinion Horizon2020* program
- Arctic and Global Predictions, 2012 - 2014, funded by the *US Office of Naval Research*.
- Arctic Clouds in Summer Experiment (ACSE) & SWERUS-C3, 2011 - present, PI for ACSE and Co-PI in SWERUS (Boundary-layer meteorology program), Arctic expedition funded by *Knut and Alice Wallenberg Foundation, US Office of Naval Research, Faculty of Science Stockholm University & Swedish Research Council*
- Unified Parameterizations for Seasonal Prediction, 2011 - 2014, funded by the *US Office of Naval Research*.
- European Union Cloud Intercomparison, Process Study & Evaluation Project (EUCLIPSE), 2010 – 2014, funded by the *European Union 7th Framework Program*.
- Advanced Simulation of Arctic Climate Change and Effects in the Nordic Countries (ADSIMNOR), 2010 - 2014. Strategic Research Initiative lead by SMHI, funded by *FORMAS*
- Utilization of Advanced Satellite and in situ Observations in Support of Arctic Climate Modeling, 2008-2013. Joint project with SMHI Research Department & the Rossby Center, funded by *Swedish Space Board*
- Arctic Summer Cloud-Ocean Study (ASCOS), 2005 – 2013. Co-Chief Scientist and leader of the meteorological program for an icebreaker-based field experiment to the Arctic summer 2008, during the International Polar Year, funded by the *Swedish National Research Council* and the *Knut & Alice Wallenberg Foundation*
- Small-scale processes with large scale impacts, subprogram at the *Bert Bolin Climate Research Center* (formerly *Stockholm University Climate Research Environment*, SUCLIM), 2006 – 2012. "Linnaeus research program" funded by *FORMAS* and *Swedish National Research Council*
- Developing Arctic Modeling and Observing Capabilities for Long-term Environmental Studies (DAMOCLES), 2005 – 2010. Participant and Task Leader for the developing understanding on Arctic clouds. Funded by the *European Union 6th Framework Program*
- Arctic Regional Climate Model Intercomparison (ARCMIP), 2002 – 2008. Participating in Arctic regional modeling using the US Navy model COAMPS™. Funded by *SWECLIM* and the *Swedish National Research Council*
- Developing Improved Models of the Stable Boundary Layer Incorporating the Residual Layer Region, 2007 – 2009. Joint research project with Prof. Balsley, Colorado University, USA. *US National Science Foundation*
- Arctic Ocean Experiment 2001 (AOE-2001), 1999 – 2006. Responsible for the meteorological program on the icebreaker based field experiment to the Arctic, summer 2001. Funded by the *Nordic Council of Ministers*, *Swedish Polar Secretariat*, *Knut and Alice Wallenberg foundation* and the *Swedish Natural Research Council*
- Marine Effects of Atmospheric Deposition (MEAD), 2000-2003. Participant and Co-responsible for meteorological modeling. Funded by the *European Union 5th Framework Program*
- Swedish Regional Climate Modeling Programme (SWECLIM), 1998 - 2003. Subprogram manager with responsibility for model development. Funded by *MISTRA* and *SMHI*
- Transport Processes in the Coastal Atmospheric Boundary Layer, 1998 - 2000. Funded by the *United States Department of the Navy - Office of Naval Research*
- Coastal Air-Pollution Meteorology and Nutrient exchange (CAPMAN), 1997 – 2003. EUROTRAC-2
- NOPEX, sub-project 6: Turbulent fluxes in the atmospheric boundary layer (Airborne meteorological measurements), 1993 - 2000. Funded by the *Swedish Natural Research Council*, the *Nordic council of Ministers* and the *Swedish Air Force*
- Coastal-Waves 1996, 1996 - 1999. A field work/modeling program on US West-coast meteorology. Funded by *United States Department of the Navy, US Office of Naval Research*, the *Swedish Natural Research Council* and the *US National Science Foundation*
- Coastal Meteorology Accelerated Research Initiative, 1994 - 1998. Funded by the *US Office of Naval Research*
- A study of the effect of ocean-atmosphere coupling on the variability of the coastal sea and the marine atmospheric boundary layer, 1991- 1997. With Scripps Institution of Oceanography, La Jolla, and Desert Research Institute, Reno, in USA. Funded by the *Swedish Natural Research Council*
- Swedish program for Airborne meteorological measurements, 1990-92. Funded by the Swedish *Natural Research Council*

- Airborne measurements of mesoscale flow and spatial distribution of turbulence in Blekinge,1989 – 1990. Funded by the *Swedish Natural Research Council*, the Swedish *Program for Wind Energy* and the *Swedish Air Force*
- Development of a system for airborne meteorological measurements, 1985-89. Funded by *Knut and Alice Wallenberg Foundation*, the *Swedish Natural Research Council*, the *Swedish Program for Wind Energy* and the *Swedish Air Force*
- Mere Interieure, 1984-85. A precipitation climate investigation in Tunisia and Algeria. Funded by *SWECO Inc*, a subsidiary to VBB Inc.

Awards:

- Senior Scientist, Swedish Research Council, 1998-2006
- CIRES Visiting Fellowship, 2005-2006
- CIRES Distinguished Lecture, November 2005
- American Meteorological Society, Journal of Applied Meteorology Editors Award, January 2006
- Swedish Government Assiduity and Devotion Service Award, 2011.

Committees, board of experts etc.

- *Nansen Environmental and Remote Sensing Centre (NERSC)*, Bergen Norway, Scientific Council, member since 2014, Chair 2017 - present
- *EARTHSYSTEMS graduate program*, Portugal, member of the Science Advisory Committee, 2013 – present
- *Department of Meteorology, Stockholm University*, Head of Department (Prefekt), 1 August 2012 – 31 July 2015; Deputy Head of Department 1 January – 31 July 2012
- *Bolin Center for Climate Research* (formerly Stockholm University Climate Research Environment, SUCLIM, and Bert Bolin Center for Climate Research), Member of the Board, 2012 – 2015
- *Swedish National Committee for Global Environmental Change*, Swedish Academy of Sciences, 2012 – 2014
- *Arctic in Rapid Transition* (ART), member of the Science Advisory Committee, 2011 – present
- *International Arctic Science Committee* (IASC), Working Group on the Atmosphere, vice-Chair 2011 – 2014 and member 2011 - present
- *Swedish Secretariat for Environmental Earth System Studies* (SSEESS), Joint Swedish platform for ICSU/WCRP/IGBP activities, Royal Swedish Academy of Sciences, member of the Board, 2010 – 2014
- *International Meteorological Institute (IMI)*, Stockholm University, Director, 2010 – 2012
- *European Centre for Medium range Weather Forecast*, *Science Advisory Committee,* member 2006 **–** 2014 (vice Chair 2013-2014)
- *Bert Bolin Center for Climate Research* (formerly Stockholm University Climate Research Environment, SUCLIM), Core Theme Leader and member of Science Steering Group, 2006 – 2012
- *WCRP Assimilation and Observation Panel (WOAP)*, 2006 - 2011
- *Swedish National Committee for WCRP and IGBP*, Swedish Academy of Sciences, Chair 2004 - 2007
- *Arctic Summer Cloud Ocean Study (ASCOS)*, Chief Scientist, 2004 – 2013
- *International Study of Arctic Change* (ISAC), International Arctic Science Committee (IASC) and Arctic Ocean Science Board (AOSB), member of the Interim Science Steering Group, 2004 – 2005, Science Steering group, member 2006 – 2012 & Chair 2006 – 2010
- *American Meteorological Society* (AMS) *Coastal Environment Science and Technology Advisory Committee* (formerly Meteorology and Oceanography of the Coastal Zone), member, 2003 - 2010
- *Swedish National Committee on Geophysics and Geodesy*, Swedish Academy of Sciences, member, 1997 - 2005
- *AOE-2001*, Subprogram Manager and member of the Science Steering Group, 1999 – 2006
- *SWECLIM*, Subprogram Manager and member of Science Steering Group, 1998 – 2003
- *Swedish Natural Research Council*, International Review of Swedish Research in the Earth Sciences, Member of reference group 1994–1995
- *Swedish Environmental Protection Agency, Air Quality Committee,* (Naturvårdsverkets Forskningsnämnds Luftvårdskommitte), 1991 – 1996 (Chair 1992 – 1996)
- *Swedish Association of Scientists* (Sveriges Naturvetareförbund), Vice Chair, member of the Executive Committee and the board, 1984 – 1997

Consultant:

- *Swedish Meteorological and Hydrological Institute*: Liquid water content and visibility in stratus clouds and fog, an investigation for the location of a new major air port in Oslo, Norway, 1989 - 90

- *SAAB Military Aircraft Inc.* and *Swedish Defense Material Administration*: JAS aircraft development project, issues related to impact of atmospheric turbulence on the "fly-by-wire" aircraft control system, 1989 - 90
- *Bofors Missile Inc.* and *Swedish Defense Material Administration*: Measurements of liquid water in clouds, 1996
- *Vattenfall AB* and *Fylgia Attorneys at Law*: River fog at Hemavan airport, investigation for negotiations in the *Swedish Environmental Court*, 2002
- *Skellefteå municipality* and *Glimstedt Attorneys at Law*: Damages from extreme snow fall in Skellefteå 2010, investigation for court case against insurance company, 2012
- *Trygg Hansa Insurance, Legal Department*, Damage to infrastructure due to heavy snow fall in Värmdö, 2012

Other professional activities:

- The *State of the Arctic* conference, member of the organizing committee, co-convener of the 4th "International Day", March 2010 in Miami.
- Session co-convener for American Geophysical Union Fall Meeting, San Francisco: Union Session on "International Study of Arctic Change" (2008), Global Change Session on "Understanding and Responding to Pan-Arctic Environmental Change" (2009), and Global Change Session on "Science for a sustainable Arctic" (2010).
- Member of the jury at the "Young Scientists Exhibition", Stockholm April 1995.
- External reviewer or panel reviews: Research Council of Norway (RCN), US National Science Foundation (NSF), UK National Environmental Research Council (NERC), National Science and Environmental Research Council Canada (NSERC), US Atmospheric Radiation Program (ARM), UK Royal Society, AXA Funds and several other occasional services.
- Reviewer for science journals: *Nature Geoscience, Journal of Atmospheric Sciences*, *Journal of Applied Meteorology and Climatology*, *Journal of Atmospheric and Oceanic Technology*, *Journal of Climate, Bulletin of the American Meteorological Society*, *Monthly Weather Review*, *Boundary-Layer Meteorology*, *Climate Dynamics, Journal of Geophysical Research*, *Geophysical Research Letters*, *Tellus*, *Atmospheric Physics*, *Journal of Hydrology*, *Annales Geophysicae, Atmospheric Chemistry and Physics* and several other international journals
- Member of: Swedish Meteorological Society (SMS); American Meteorological Society (AMS); American Geophysical Union (AGU); European Geophysical Union (EGU); Swedish Geophysical Society (SGF); Royal Meteorological Society (RMetS).

Pedagogic experience and training:

- *Graduate teaching*:
  - Global Change, Part of (the so-called *Atmospheric week*), Uppsala University, 1998 and 2000
  - Mesoscale Meteorology, Stockholm University, 2000/2001
  - Boundary-Layer Meteorology, Stockholm University, 2002/2003, 2007, 2011 & 2016
  - Arctic processes, Part of: Atmospheric processes, SWECLIM summer colloquium at Bornö, 2003
  - Cloud Physics, Part of, *Boundary-Layer Clouds*, Stockholm University, 2006
  - Climate processes and modeling, Part of, *Arctic climate*, Stockholm University, 2008
  - Arctic Climate, Bolin Center Research School Summer Course in Abisko, member of organizing committee, teaching part of *Atmospheric processe*s, 2009 & 2011
- *Undergraduate teaching, course responsible & teaching*:
  - Introductory Fluid Dynamics, independent part of "Atmospheric Physics and Chemistry" at Uppsala University, 1995 – 1997, and at Stockholm University, 2000 – 2001
  - Dynamic Meteorology and Weather Forecast Models at Uppsala University, 1989 – 1996
  - Atmospheric Motion Systems, replacing "Dynamic Meteorology and Weather Forecast Models", "Numerical Methods in Meteorology" and "Mesoscale Meteorology", annually 1997 – 1998 at Uppsala University
  - Mesoscale Meteorology at Stockholm University, 1999, annually 2002 – 2004, 2010
  - Boundary-layer Meteorology at Stockholm University, annually 2005 – 2009
- *Other undergraduate teaching*:
  - Numerical Methods in Meteorology, partly, Uppsala University, 1991 – 1996;
  - Meteorology and Climatology, for Earth Science students, Uppsala University, 1994 – 1998
  - Geophysical Fluid Dynamics, Uppsala University, 1997 – 1998
  - Introductory Meteorology for Environmental Engineering program, parts of, *Dynamic Meteorology*, at Uppsala University, 1996 & 1997
  - Atmospheric Chemistry, overview of Dynamic Meteorology for Chemistry majors at Stockholm University, 2007 & 2008

- Overview of Meteorology for non-Science majors at Stockholm University, 2007 – 2008
- Climate Change, Introduction and overview of Meteorology, overview course twice annually at Stockholm University, twice annually 2010 – 2016.
- Climate system, Lectures on boundary layer meteorology in the climate system at Stockholm University, annually 2010 - 2013
- Climate Change, part of a course on Sustainable Engineering, Royal Technical University, Stockholm, 2009 - 2014
- Arctic Climate Processes, The Arctic boundary layer and clouds, SVALI intensive course, Uppsala University, 2012
- Arctic Meteorology and Climate, overview course at Physical Geography, Stockholm University, 2013

- *Other academic teaching*:
  - Thermodynamics and Boundary Layer Meteorology, national skill-development program for operational forecasters in the civilian and military weather services, Swedish Meteorological and Hydrological Institute, SMHI (1992-94);
- *Pedagogic training*:
  - Pedagogisk utbildning - med kurs i forskningsinformation for forskare (*Pedagogic education for scientists - including science information*), Uppsala University (1992);
  - First International Workshop on Computer Aided Learning in Meteorology, Hydrology and Oceanography, Boulder, Colorado, US, (July 1993);
  - Supervision of undergraduate thesis work, Uppsala University (1995);
  - Supervision of graduate students, Uppsala University (1996);
  - Supervision of graduate students, Stockholm University (2004, 2007)
- *Pedagogic leadership*:
  - *Weather-related issues, including flight safety*, responsible for teaching and training for permanent staff (civilian and uniformed) at Västgöta Air Force base (1980-88).
  - *Atmospheric Sciences and Oceanography*, Stockholm University, graduate program responsible, 2005 – 2010
  - *Undergraduate Students Counselor,* Stockholm University, 2009
- *Outreach*:
  - *Blogs*: Ran two blogs and a web-page during the Arctic Summer Cloud-Ocean Study (ASCOS), 2008
  - *Consultant*: On call commentator for Swedish Radio Ekot News Room during the COP21 negotiations in Paris, December 2015
  - *Climate change lectures/interviews*: various organizations and schools, about 2-10 times per year (examples in separate list below); local, regional and national media (magazines, newspapers, radio and TV) about 2 – 10 times per year; panel debates etc. 2-4 times per year
  - *Arctic climate*: various organizations and schools also about 2 – 5 times per year (see separate list below).

Supervision:

- Supervisor, undergraduate theses (BSc): Caroline Tollstadius, Stockholm University, 2009; Sara Brattström, Stockholm University, 2009; Samuel Cedving, Stockholm University, 2009; Karin Jonsson, Stockholm University, 2009; Caroline Lindberg, Stockholm University, 2009; Henrik Sjöman, Stockholm University, 2011; Fredrik Janson, 2013.
- Supervisor, undergraduate theses (MSc): Lars Pålsson, Uppsala University, 1991; Patrick Samuelsson, Uppsala University, 1992; Linda Ström, Uppsala University, 1994; Ulf Andrae, Uppsala University, 1995; Stefan Söderberg, Uppsala University, 1999; Anna Rune, Uppsala University, 1999; Pontus von Shoenberg, Stockholm University, 2002; Malin Tindberg, Stockholm University, 2004; Jan Näs, Stockholm University, 2004; Pehr Meldert, Stockholm University, 2005; Linda Hildeberg, Stockholm University, 2006; Henrik Braathen, Stockholm University, 2008; Samuel Cedving, Stockholm University, 2011; Muhammad Kaleem, Stockholm University, 2011; Pjotr Kupiszewski, Stockholm University, 2011; Eva Hallin, Stockholm University, 2012.
- Ph.D. supervisor (ongoing): Erik Johansson (@ SMHI) 2012 – (2018), Cheng You, 2017 – (2022).
- Ph.D. supervisor (completed):
  1. Patrick Samuelsson, 1993 – 1999: Graduated March 1999, first postdoc at Stockholm University, now researcher at the research department, Swedish Meteorological and Hydrological Society.
  2. Linda Ström, 1995 – 1999: graduated October 1999, postdoc at DLR, Germany, now at Volvo Aviation Trollhättan.
  3. Zhiqiang Cui, 1995 – 1996: One-year visiting student from PRC to Uppsala University, depended thesis in UK, now at Leeds University, UK.

4. Ragothaman Sundararajan, 1997 – 2001: Graduated October 2001, post-doc at DRI/UNR and MIT, now software engineer at Plazers Consulting, India.
5. Stefan Söderberg, 1999 – 2004: Graduated March 2004, post-doc at Stockholm University, now founder and owner of WeatherTech Consulting, Uppsala, Sweden.
6. Admir Taragino, 2000 – 2002: Graduated 2006 at other department at Stockholm University, now professor at UTFPR in Brazil.
7. Rune Grand Graverssen, 2003 – 2008: Graduated May 2008, postdoc at KNMI in The Netherlands, and at Stockholm University, now Professor at University of Tromsö, Norway.
8. Joseph Sedlar, 2006 – 2010: Graduated December 2010, multiple research positions at Swedish Meteorological and Hydrological Society and Stockholm University, now at University of Colorado.
9. Raza Ranjha, 2009 – 2013: Graduated October 2013, postdoc at Lund University, then software engineer at his own company.
10. Cecilia Wesslén, 2010 – 2013: Graduated with Licentiate degree October 2013, now student councilor at Stockholm University.
11. Jacob Svensson, 2013 – 2015: Assistant supervisor, graduated with Licentiate degree May 2015, now at Swedish Airforce METOCC, Enköping, Sweden.
12. Marie Kapsch, 2011 – 2015: Graduated October 2015, now postdoc at Max-Planck in Hamburg.
13. Abubakr Salih, 2009 – 2015: Graduated December 2015, now at IGAD Climate Prediction and Application Center, Nairobi, Kenya.
14. Georgia Sotiropoulou, 2012 – 2016: Graduated November 2016, now at University of Athens, Greece.
15. E. Harmacher-Barth, 2009 – 2017: Assistant advisor, graduated February 2017.
16. Petter Lind, 2012 – 2017: Assistant advisor, graduated April 2017, now researcher at Swedish Meteorological and Hydrological Society research department.

- Faculty Opponent on PhD examinations: Douglas Nilsson (Stockholm University), 1997; Idar Barstad (University of Bergen, Norway), 2002; Jan Willem de Berg (Utrecht University, Holland), 2008; Ari-Juhanni Punkka (University of Helsinki), 2015.
- Serving on PhD examination committees: Alberto Rondon, 1993; Elias Holm, 1994; Hong Lin, 1996; Nils Gustafsson, 1997; Erik Kjellström, 1998; Annica Ekman, 2001; Oskar Parmhed, 2004; Peter Tunved, 2004; Esben Almqvist, 2006; Enrico Deusebio, 2014.
- Post-doctoral collaboration: Branko Grisogono, 1993 – 1996; Patrick Samuelsson, 1999 – 2000; Mark Žagar, 2000 – 2004; Stefan Söderberg, 2004 – 2006; Thorsten Mauritsen, 2007 – 2009; Florence Bocquet, 2007 – 2009; Per Axelsson, 2009 – 2010; Rune Grand Graverssen, 2010 – 2011; Erik Svensson, 2011 – 2013; Bishma Tyagi, 2011 – 2014; Julien Savre, 2011 – 2014; Joseph Sedlar, 2012 – 2016.

Invited scientific presentations:

1. Sea ice and atmosphere interactions; implications for the Arctic Earth System. Polar Ocean Day, Academy of Sciences, Oslo, 30 January, 2018.
2. The Arctic Clouds in Summer Experiment – ACSE. CORDEX-Arctic workshop, Cambridge, 18-20 October 2017, (invited presentation).
3. Arctic Climate change. PAME workshop in Marine Protected Areas, 21-22 September 2017, Helsinki, Finland (key note presentation).
4. Observation and monitoring in the Arctic - The atmosphere: Arctic Science Networking Workshop, August 30 – 1 September 2017, Helsinki, Finland (key note presentation).
5. Arctic summer air-mass transformation - Effects on the surface energy budget: NCAR/MMM, 1 June 2017 (invited seminar).
6. Why we need to worry about clouds in the Arctic, Duke University, 24 October 2016 (invited seminar).
7. Expected – and some less expected - effects of clouds in the Arctic climate system, NCAR/MMM, 18 August 2016 (invited seminar).
8. Arctic Climate Across Scales (ACAS): YOPP Planning Meetings on Arctic Observations and the Modelling Component, 5–9 September 2016, Reading, UK, ECMWF.
9. Some expected - and some less expected - effects of clouds in the Arctic climate system, University of Oxford, 28 April 2016 (invited seminar).
10. There and back again - or - The Arctic longwave cloud radiative effect paradox, University of Helsinki, 10 December 2016 (invited seminar).
11. The role of clouds in shaping Arctic climate, High-Latitude Dynamics Workshop, Rosendal, 23-27 March, 2015 (invited presentation).
12. Why modelers should care about field campaigns, ECMWF and THORPEX joint workshop on "Polar Prediction", Reading, UK, 24 – 28 June 2013 (invited presentation).

13. The cloudy atmospheric boundary layer over the Arctic Ocean, MOSAiC workshop, Boulder, USA, 25 - 28 July, 2012 (invited presentation).
14. High latitude campaigns and model results (impact of ice and snow). ECMWF and GABLS joint workshop on "Diurnal cycles and the stable atmospheric boundary layer", Reading, UK, 7 – 10 November 2012 (invited presentation).
15. Arctic climate processes and their model representation. WCRP and WGNE Workshop on "Physics of Weather and Climate Models", March 20-23, 2012, Pasadena, California (key note presentation).
16. Arctic cloud and boundary layer processes in observations (and modelling), AIDA workshop, 27-28 September, 2011, Potsdam, Germany (invited presentation).
17. Can Arctic sea-ice melt be explained by atmospheric meridional transports? American Geophysical Union Fall Meeting, 13-17 December, 2010, San Francisco, California (invited presentation).
18. Boundary-layer and aerosol/cloud interaction in central Arctic summer observed during ASCOS. American Geophysical Union Fall Meeting, 13-17 December, 2010, San Francisco, California (invited presentation).
19. International Arctic science – a vision for the future, State of the Arctic conference, 16-19 March, 2010, Miami, Florida (key note presentation).
20. Arctic small-scale processes – Confronting models with reality, DAMOCLES International Symposium on the *Arctic Climate system, its present status, future evolution and potential impacts*, Brussels, November 2010 (key note presentation).
21. Is every 50 years enough? What – and how – did we learn from the International Polar Year? American Meteorological Society's *10th Conference on Polar Meteorology and Oceanography*, May 2009, in Madison, Wyoming (key note presentation).
22. ASCOS – The Arctic Summer Cloud-Ocean Study. American Geophysical Union Fall Meeting, San Francisco, December 2008, (invited presentation).
23. The Vertical Structure of the Arctic Atmosphere, and some words on one Swedish contributions to IPY. AMAP workshop on "*The use of Unmanned Aerial Vehicles (UAV) for Arctic Research*", April 2008, Stockholm (invited presentation).
24. What (little?) do we know about the Arctic atmosphere? *Global environmental change: The role of the Arctic*. ESF-VR-Formas conference, October 2007, Nynäshamn Sweden (key note presentation).
25. Small-scale Dynamic Processes. *Polar Dynamics Symposium*, celebrating the 60th Anniversary of the Department of Geoscience at the University of Bergen, August 2007, Bergen (key note presentation).
26. Why should we trust climate models in the Arctic? *Arctic Forum 2007*, Annual ARCUS meeting, May 2007, Washington DC (invited presentation).
27. Climate change in the Arctic. March 2007, Kristanstad University College (invited lecture).
28. Climate simulations – Computational physics or hokus-pokus? KTH Computational Science and Engineering Centre, Royal Technical University, September 2005, Stockholm (invited lecture).
29. So what is so special about Arctic clouds? *CIRES Distinguished Lecture*, November 2005.
30. Are coastal atmospheric boundary layers modeled sufficiently good for small-scale coupling to the coastal ocean? *NURC Workshop on High Resolution Coupled Coastal Prediction Systems*, 28 November – 2 December, La Spezia, Italy (invited presentation).
31. So what is so special about Arctic clouds? *ARM Science Team Meeting*, March 14-18 2005, Daytona Beach (key note presentation).
32. Coastal and Polar Atmospheric Regional Modeling – How good are our models? Joint Session of the 6th Conference on Coastal Atmospheric and Oceanic Prediction and Processes and 8th Conf on Polar Meteorology and Oceanography, AMS Annual Meeting, San Diego, 9 – 12 January 2005 (invited presentation).
33. The summertime Arctic boundary layer from AOE2001, May 2003, NOAA/ETL, Boulder, USA (invited seminar).
34. The summertime Arctic boundary layer from AOE2001. May 2003, Naval Postgraduate School, Monterey, USA (invited seminar).
35. The fascinating Arctic 2: A COAMPS-simulation of the SHEBA-year, April 2003, Naval Research Laboratory, Monterey, USA (invited seminar).
36. The fascinating Arctic 1: The summertime Arctic boundary layer from AOE2001. April 2003, Naval Research Laboratory, Monterey, USA (invited seminar).
37. Mesoscale meteorology - is it important and can it be defined? June 2002, NATO Advanced Science Workshop on "Air pollution on regional scale", Kalithea, Greece (key note presentation).
38. Mesoscale coastal flows. February 2002, Department of Geophysics, University of Bergen (invited seminar).

39. The mesoscale effect on the boundary layer by a small lake, April 2000. NOAA/AL, Boulder, Colorado, USA (invited seminar).
40. The mesoscale effect on the boundary layer by a small lake, April 2000. Desert Research Institute, Reno, Nevada, USA (invited seminar).
41. High-resolution numerical simulations of coastal atmospheric boundary layer flow. The "50 years of Office of Naval Research contribution to international oceanography" special session, The Oceanographic Society meeting, Amsterdam, July 8-11 1996 (invited poster).

Invited public (popular) presentations:

1. Meteorologi, klimat & utvecklingen i Arktis. (in Swedish, *Meteorology, climate and the Arctic development*), Tumba Senior High school, 4 December 2017.
2. Climate change in the Arctic: Reasons for being worried…? (in English, *Klimatförändringar i Arktis: Orsak till oro*), Arctic Climate; Hot topic, Association of Former European Parliamentarians, Annual Meeting, Stockholm, Swedish Parliament Hall, Stockholm, 5 June 2016.
3. Hur svårt kan det vara? Om klimatkunskap och svåra beslut (in Swedish, *Hur difficult can it be? About climate understanding and tough decisions*), Almedalen, Gotland, 4 July 2016.
4. "There and back again": En forskares berättelse om en resa till ishavet, (in Swedish, *There and back again: A scientists tale about an adventure to the Arctic*), Swedish Meteorological and Hydrological Institute, 17 December 2015 (invited seminar).
5. "There and back again": En forskares berättelse om en resa till ishavet, (in Swedish, *There and back again: A scientists tale about an adventure to the Arctic*), SMHI/Armed Forces Meteorological conference, 30 September 2015.
6. Meteorologi: vad är det och hur bra är väderprognoser? (in Swedish, *Meteorology: what is it and how good are weather forecast?*), Senior University Göteborg, 7 May 2015.
7. The Arctic – Hot or Cold (in English, *Arktis – Varmt eller kallt*): May 19–20 2015, House of Sweden, Swedish Embassy Washington, DC, USA
8. What does science tell us about climate change? (in English, *Vad säger oss vetenskapen om klimatförändringarna?*), Symposium on Challenges and opportunities in renewable energy in the next 100 years, Luleå Tekniska Universitet, 19 March 2015.
9. Meteorologi: Kan kaos i vädret vara en tillgång? (in Swedish, Meteorology: *Can chaos in the weather be an asset?*), Senior University Stockholm, 3 November 2014.
10. Vad menas med växthusffeken – och hur påverkar den klimatet, (in Swedish, *What is the greenhouse effect – and how does it impact the climate*), Foresta Rotary, Lidingö, March 2014.
11. Meteorologi, vad är det? Och vad har det med Arktis att göra?, (in Swedish, *What is Meteorology, and what does it have to do with the Arctic*), Uppsala Musikklasser, Uppsala, January 2014.
12. Klimatforskning om – och i – Arktis, (in Swedish, *Climate Research on and in the Arctic*), DGE Mark & Miljö, Kalmar December 2013.
13. Klimatförändringar: Några huvuddrag från IPCC 2013, (in Swedish, Climate Change: *Main messages from IPCC 2013*), The Scandinavian Tire and Rim Association, Stockholm, December 2013.
14. Klimatförändringar: Några huvuddrag från IPCC 2013, (in Swedish, *Climate Change: Main messages from IPCC 2013*), SWECO AB, Stockholm, December 2013.
15. Några reflektioner – mina – kring IPCC (in Swedish, *Some reflections – mine – on IPCC*), Swedish Environmental Protection Organization, October 2013, Stockholm.
16. Meteorologi, vad är det(?), och klimat – i Arktis (in Swedish, *Meteorology, what is it(?), and Climate – in the Arctic*), TioTrettion for schools at Kulturhuset, Stockholm, April 2013.
17. Klimatförändringar i Arktis (in Swedish, *Arctic Climate Change*), Greenpeace Action for Arctic Day, Kulturhuset Stockholm, April 2013.
18. The kända, det kända okända, och det okänt okända – om osäkerhet inför IPCC (in Swedish, *The known, the known unkowns, and the unkown unkowns – on uncertainty for IPCC*), Swedish Environmental Protection Organization, May 2013, Stockholm.
19. Klimatforskning om - och i – Arktis (in Swedish, *Climate research about – and in – the Arctic*), Salem public library "Science Café", March 2013.
20. Arctic Clouds: Links to weather and climate, (in English, *Moln i Arktis: Kopplingar till väder och klimat*), Senior Arctic Officials to the Arctic Council, Swedish State Department, 5 November, 2012.
21. Klimatet i Arktis – Vad händer och varför? (in Swedish, *Arctic climate – what is happening and why?*), Global Challenge "Arctic policy", May, 2011.
22. The Climate Issue : Challenges for Industrial Society - a State of the Art lecture on Climate Science, (in Enlish, *Klimatfrågan: utmaningar för industrisamhället – en "state-of-the-art" föreläsning om klimatvetenskap*), Royal Technical University, Stockholm, May 2011.

23. Climate and weather – projections and forecasts: What can we say about the future?, (*in English, Klimat och väder – projektioner och prognoser: Vad can vi saga om framtiden?*), Handelsbanken Agricultural Day, Svaneholms Castle, 7 April 2011, Skurup.
24. Vad händer med klimatet? (In Swedish, *What is happening with the climate?*), Uppsala Senior's University, Uppsala University, 5 April 2011, Uppsala.
25. Klimatet på hal is (In Swedish, *Climate on this ice*), Swedish Environmental Protection Organization, Järfälla Chapter, February 2011, Järfälla.
26. The Climate Issue : Challenges for Industrial Society - a State of the Art lecture on Climate Science. (in Enlish, *Klimatfrågan: utmaningar för industrisamhället – en "state-of-the-art" föreläsning om klimatvetenskap*), Royal Technical University, Stockholm, May 2010.
27. Klimatet i Arktis; en forskares vardag, (In Swedish, *Arctic climate change; a scientist's perspective*), Stockholm Senior University, March 2010, Stockholm.
28. Klimatet – Jordens och debattens. En forskares tankar om IPCC. (In Swedish, *The Climate – of the Earth and in the debate*), Swedish Parliament, March 2010, Stockholm.
29. Mänskliga klimatförändringar – Varför skall det vara så svårt att veta helt säkert? (In Swedish, *On climate change – why is it so difficult to know for certain?*). Upplands-Bro Rotary, February 2010, Upplands Bro.
30. Vår påverkan på klimatet – Varför skall det vara så svårt att veta helt säkert? (In Swedish, *Our impact on climate – why is it so difficult to know for certain?*). Chalmers, March 2010, Gothenburg.
31. Mänskliga klimatförändringar – Varför skall det vara så svårt att veta helt säkert? (In Swedish, *On climate change – why is it so difficult to know for certain?*). Uppsala University, March 2010, Uppsala.
32. Mänskliga eller naturliga klimatförändringar – Varför skall det vara så svårt att veta helt säkert? (In Swedish, *Human or natural climate change – why is it so difficult to know for certain?*). Swedish Association of Academic Professional, November 2010, Stockholm.
33. Arktiska sommarmoln, ASCOS, (in Swedish, *Arctic summer clouds, ASCOS*), Swedish Meteorological Society, 19 September, 2009.
34. Klimatförändringar i Arktis och forskningsexpeditioner – hur hänger de ihop? (In Swedish, *Arctic climate change and research expeditions – how are they linked?*), Ishotellet Jukkasjärvi, February 2009.
35. Mänskliga klimatförändringar – Varför skall det vara så svårt att veta helt säkert? (In Swedish, *On climate change – why is it so difficult to know for certain?*). Svenska Handelsbankens "Stora klimatdag", 19 October 2007, Stockholm.
36. Globala klimatförändringar – dagens kunskapläge (*Global Climate Change – what do we know today?*), Swedish Nature Protection Organization (SNF) General Assembly, Luleå, June 2007.
37. Om klimatförändringar – varför ska det vara så svårt att veta säkert? (In Swedish, *On climate change – why is it so difficult to know for certain?*). Teknik och Naturvetenskap, open lecture series at Kristianstad University College, 2007.
38. Klimatförändringar i Arktis – vad vet vi och varför skall vi bry oss? (*Climate change in the Arctic – Why should we bother*?) Café Ledande Forskning, Augusti 2006, Stockholm University.
39. Extremer och medelvärden. Hur kan vi säga om - och hur - klimatet förändras (In Swedish, *Extremes and mean values. How can we tell if – and how – the climate changes*), November 2004, Center of environment and development studies, Uppsala University & Swedish Agricultural University.
40. Klimatförändringar som naturkatastrof (*Climate change as a natural disaster*), November 2004, Dept Physical Geography, Stockholm University.
41. Klimatförändringar i Arktis – results from ACIA (In Swedish, *Climate change in the Arctic – Results from ACIA*), October 2004, Swedish Polar Research Secretariat 20th Anniversary, Stockholm.
42. Extremer och medelvärden (och katastrofer). Hur kan vi säga om - och hur - klimatet förändras (In Swedish, *Extremes and mean values. How can we tell if – and how – the climate changes*), November 2004, Department of Physical Geography, Stockholm.
43. Klimatförändringar i Arktis – Varför skall vi bry oss? (*Climate change in the Arctic – Why should we bother?*), August 2004, Alfred Nobel Research School for senior high-school students, Karlskoga.
44. Klimatförändringar i Sverige (In Swedish, *Climtate change in Sweden*), October 2003, Haninge Rotary.
45. Arctic Ocean 2001: Intryck från en forskningsresa till en mycket märklig – och vacker – plats (In Swedish, *Arctic Ocean 2001 – impressions from a research journey to a very special – and beautiful place*), October 2003, Swedish Meteorological Society, Uppsala.
46. Vad händer med Sveriges klimat (In Swedish, *What happens to the Swedish climate*), August 2003, Alfred Nobel Research School for senior high-school students, Karlskoga.
47. Klimatförändringar ur ett nordiskt perspektiv (In Swedish, *Climate change from a Noridc perspective*), November 2002, Klimat och Miljöforum, Kiruna.
48. Medelvärden eller extremer. Hur kan vi säga om - och hur - klimatet förändras (In Swedish, *Mean values or extremes. How can we tell if – and how – the climate changes*), November 2002, Forum Ångström, Uppsala.

49. Klimatmodeller som arbetsverktyg (In Swedish, *Climate models as a tool*), October 2002, Miljöforum, Norrköping.
50. Arctic Ocean Experiment 2001: Intryck från resa till en mycket märklig – och vacker – plats. October 2001, Äventyrarnas Förening, Stockholm.
51. Intryck från Arktis (In Swedish, *Impressions from the Arctic*), Swedish Air Force Weather Service Annual Research and Development Meeting, April 2001, Stockholm.
52. Resultat från Nopex (In Swedish, *Results from Nopex)*, Swedish Air Force Weather Service Annual Research and Development Meeting, Stockholm, April 2001, Sweden.
53. Sweclim – Svensk klimatmodellering (In Swedish, *Sweclim – Swedish climate modeling)*, Swedish Air Force Weather Service Annual Research and Development Meeting, Stockholm, April 2001, Sweden.
54. Klimatet i Norden (In Swedish, *The Nordic climate*): February 2001, Näringslivets Miljöchefer (Environmental Controlers in Sweden), Naturskyddsverket (Swedish EPA) and World Watch Institute, Stockholm.
55. Det växlande klimatet (In Swedish, *The varying climate*): October 2000, Swedish Nature Protection Organization (*Svenska Naturskyddsföreningen*) Annual Meeting, Stockholm.