

Prof. Dr. Thomas Spengler
Department of Atmospheric and Cryospheric
Sciences
Faculty of Geo- and Atmospheric Sciences
University of Innsbruck
Innrain 52f
6020 Innsbruck
Austria

☎ +43 512 507-54404

✉ thomas.spengler@uibk.ac.at

<https://www.uibk.ac.at/en/acinn/people/thomas-spengler>

Thomas Spengler

Professor

PERSONAL INFORMATION

Date of Birth	September 4, 1978
Place of Birth	Munich, Germany
Nationality	German
Civil Status	Unmarried
ORCID	0000-0002-1747-6385
Languages	German (mother tongue), English (proficient), Norwegian (proficient)

PROFESSIONAL EMPLOYMENT

6/2026 – today	Professor, Atmospheric Dynamics , <i>Department for Atmospheric and Cryospheric Sciences</i> , University of Innsbruck, Austria.
6/2026 – today	Adjunct Professor , <i>Geophysical Institute</i> , University of Bergen, Norway.
9/2014 – 5/2026	Professor, Dynamic Meteorology , <i>Geophysical Institute</i> , University of Bergen, Norway.
10/2025 – 4/2026	Visiting Scientist , <i>Monash Atmospheric Science</i> , <i>Monash University</i> , Melbourne, Australia.
7/2015 – 12/2024	Director of Norwegian Research School on Changing Climates in the Coupled Earth System , <i>Geophysical Institute</i> , University of Bergen, Norway.
1/2020 – 12/2023	Adjunct Professor , <i>Arctic Geophysics</i> , University Centre in Svalbard, Norway.
7 – 12/2015	Visiting Scientist , <i>Environmental Sciences</i> , <i>University of East Anglia</i> , Norwich, United Kingdom.
9/2010 – 9/2014	Associate Professor , <i>Geophysical Institute</i> , University of Bergen, Norway.
9/2009 – 5/2011	Postdoctoral Research Associate , <i>Atmospheric and Oceanic Sciences Program</i> , <i>NOAA Geophysical Fluid Dynamics Laboratory</i> , Princeton University, New Jersey, USA. Group of Prof. Dr. Isaac M. Held
2/2009	Visiting Scientist , <i>Monash Atmospheric Science</i> , <i>Monash University</i> , Melbourne, Australia. Group of Prof. Dr. Michael J. Reeder
10/2008 – 8/2009	Postdoctoral Research Assistant , <i>Institute for Atmospheric and Climate Science</i> , Department of Environmental Systems Science, ETH Zurich, Switzerland.

- Group of Prof. Dr. Huw C. Davies
- 6/2005 – 9/2008 **Doctoral Research Assistant**, *Institute for Atmospheric and Climate Science*, Department of Environmental Systems Science, ETH Zurich, Switzerland.
- Group of Prof. Dr. Huw C. Davies
- 11/2004 – 5/2005 **Research assistant**, *Meteorological Institute Munich*, University of Munich, Germany.
- Group of Prof. Dr. Joseph Egger
- 11 – 12/2002 **Research assistant**, *School of Mathematical Sciences*, Monash University, Melbourne, Australia.
- Group of Prof. Dr. Michael J. Reeder
- 9/2001 – 1/2002 **Research assistant**, *Meteorological Institute Munich*, University of Munich, Germany.
- Group of Prof. Dr. Roger K. Smith

EDUCATION

- 6/2005 – 9/2008 **Doctorate in Atmospheric Science (Dr. sc. ETH Zurich)**, *Institute for Atmospheric and Climate Science*, Department of Environmental Systems Science, ETH Zurich, Switzerland.
- Doctoral Thesis *Influence of the ambient flow upon Rossby wave propagation between the tropics and extra-tropics*
- Supervisor Prof. Dr. Huw C. Davies
- 9/2001 – 5/2005 **Diploma/Master in Meteorology (Dipl. Met)**, *Meteorological Institute Munich*, Faculty of Physics, University of Munich, Germany.
- Diploma Thesis *The Dynamics of Heat Lows in simple background Flows*
- Supervisor Prof. Dr. Roger K. Smith
- 2 – 10/2002 **Honours in Atmospheric Sciences (supported by a DAAD scholarship)**, *School of Mathematics*, Monash University, Melbourne, Australia.
- Honours Thesis *Development and Deformation of Heat Lows with Applications to Prefrontal Westerly Troughs in Australia*
- Supervisor Prof. Dr. Michael J. Reeder
- 2/2002 **Summer School for Dynamic Meteorology**, *School of Mathematics*, Monash University, Melbourne, Australia.
- 9/1999 – 9/2001 **Intermediate Diploma in Meteorology**, *Meteorological Institute Munich*, Faculty of Physics, University of Munich, Germany.
- 6/1998 **Abitur (general qualification for university entry)**, *Max Planck Gymnasium*, Munich, Germany.

INTERNSHIPS

- 10 – 12/2004 **Institute for Atmospheric and Climate Science**, *ETH Zurich*, Switzerland.
- Group of Prof. Dr. Huw C. Davies
- 2 – 4/2004 **Alfred Wegener Institute for Polar and Marine Research**, *AWI Bremerhaven*, Germany.
- Group of Dr. Ursula Schauer

SCHOLARSHIPS AND AWARDS

- 2013 Best Lecturer at the Faculty for Mathematics and Natural Sciences (University of Bergen)
- 2013 Nominee for the Early Career Science Medal of the International Association for Meteorology and Atmospheric Science (IAMAS)
- 2002 DAAD Scholarship (German Academic Exchange Service)
- 2001 Oskar-Karl-Forster Scholarship

TRAINING FOR TEACHING, RESEARCH, AND LEADERSHIP

- 2021 Making instructional vidoes (University of Bergen)
- 2014 Training Course in Academic Leadership (University of Bergen)
- 2010 Grading as a Teaching Tool (Princeton University)
- 2010 PROF 101: Entering the Professoriate (Princeton University)
- 2010 Managing Time: Making the Most of Your Summer Research and Writing (Princeton University)
- 2009 Writing Your Statement of Teaching Philosophy (Princeton University)
- 2009 Designing a course (Princeton University)
- 2008 Project management for supervising bachelor and master thesis (ETH Zurich)
- 2008 Rhetoric tools for teaching (ETH Zurich)
- 2008 Rhetoric for seminar and lecture (ETH Zurich)
- 2007 Presenting-Publishing-Communicating (ETH Zurich)
- 2007 Didactics workshop (Presenting-Teaching-Communicating) (ETH Zurich)
- 2006 How to write and publish a scientific paper (ETH Zurich)

TEACHING

- MSc/PhD Advanced Atmospheric Dynamics (University of Bergen), 2016-2025
- BSc Polar Meteorology and Climate (University Centre in Svalbard), 2015-2025
- MSc/PhD Seminar in Atmospheric Sciences (University of Bergen), 2014-2025
- MSc/PhD The Arctic Atmospheric Boundary Layer and Local Climate Processes (University Centre in Svalbard), 2014-2025
- MSc Mesoscale Dynamics (University of Bergen), 2011-2025
- PhD Scientific Writing Workshop (Norwegian Research School), 2011-2025
- MSc Dynamics of the Atmosphere (University of Bergen), 2011-2014
- PhD Basic Meteorology (ResClim Workshop on Outreach to High-School Students), 2013
- PhD Mountain Meteorology (Advanced Climate Dynamics Courses), 2012
- MSc Methods in Weather Forecasting (University of Bergen), 2014
- MSc The General Circulation of the Atmosphere [Teaching Assistant] (Princeton University), 2010
- MSc Dynamics of large scale atmospheric flow [Teaching Assistant] (ETH Zurich), 2007-2009
- MSc Weather Discussion (ETH Zurich), 2007-2009
- BSc Mathematics, Algebra, and Calculus (New Jersey State Prison), 2010
- BSc Environmental Fluid Dynamics Part I [Teaching Assistant] (ETH Zurich), 2006-2009
- BSc BSc Seminar: Atmosphere and Climate (ETH Zurich), 2006-2009

FIELD EXPERIMENTS

- 11/2021 One Ocean Expedition (Statsraad Lehmkuhl), Caribbean
- 3/2018 Iceland Greenland Sea Project (IGP), Iceland
- 10/2016 North Atlantic Waveguide and Downstream Impact Experiment (NAWDEX, NEAREX, EPATAN), Iceland

- 3/2013 Aerosol Cloud Coupling And Climate Interactions in the Arctic (ACCACIA), Sweden
- 10/2008 Irminger Sea Cruise Kn194 with the Research Vessel Knorr, Irminger Sea
- 3/2008 IPY-Thorpex Andøya-campaign, Norway
- 8/2007 Flow over and around Hofjökull Experiment (FLOHOF), Iceland
- 7 – 8/2005 Allgäu Experiment (AllgEx), Germany
- 9/2004 Arctic Cruise ARK XX/3 with the Research Vessel Polarstern, Polar Sea
- 10/2002 Gulf Line Experiment (GLEX), Australia

FUNDING

Overall external funding: 74 Mio NOK (ca. 7 Mio EUR)

- 2022 – today
lead PI Atmosphere-Ocean Interactions over Key Regions of the Arctic and Their Linkages to Midlatitudes (ARCLINK), Norwegian Research Council: 10.0 Mio NOK
- 2021 – today
lead PI Bias Attribution Linking Moist Dynamics of Cyclones and Storm Tracks (BALMCAST), Norwegian Research Council: 12.0 Mio NOK
- 2015 – today
lead PI Norwegian Research School on Changing Climates in the Coupled Earth System (CHESS), Norwegian Research Council: 19.5 Mio. NOK
- 2018 – 2021
co-PI Atmosphere-Ocean-Ice Interactions in Polar and sub-polar Regions (AOI), Bjerknes Centre for Climate Research: 10.0 Mio. NOK
- 2017 – 2020
lead PI UNifying Perspectives on Atmosphere-Ocean Interactions during CyClone Development (UN-PACC), Norwegian Research Council: 9.4 Mio NOK
- 2016
lead PI NEAREX, in partnership with NAWDEX (North Atlantic Waveguide and Downstream Impact Experiment), EUFAR: 10 flight hours with French Safire Falcon including 20 dropsondes
- 2015 – 2018
lead PI Partnership between Norway and Japan for excellent Education and Research in Weather and Climate Dynamics, Norwegian Research Council: 3.5 Mio. NOK
- 2015
lead PI Workshop on the Dynamics of Atmosphere-Ice-Ocean Interactions in High Latitudes, University of Bergen, Norwegian Research Council, Norwegian Research School in Climate Dynamics, International Arctic Science Committee, Polar Prediction Project, International Association of Meteorology and Atmospheric Science, MET Norway: total 450 kNOK
- 2011– 2015
lead PI Scientific Writing Workshop, Norwegian Research School in Climate Dynamics: 150 kNOK annually
- 2012 – 2016
lead PI High Impact Weather in the Arctic (HIMWARC), Marie Curie - Career Integration, European Commission: 100 kEUR
- 2011 – 2014
lead PI Personal overseas research grant for the NORKLIMA funded project HIMWARC, Norwegian Research Council: 49 kNOK
- 2011
lead PI Ice edge front, University of Bergen: 63.6 kNOK
- 2011
lead PI IT infrastructure for Centre for Climate Dynamics, Centre for Climate Dynamics: 570 kNOK
- 2011 – 2016
lead PI High Impact Weather in the Arctic (HIMWARC), Norwegian Research Council: 7 Mio NOK

MEMBERSHIP IN PROFESSIONAL ASSOCIATIONS

- 2006 – today European Geophysical Union (EGU)
- 2003 – today German Meteorological Society (DMG)
- 2021 – today Norwegian Geophysical Society (NGS)
- 2016 – 2018 American Geophysical Union (AGU)
- 2009 – 2019 American Meteorological Society (AMS)
- 2011 – 2018 Bergen Geophysical Society (BGS)
- 2001 – 2008 Australian Meteorological and Oceanographic Society (AMOS)

COMMISSION OF TRUST

- 2024 – today European Space Agency Mission Advisory Group member for Earth Explorer Mission 11, WIVERN
- 2024 – today World Weather Research Program - Predictability, Dynamics and Ensemble Forecasting Working Group and Polar Coupled Analysis and Prediction for Services Project, member
- 2012 – today International Commission for Dynamic Meteorology (ICDM) of the International Association of Meteorology and Atmospheric Sciences (IAMAS), 2017-2019 elected vice president and since 2019 elected president of the ICDM
- 2022 – today Norwegian National Committee for the International Union of Geodesy and Geophysics (IUGG), Correspondent for the International Association of Meteorology and Atmospheric Sciences IAMAS
- 2022 – today Norwegian Geophysical Society (NGS), president
- 2024 – 2025 npj Climate and Atmospheric Science, Associate Editor
- 2014 – 2021 Atmospheric Working Group (AWG) of the International Arctic Science Committee (IASC), 2015-2019 elected chair of the AWG
- 2011 – 2015 Bergen Geophysical Society (BGS), secretary

ADMINISTRATIVE AND OTHER DUTIES

Research leadership

- 2010 – 2026 Head of group for Dynamic Meteorology at the Geophysical Institute, University of Bergen
- Research Projects (see also Funding) Lead PI: Atmosphere-Ocean Interactions over Key Regions of the Arctic and Their Linkages to Midlatitudes (ARCLINK), Bias Attribution Linking Moist Dynamics of Cyclones and Storm Tracks (BALMCAST), UNifying Perspectives on Atmosphere-Ocean Interactions during CyClone Development (UNPACC), High Impact Weather in the Arctic (HIMWARC)
- Research Projects (see also Funding) Co-PI of Atmosphere-Ocean-Ice Interactions in Polar and sub-polar Regions
- 2019 – 2020 Leader of Nextstep - Collaborative project between the Bjerknes Center for Climate Research and the Bergen Philharmonic Orchestra, featuring a jointly organised concert series including science outreach
- 2015 – 2028 Leader of Partnership between Norway and Japan for excellent Education and Research in Weather and Climate Dynamics (NORPAN)
- 2015 – 2024 Director of the Research School for Changing Climates in the Coupled Earth System (CHESS)
- Field Experiments (see also Funding) Leadership and participation in several field experiments (GLEX, ARC XX/3, AllgEx, FLOHOF, Irminger Sea Cruise Kn194, One Ocean Expedition) as well as flight planning experience (IGP, IPY-THORPEX, ACCACIA, and NEAREX/NAWDEX)

Institutional Responsibilities

- 2011 – 2028 Elected member of the board at the Geophysical Institute, University of Bergen (2011-2018)
- 2011 – 2016 Member of the teaching committee at the Geophysical Institute, University of Bergen, which is in charge of overseeing and revising the study program (2011-2016)
- 2011 – 2026 Member of several selection committees for researcher, postdoctoral, and PhD positions, University of Bergen, Norway

Organisation of Workshops and Conferences

- 2026 Norwegian Geophysical Society General Assembly, Oslo, Norway, 70+ participants
- Organiser
- 2026 Extratropical Cyclones, Storms and Diabatic Processes Across Scales: Dynamics, Diagnostics of Observed and Future Trends, and Related Impacts, EGU General Assembly, Vienna, Austria
- co-Convenor
- 2026 Diabatics 2026 Workshop, Wolkersdorf im Weinviertel, Austria, 60+ participants
- Organiser
- 2025 Symposium on Advances in Atmospheric Dynamics, IAMAS-IAPSO-IACS General Assembly, Busan, South Korea
- Convenor

- 2025 Storm tracks workshop, Rosendal, Norway, 70+ participants
Organiser
- 2024 Workshop on Linking Weather and Climate Dynamics across Scales, Nanjing, China, 100+ participants
co-Organiser
- 2024 Norwegian Geophysical Society General Assembly, Bergen, Norway, 100+ participants
Organiser
- 2023 Symposium on Advances in Atmospheric Dynamics, IUGG General Assembly, Berlin, Germany
Convenor
- 2022 Polar Low Workshop, Moskva, Russia; 30+ participants (online)
co-Organiser
- 2019 Symposium Advances in Atmospheric Dynamics, IUGG General Assembly, Montreal, Canada
Convenor
- 2017 Symposium Advances in Atmospheric Dynamics, IAMAS-IAPSO-IAGA Meeting, Cape Town, South Africa
Convenor
- 2018 Polar Low Workshop, Trier, Germany; 35 participants
co-Organiser
- 2017 MOSAiC Workshop, Prague, Czech Republic, 80+ participants
Organiser
- 2016 Polar Low Workshop, Paris, France, 32 participants
co-Organiser
- 2015 Workshop on the Dynamics of Atmosphere-Ice-Ocean Interactions in High Latitudes, Rosendal, Norway, 90+ participants
Organiser
- 2015 Symposium Advances in Atmospheric Dynamics, IUGG General Assembly, Prague, Czech Republic
Convenor
- 2015-2021 Different sessions at European Geosciences Union General Assembly, Vienna, Austria
co-Convenor

Organisation of Summer/Winter Schools

- 2026 Arctic atmosphere-ocean-sea ice interactions and their linkages with mid-latitudes, Sun Yat-Sen University, Zhuhai, China, 30+ participants
Organiser
- 2024 Winter School on the Dynamics of Water in all its Phases, Bergen, Norway, 25+ participants
Organiser
- 2022 Summer School on Teaching, Outreach, and the IPCC Report, Fiji and Southern Pacific aboard Statsraad Lehmkuhl, 12+ participants
Organiser
- 2022 Summer School on Land-Atmosphere Interaction Processes and Convection, Starmoen, Norway, 20+ participants
Organiser
- 2022 Winter School on Atmosphere-Ocean-Ice Interaction Processes, Longyearbyen, Svalbard, 25+ participants
Organiser
- 2021 Summer School One Ocean Field Course, Caribbean, 25+ participants
Co-organiser
- 2018 Career Development Workshop for Early Career Scientists, Bergen, Norway, 20+ participants
Organiser
- 2017 Diabatic Winter School, Bergen, Norway, 25+ participants
Organiser
- 2017 – 2024 Annual Meeting of the Research School CHES, Bergen, Oslo, Tromsø, Norway, 60+ participants
Organiser
- 2012 ACDC Summer School on Landscapes and Climate, Snoheim, Norway, 25+ participants
co-Organiser

Acted as reviewer for

- Journal Reviews Tellus A, Quarterly Journal of the Royal Meteorological Society, Journal of the Atmospheric Sciences, Monthly Weather Review, International Journal of Climatology, Journal of Climate, Climate Dynamics, Geophysical Research Letters, Journal of Geophysical Research - Atmosphere, Scientific Reports, Bulletin of the American Meteorological Society, Weather and Climate Dynamics, Elementa, Nature Geoscience, npj climate and atmospheric science, Earth's Future, Atmospheric Research, Journal of Advances in Modelling Earth System, Nature, Atmosphere, Boundary-Layer Meteorology, Polar Science, Natural Hazards and Earth System Sciences,

Proposal Reviews National Science Foundation (USA), Natural Environment Research Council (UK), Deutsche Forschungs Gesellschaft (Germany), European Commission (EU), Israel Science Foundation (Israel)

SUPERVISION OF STUDENTS AND RESEARCH FELLOWS

Total: 5 BSc theses, 29 MSc theses, 14 PhD students, 8 Postdocs

Postdocs

2024 – today Konstali K. (Postdoc, University of Bergen): Cyclone clustering and atmosphere-ocean interactions
2023 – 2026 Chripko S. (Postdoc, University of Bergen): Atmosphere-Ocean interactions during cold air outbreaks
2022 – 2026 Marcheggiani A. (Postdoc, University of Bergen): Diabatic processes in storm track dynamics
2017 – 2020 Weijenborg C. (Postdoc, University of Bergen): Diabatic processes in cyclone clustering
2017 – 2020 Bui H. (Postdoc, University of Bergen): Atmosphere-ocean interactions for cyclone development
2018 – 2020 Ogawa F. (Postdoc, University of Bergen): Atmosphere-ocean interactions in storm tracks
2014 – 2015 Terpstra A. (Postdoc, University of Bergen): Polar low dynamics
2012 – 2015 Michel C. (Postdoc, University of Bergen): Polar low climatologies

PhD students

2020 – today Lutzmann J. (PhD Thesis, University of Bergen): Frontal lifecycles
2019 – today Galmiche N. (PhD Thesis, University of Bergen): Visualisation of multimodality in ensemble forecasts
2022 – 2026 Yu Q. (PhD Thesis, University of Bergen): Forecast biases and errors – A feature-based approach and the role of diabatic heating
2023 – 2024 Bhorade R. (PhD Thesis, University of Bergen): Air-Sea Interactions associated with Cold Air Outbreaks
2020 – 2024 Konstali K. (PhD Thesis, University of Bergen): Precipitation attribution and climate change
2016 – 2021 Haualand K. (PhD Thesis, University of Bergen): Diabatic Intensification of baroclinic Instability and the Role of Surface Fluxes
2016 – 2021 Tsopouridis L. (PhD Thesis, University of Bergen): Influence of the Gulf Stream and Kuroshio SST Fronts on the Atmosphere
2015 – 2019 Pariyar S. K. (PhD Thesis, University of Bergen): Intraseasonal rainfall variability and the extreme rainfall in the western Tropical Pacific
2014 – 2018 Sergeev D. (PhD Thesis, University of East Anglia): Observations and Modeling of Polar Lows with Focus on Predictability and Genesis
2013 – 2015 Keiderling S. (PhD Thesis, University of Bergen): Jet Stream Dynamics, Variability and Forcing
2011 – 2015 Reeve M. A. (PhD Thesis, University of Bergen): Monsoon Onset in Bangladesh: Reconciling scientific and societal perspectives
2010 – 2014 Spensberger C. (PhD Thesis, University of Bergen): Novel approaches to orographic and dynamic blocking
2011 – 2014 Terpstra A. (PhD Thesis, University of Bergen): Dynamical Perspectives on the Formation and Intensification of Polar Lows
2011 – 2013 Kong Q. (PhD Thesis, University of Bergen): Interaction of Cyclones with Topography

MSc thesis

2025 – 2026 Scalise G. (MSc Thesis, University of Innsbruck): Orographic low-level jets around Scandinavia
2024 – 2026 Løkken M. (MSc Thesis, University of Bergen): Influence of diabatic processes and surface fluxes on the development of reverse shear polar lows
2024 – 2026 Galtvik S. (MSc Thesis, University of Bergen): Dynamical attribution of global precipitation in current and future climates

- 2024 – 2025 Oostdam J. (MSc Thesis, University of Bergen): Dynamic differences between clustered and non-clustered cyclones
- 2024 – 2025 Høvås C. (MSc Thesis, University of Bergen): Sensitivity of cyclone clusters to diabatic processes
- 2022 – 2024 Ordahl J. (MSc Thesis, University of Bergen): Atmospheric processes leading to large sea ice breakup events
- 2021 – 2023 Larsen H. (MSc Thesis, University of Bergen): On the use of car observations to evaluate and improve road weather forecasting
- 2021 – 2023 Olsen S. (MSc Thesis, University of Bergen): The Effects of Diabatic Heating on the Paradigmatic LC1 and LC2 Baroclinic Lifecycles
- 2018 – 2019 Konstali K. (MSc Thesis, University of Bergen): Moist mixed layer model for Cold Air Outbreaks including oceanic feedbacks
- 2017 – 2018 Jenssen M. D. K. (MSc Thesis, University of Bergen): Mechanisms leading to Cold Air Outbreaks
- 2014 – 2016 Selberg L. A. (MSc Thesis, University of Bergen): The extreme winter storm 'Nina': Dynamics and Predictability
- 2014 – 2016 Haukeland M. (MSc Thesis, University of Bergen): Climatological aspect of Polar Lows and Impact on Norway
- 2014 – 2016 Dahl-Eriksen S. (MSc Thesis, University of Bergen): Diabatic Intensification of baroclinic Instability
- 2014 – 2016 Haualand K. (MSc Thesis, University of Bergen): The Influence of Surface Fluxes in Eady's Instability problem
- 2014 – 2016 Ssemujju M. (MSc Thesis, University of Bergen): Mechanisms of Early Monsoon Onset in North-Eastern Bangladesh
- 2014 – 2016 Haugland K. (MSc Thesis, University of Bergen): Detecting Atmospheric Rivers using Persistent Homology
- 2014 Gottschalk M. (MSc Thesis, University of Bergen): Idealized simulations of cold air outbreaks
- 2013 – 2015 Alsvåg K. (MSc Thesis, University of Bergen): Detecting Atmospheric Rivers using Persistent Homology
- 2013 – 2014 Nordhagen R. (MSc Thesis, University of Bergen): Cold Pools in Norwegian Valleys
- 2013 – 2014 Green L. (MSc Thesis, University of Bergen): Influence of surface fluxes on the development of Polar Lows
- 2013 – 2013 Thorsteinssen T. (MSc Thesis, University of Bergen): Implementation of a slab ocean into an idealised model
- 2012 – 2013 Villanger C. (MSc Thesis, University of Bergen): High Impact Wind Events in Norway
- 2012 – 2013 Keiderling S. (MSc Thesis, University of Bergen): Ice Edge Jet Streams
- 2011 – 2013 Munro A. (MSc Thesis, University of Bergen): Using Deformation as a measure for Rossby Wave Breaking
- 2012 – 2013 Karlsen E. (MSc Thesis, University of Bergen): Extreme precipitation in Norway: Present and Future Changes based on Regional Climate Simulations
- 2011 – 2012 Tronvoll E. (MSc Thesis, University of Bergen): Climatology of Cyclones interacting with Greenland
- 2009 Schemm S. (MSc Thesis, ETH Zurich): Wave Activity Flux applied to baroclinic Development
- 2008 Brunner N. E. (MSc Thesis, ETH Zurich): Forced stationary Rossby Waves in an Equatorial beta-plane one-layer shallow water model
- 2007 Čampa J. (MSc Thesis, ETH Zurich): Interactions of Forced sub-tropical Rossby Waves with extra-tropical Flow
- 2007 Ablinger M. (MSc Thesis, University of Munich): Data and Results from the field Campaign AllgEx in the Allgäu

BSc thesis

- 2009 Kröner N. (BSc Thesis, ETH Zurich): A global Heat Low Climatology
- 2009 Struchen B. (BSc Thesis, ETH Zurich): Diabatically Forced Linear Quasi-Geostrophic Rossby Waves

- 2009 Cervenka D. (BSc Thesis, ETH Zurich): Weather conditions for severe forest fires in Australia, Spain and Greece: Analysis and Comparison
- 2009 Leutwyler D. (BSc Thesis, ETH Zurich): Mid-latitude Perturbations initiated by Tropical Convection
- 2007 Tay P. (BSc Thesis, ETH Zurich): Forced Quasi-Geostrophic Rossby Waves in a stratified Fluid

Semester thesis

- 2010 O'Rourke A. (Semester Thesis, Princeton University): Drag and the momentum flux in a randomly forced spherical barotropic model
- 2010 Potter S. (Semester Thesis, Princeton University): Linear Stable Reflection and the JWKB Approximation

INTERNATIONAL CONFERENCES AND WORKSHOPS

- 6/2026 Norwegian Geophysical Society General Assembly ,Oslo, Norway
- 5/2026 EGU General Assembly ,Vienna, Austria
- 4/2026 Diabatics 2026 Workshop ,Wolkersdorf im Weinviertel, Austria
- 02/2026 AMOS 2026 Conference ,Hobart, Australia
- 12/2025 AGU25 Annual Meeting, New Orleans, USA
- 11/2025 21st Century Weather Centre 2025 Annual Workshop, Launceston, Australia
- 9/2025 NAWDIC International Workshop, Karlsruhe, Germany
- 7/2025 BACO-25 Joint Assembly, Busan, South Korea
- 7/2025 Hotspot 3 International Workshop, Hakata, Japan
- 7/2025 ESA User Consultation Meeting, Prague, Czech Republic
- 6/2025 Stormtracks 2025 Workshop, Rosendal, Norway
- 3/2025 Japan-Norway ArCS2 workshop, Bergen, Norway
- 10/2024 20th Cyclone Workshop, , St. Sauveur, Quebec, Canada
- 10/2024 Workshop on Linking Weather and Climate Dynamics across Scales, , Nanjing, China
- 6/2026 Norwegian Geophysical Society General Assembly ,Bergen, Norway
- 6/2024 AOFD Meeting, Burlington, Vermont, USA
- 7/2023 IUGG General Assembly, Berlin, Germany
- 6/2023 International Conference on Alpine Meteorology, St. Gallen, Switzerland
- 5/2023 Arctic-Subarctic Ocean Fluxes Workshop, Gran Canaria, Spain
- 3/2023 CLIVAR Mesoscale and Frontal-Scale Air-Sea Interactions Workshop , Boulder, Colorado, USA
- 6/2022 Whither the Gulf Stream Workshop, Woods Hole, Maine (USA), hybrid
- 5/2022 Storm Tracks Workshop, Oléron Island (France)
- 5/2022 AGCI Arctic Extremes Workshop, Aspen, Colorado (USA)
- 5/2022 JpGU General Assembly, Tokyo (Japan), hybrid
- 5/2022 EGU General Assembly, Vienna (Austria)
- 3/2022 Japan-Norway ArCS2 collaboration workshop, Hybrid meeting Tokyo and Bergen
- 4/2021 EGU General Assembly, Vienna (Austria), digital
- 3/2021 NAWDEX Workshop, digital
- 3/2021 ITU Workshop on AI in disaster management, digital
- 5/2020 EGU General Assembly, Vienna (Austria), digital
- 9/2019 19th Cyclone Workshop, Kloster Seeon (Germany)
- 7/2019 IUGG General Assembly, Montreal (Canada)
- 6/2019 AOFD Meeting, Portland, Maine (USA)
- 3/2019 DACH Conference, Garmisch-Partenkirchen (Germany)
- 2/2019 NORPAN closing workshop, Hakone (Japan)
- 1/2019 YOPP Arctic Science Workshop, Helsinki (Finland)

4/2018 EGU General Assembly, Vienna (Austria)
 8/2017 IAPSO-IAMAS-IAGA Assembly, Cape Town (South Africa)
 6/2017 NORPAN Air-Sea Interaction Workshop, Bergen (Norway)
 4/2017 MOSAiC Science Implementation Workshop, Prague (Czech Republic)
 4/2017 Arctic Science Summit Week, Prague (Czech Republic)
 10/2016 Arctic Circle, Reykjavik (Iceland)
 7/2016 Dynamics and interactions of the Ocean and Atmosphere, Sendai (Japan)
 6/2016 Japan-Norway Arctic Science and Innovation Week, Tokyo (Japan)
 5/2016 NORPAN kick-off meeting, Tokyo (Japan)
 4/2016 Polar Low Workshop, Paris (France)
 4/2016 EGU General Assembly, Vienna (Austria)
 3/2016 Arctic Science Summit Week, Fairbanks (USA)
 8/2015 Workshop on Storm Tracks, Grindelwald (Switzerland)
 8/2015 Year of Polar Prediction Summit, Geneva (Switzerland)
 7/2015 IUGG, Prague (Czech Republic)
 4/2015 Arctic Science Summit Week, Toyama (Japan)
 4/2015 Polar Low Workshop, Tokyo (Japan)
 3/2015 Workshop on the Dynamics of Atmosphere-Ice-Ocean Interactions in the High-Latitudes, Rosendal (Norway)
 12/2014 International workshop on polar-lower latitude linkages and their role in weather and climate prediction, Barcelona (Spain)
 11/2014 jetSTREAM kick-off Meeting, Bergen (Norway)
 9/2014 TRACKS kick-off Meeting, Dhaka (Bangladesh)
 8/2014 World Weather Open Science Conference, Montreal (Canada)
 6/2014 LATSIS Symposium, Zurich (Switzerland)
 4/2014 EGU General Assembly, Vienna, (Austria)
 4/2014 Arctic Science Summit Week, Helsinki, (Finland)
 10/2013 Norwegian Research Council Climate Conference, Oslo, (Norway)
 10/2013 Nansen-Zhu 10 year anniversary Conference, Beijing, (China)
 9/2013 16th Cyclone Workshop, Montreal, (Canada)
 7/2013 DACA-2013 IAMAS and IACS Conference, Davos, (Switzerland)
 6/2013 ECMWF-WWRP/THORPEX Polar Prediction Workshop, Reading, (United Kingdom)
 6/2013 ECRA Meeting, Bergen, (Norway)
 8/2012 ICDM International Workshop, Kunming, (China)
 5/2012 Polar Low Workshop, Oslo, (Norway)
 4/2012 EGU General Assembly, Vienna, (Austria)
 7/2011 IUGG, Melbourne, (Australia)
 5/2011 AMS Polar Meteorology Conference, Boston, MA (USA)
 10/2010 WWRP THORPEX Polar Project Meeting, Oslo (Norway)
 9/2010 10th EMS Annual Meeting, Zurich (Switzerland)
 8/2010 AMS Mountain Meteorology Conference, Lake T, CA (USA)
 2/2010 Imagine, Sustainability Conference, Princeton, NJ (USA)
 4/2009 EGU General Assembly, Vienna (Austria)
 2/2009 International Conference on Southern Hemisphere Meteorology and Oceanography, Melbourne (Australia)
 1/2009 IPY-Thorpex-Norway annual meeting, Rømskog (Norway)
 11/2008 Conference on Teleconnection in Atmosphere and Oceans, ICTP Trieste (Italy)
 11/2007 AMMA Conference, Karlsruhe (Germany)
 10/2007 7th EMS / 8th ECAM Meeting, San Lorenzo de El Escorial (Spain)
 9/2007 LATSIS Symposium, Zurich (Switzerland)

- 9/2007 DACH, Hamburg (Germany)
- 7/2007 IUGG, Perugia, (Italy)
- 12/2006 THORPEX STISS Meeting, Landshut (Germany)
- 10/2006 13th Cyclone Workshop, Monterey, California (USA)
- 4/2006 EGU General Assembly, Vienna (Austria)
- 7/2004 11th national AMOS Conference, Brisbane, (Australia)
- 2/2002 9th national AMOS Conference, Melbourne, (Australia)

INVITED TALKS

- 02/2026 Linking weather and climate - a feature-based approach to climate, variability, and extremes, AMOS 2026 Conference, Hobart, Australia
- 01/2026 Impact of diabatic processes across scales, Dalian Maritime University, Dalian, China
- 01/2026 Impact of diabatic processes across scales, Ocean University of China, Qingdao, China
- 12/2025 Development of polar lows in forward and reverse shear environment and the role of moist processes, AGU25 Annual Meeting, New Orleans, USA
- 11/2025 A Weather Systems Approach to Climate Dynamics and Extremes , 21st Century Weather Centre 2025 Annual Workshop, Launceston, Australia
- 10/2025 Impact of diabatic processes across scales, Leipzig Institute for Meteorology, University of Leipzig, Leipzig Germany
- 07/2025 Impact of diabatic processes on midlatitude storm tracks: Role of sea surface temperature, Hotspot 3 International Workshop, Hakata, Japan
- 03/2024 Atmosphere-Ocean interactions in high latitudes and the role of mesoscale weather events, Sun Yat-Sen University, Zhuhai, China
- 03/2024 A weather-feature perspective on jet stream dynamics, Sun Yat-Sen University, Zhuhai, China
- 03/2024 Impact of diabatic processes on midlatitude storm tracks, Sun Yat-Sen University, Zhuhai, China
- 02/2025 A weather-feature perspective on jet stream dynamics, Nanjing University, Nanjing, China
- 02/2025 A weather-feature perspective on jet stream dynamics, Institute of Atmospheric Physics, Chinese Academy of Sciences, Beijing, China
- 07/2024 Impact of diabatic effects on midlatitude storm tracks, Bureau of Meteorology, Melbourne, Australia
- 07/2024 Using weather features to disentangle jet dynamics and precipitation changes, Monash University, Melbourne, Australia
- 04/2024 Impact of diabatic effects on midlatitude storm tracks, Monash University, Melbourne, Australia
- 12/2023 Impact of diabatic effects on midlatitude storm tracks, Institute of Atmospheric Physics, Chinese Academy of Science, Beijing, China
- 12/2023 Impact of diabatic effects on midlatitude storm tracks, School of Atmospheric Sciences, Nanjing University, Nanjing, China
- 3/2023 Diabatic effects in the evolution of cyclones and storm tracks along the western boundary currents, CLIVAR Mesoscale and Frontal-Scale Air-Sea Interactions Workshop , UCAR, Boulder, Colorado, USA
- 5/2022 On the Influence of Sea Surface Temperature Fronts in the Kuroshio and Gulf Stream region on Cyclone Development, JPGU, Tokyo, Japan, digital
- 3/2021 Revealing Multimodality in Ensemble Weather Forecasts, ITU Workshop on AI in disaster management, digital
- 9/2019 100th anniversary of seminal Bergen School of Meteorology Paper, Cyclone Workshop, Kloster Seon, Germany
- 3/2019 Maintenance of Baroclinicity by Extratropical Cyclones, DACH Conference, Garmisch-Partenkirchen, Germany
- 2/2019 Maintenance of Baroclinicity by Extratropical Cyclones, Melbourne University, Melbourne, Australia
- 1/2019 Maintenance of Baroclinicity by Extratropical Cyclones, Monash University, Melbourne, Australia
- 11/2018 Maintenance of Baroclinicity by Extratropical Cyclones, University of Vienna, Vienna, Austria

- 10/2018 Maintenance of Baroclinicity by Extratropical Cyclones, University of Oslo, Oslo, Norway
- 6/2018 Dynamics and Climatological Implications of Cold Air Outbreaks and Polar Lows, Alfred Wegener Institute, Bremerhaven, Germany
- 7/2017 Maintenance of Baroclinicity and Storm Tracks in the North Atlantic, Wegener Center for Climate and Global Change, University of Graz, Graz, Austria
- 6/2017 Maintenance of Baroclinicity and Storm Tracks in the North Atlantic, IPA, DLR, Oberpfaffenhofen, Germany
- 5/2017 The Physics behind Weather Forecasting, Physics Department, University of Bergen, Bergen, Norway
- 4/2017 Air-Sea Flux Characteristics close to the Sea-Ice Edge during Cold Air Outbreaks, Arctic Science Summit Week, Prague (Czech Republic)
- 3/2017 Weather and Climate, a Playground for Big Data and Visualization, Visual Computing Forum, University of Bergen, Bergen, Norway
- 1/2017 Maintenance of Baroclinicity and Storm Tracks in the North Atlantic, Meteorological Institute, Stockholm University, Stockholm, Sweden
- 10/2016 Let's talk about the Weather, PechaKucha, Bergen, Norway
- 10/2016 The Arctic's Role in Changing Global Weather and Climate, Arctic Circle, Reykjavik, Iceland
- 7/2016 Maintenance of Baroclinicity in the Atlantic Storm Track and its Relation to the Sea Surface Temperature Gradients and Cold Air Outbreaks, Dynamics and interactions of the Ocean and Atmosphere, Sendai, Japan
- 7/2016 Maintenance of Baroclinicity in the Atlantic Storm Track and its Relation to the Sea Surface Temperature Gradients and Cold Air Outbreaks, National Institute for Polar Research, Tokyo, Japan
- 7/2016 Upper Tropospheric Jet Axis Detection: Winter 2013/2014 and Northern Hemispheric Variability, AORI University of Tokyo, Tokyo, Japan
- 7/2016 Upper Tropospheric Jet Axis Detection: Winter 2013/2014 and Northern Hemispheric Variability, RCAST University of Tokyo, Tokyo, Japan
- 6/2016 Dynamics and Predictability of Arctic Extremes and the Influence of Air-Sea Interactions on their Evolution, Arctic Science and Innovation Week, Tokyo, Japan
- 4/2016 Maintenance of Baroclinicity in the Atlantic Storm Track and its Relation to the Sea Surface Temperature Gradient along the Gulf Stream, EGU General Assembly, Vienna, Austria
- 3/2016 Do we speak the same Language of Science?, Arctic Science Summit Week, Fairbanks, USA
- 12/2015 Polar Lows: impact, current understanding, and challenges ahead, Laboratoire de Météorologie Dynamique, Paris, France
- 12/2015 Polar Lows: impact, current understanding, and challenges ahead, University of Potsdam and Alfred Wegener Institute, Potsdam, Germany
- 11/2015 Maintenance of storm tracks and baroclinicity, University of East Anglia, Norwich, United Kingdom
- 11/2015 Maintenance of storm tracks and baroclinicity, University of Manchester, Manchester, United Kingdom
- 11/2015 Maintenance of storm tracks and baroclinicity, University of Leeds, Leeds, United Kingdom
- 11/2015 Maintenance of storm tracks and baroclinicity, Imperial College, London, United Kingdom
- 11/2015 Maintenance of storm tracks and baroclinicity, Oxford University, Oxford, United Kingdom
- 11/2015 Polar Lows, University of Reading, Reading, United Kingdom
- 10/2015 Polar Lows: Recent research on the dynamics of intense high-latitude cyclones, British Antarctic Survey, Cambridge, United Kingdom
- 9/2015 Maintenance of storm tracks and baroclinicity, Met Office, Exeter, United Kingdom
- 9/2015 Maintenance of storm tracks and baroclinicity, University of Edinburgh, Edinburgh, United Kingdom
- 6/2015 Atmospheric conditions associated with polar low genesis in the North-East Atlantic, IUGG, Prague, Czech Republic
- 4/2015 Climatological analysis of the slope of isentropic surfaces and its tendencies over the North Atlantic, University of Tokyo, Tokyo, Japan

- 4/2015 Polar Lows in the Nordic Seas: Dynamical and Climatological Aspects, Polar Low Workshop, University of Tokyo, Tokyo, Japan
- 3/2015 Polar Low Development in forward and reverse shear Arctic moist-baroclinic environments, High Latitude Workshop, Rosendal, Norway
- 12/2014 Polar Low Dynamics, University of Munich, Munich, Germany
- 10/2014 How do I teach Dynamic Meteorology, University of Bergen, Bergen, Norway
- 12/2013 A new look at deformation as a diagnostic for large-scale flow, Meteorological Institute, Mainz, Germany
- 7/2013 High impact weather in the Arctic, DACA-2013, Davos, Switzerland
- 12/2012 Connections between Severe Weather, Breaking Rossby Waves and Flow Deformation, Meteorological Institute, Munich, Germany
- 12/2012 Synoptic Evolution and Dynamic Characteristics of the Extreme Norwegian Winter Storm Dagmar, German Aerospace Center, Munich, Germany
- 6/2012 Connections between Severe Weather, Breaking Rossby Waves and Flow Deformation, Free University Berlin, Berlin, Germany
- 4/2012 Potential Vorticity Attribution and Causality, University of Oslo, Oslo, Norway
- 7/2011 How does rain affect surface pressure, Monash University, Melbourne, Australia
- 7/2011 The Dynamics of Heat Lows, IUGG, Melbourne, Australia
- 3/2011 The Dynamics of Heat Lows, Environment Canada, Montreal, Canada
- 3/2011 How does rain affect surface pressure, Yale University, New Haven, USA
- 1/2010 The Dynamics of Heat Lows, Geophysical Institute, University of Bergen, Norway
- 9/2009 The Dynamics of Heat Lows, Institute for Atmospheric and Climate Science, ETH Zurich, Switzerland
- 5/2009 The Greenland Tip Jet, GFDL, Princeton University, Princeton, NJ, USA
- 2/2009 Mid-latitude response to stationary and non-stationary tropical forcing, Monash University, Melbourne, Australia
- 2/2008 Mid-latitude response to stationary and non-stationary tropical forcing, Geophysical Institute, University of Bergen, Norway
- 2/2008 Mid-latitude response to stationary and non-stationary tropical forcing, Meteorological Institute, University of Oslo, Norway
- 11/2006 Subtropical Forcing of Extra-tropical Flow, Meteorological Institute Munich, Germany
- 7/2006 Heat Lows revisited, Meteorological Institute Munich, Germany

PUBLICATIONS

Total peer reviewed publications (including 2 book chapters): 91; Citations: 2365; h-index: 31, i10-index: 54 (based on Google Scholar)

* publications by supervised or co-supervised PhD students or postdocs

publications from projects as lead PI

Research articles

- *# [91] Liu, Y., Y. Zhang, T. Spengler, and Y. Yao: Effect of Summertime Cyclones on Surface Turbulent Heat Exchange in the Arctic. *J. Clim.*, accepted
- *# [90] Chripko, S., T. Spengler, S. Semper, and K. Våge: Response of the Nordic Seas to the 2-6 February 2020 Marine Cold Air Outbreak in the GLORYS12 Ocean Reanalysis. *Ocean Science Disc.*, accepted
- *# [89] Weijenborg, C., and T. Spengler, 2026: Detection and global climatology of two types of cyclone clustering. *Weather Clim. Dynam.*, **7**, 475-488, <https://doi.org/10.5194/wcd-7-475-2026>

- *# [88] Yang, W., W. Cui, X. Li, T. Spengler, N. Dunstone, S. C. Hardiman, B. Pang, and L. Wang, 2026: Influence of East Asian Cold Surges on Tropical Precipitation over the Maritime Continent. *Weather Clim. Extrem.*, 100868, <https://doi.org/10.1016/j.wace.2026.100868>
- *# [87] Ran, H., L. Wang, T. Spengler, G. Chen, P. Huang, and K. Hu, 2026: Long-term trends of Northern Hemisphere marine cold air outbreaks during boreal winter: Influence of sea ice retreat and atmospheric circulation. *J. Clim.*, **39**, 2191-2207, <https://doi.org/10.1175/JCLI-D-24-0658.1>
- *# [86] Marcheggiani, A., and T. Spengler, 2025: Cold air outbreaks drive near-surface baroclinicity variability. *Weather Clim. Dynam. Disc.*, **6**, 1479–1489, <https://doi.org/10.5194/wcd-6-1479-2025>
- # [85] Spensberger, C., G. Boutin, H. Regan, and T. Spengler, 2025: Limited impact of cyclones on Arctic sea ice tendencies throughout all seasons. *J. Clim.*, **39**, 439-458, <https://doi.org/10.1175/JCLI-D-24-0649.1>
- [84] Zhang, X., T. Vihma, A. Rinke, G. W. K. Moore, H. Tang, C. Äijälä, A. DuVivier, J. Huang, L. Landrum, C. Li, J. Zhang, L. Boisvert, B. Cheng, J. Cohen, D. Handorf, E. Hanna, K. Hartmuth, M. O. Jonassen, Y. Luo, S. Murto, J. E. Overland, C. Parker, W. Perrie, K. Schulz, A. Schweiger, T. Spengler, M. Steele, W. Tung, N. Tyrrell, E. Valkonen, H. Wang, Z. Wang, W. Weijer, S. Wickström, Y. Wu, and M. Zhang, 2025: Weather and climate extremes in a changing Arctic. *Nat. Rev. Earth Environ.* <https://doi.org/10.1038/s43017-025-00724-4>
- * [83] Ran, H., L. Wang, and T. Spengler, 2025: Interannual Variability of Wintertime Marine Cold Air Outbreaks over the High Latitude North Atlantic. *J. Meteorol. Res.*, **39**(5), 1197–1210, <https://doi.org/10.1007/s13351-025-5030-4>
- *# [82] Yu, Q., C. Spensberger, L. Magnusson, and T. Spengler, 2025: Forecast errors attributed to synoptic features. *Meteorol. Appl.*, **32**, e70093, <https://doi.org/10.1002/met.70093>
- *# [81] Marcheggiani, A., C. Spensberger, H. Dacre, and T. Spengler, 2025: Weather features drive free-tropospheric baroclinicity variability in the North Atlantic storm track. *Q. J. Roy. Meteorol. Soc.*, **151**, e5061, <https://doi.org/10.1002/qj.5061>
- [80] Andrade, F. A. A., T. Lorenz, M. Moura, T. Spengler, M. Feliciano, and S. Mayer, 2025 : Road Weather Forecasts in Norway with the METRo model. *Meteorology*, **4**, 16, <https://doi.org/10.3390/meteorology4020016>
- * [79] Konstali, K., C. Spensberger, T. Spengler, and A. Sorteberg, 2025: Atmospheric fronts drive future changes in extratropical extreme precipitation. *GRL*, **52**, e2025GL116032, <https://doi.org/10.1029/2025GL116032>
- # [78] Spensberger, C., K. Konstali, and T. Spengler, 2025: Moisture transport axes: a unifying definition for tropical moisture exports, atmospheric rivers, and warm moist intrusions. *Weather Clim. Dynam.*, **6**, 431–446, 2025, <https://doi.org/10.5194/wcd-6-431-2025>
- *# [77] Tao, D., C. Li, R. Davy, S. He, T. Spengler, C. Michel, and A. Rosendahl, 2025: Arctic-Atlantic Cyclones: Variability in Thermodynamic Characteristics, Large-Scale Flow, and Local Impacts. *GRL*, **52**, e2024GL111769, <https://doi.org/10.1029/2024GL111769>
- * [76] Konstali, K., T. Spengler, C. Spensberger, and A. Sorteberg, 2024: Linking future precipitation changes to weather features in CESM2-LE. *Geophys. Res. Atmos.*, **129**, e2024JD041190, <https://doi.org/10.1029/2024JD041190>

- # [75] Ogawa, F. and Spengler, T., 2024: Influence of mid-latitude sea surface temperature fronts on the atmospheric water cycle and storm track activity, *Weather Clim. Dynam.*, **5**, 1031-1042, <https://doi.org/10.5194/wcd-5-1031-2024>
- [74] Okajima, S., Nakamura, H., Spengler, T., 2024: Midlatitude Oceanic Fronts Strengthen the Hydrological Cycle Between Cyclones and Anticyclones, *GRL*, **51**, 6, e2023GL106187, <https://doi.org/10.1029/2023GL106187>
- [73] Auestad, H., Spensberger, C., Marcheggiani, A., Ceppi, P., Spengler, T., and Woollings, T., 2024: Spatio-temporal averaging of jets obscures the reinforcement of baroclinicity by latent heating, *Weather Clim. Dynam.*, **5**, 1269–1286, <https://doi.org/10.5194/wcd-5-1269-2024>
- * [72] Konstali, K., C. Spensberger, T. Spengler, A. Sorteberg, 2024: Global Attribution of Precipitation to Weather Features, *J. Clim.*, **37**, 1181-1196, <https://doi.org/10.1175/JCLI-D-23-0293.1>
- [72] Lin, T., T. Spengler, A. Rutgersson, L. Wu, 2024: Impact of sea spray-mediated heat fluxes on polar low development, *Quart. J. Roy. Meteor. Soc.*, <https://doi.org/10.1002/qj.4746>
- # [70] Spensberger, C., C. Li, T. Spengler, 2023: Linking instantaneous and climatological perspectives on eddy-driven and subtropical jets, *J. Clim.*, **36**, 8525-8537, <https://doi.org/10.1175/JCLI-D-23-0080.1>
- *# [69] Marcheggiani, A., and T. Spengler, 2023: Diabatic effects on the evolution of storm tracks. *Wea. Clim. Dyn.*, **4**, 927-942, <https://doi.org/10.5194/wcd-4-927-2023>
- * [68] Duscha, C., J. Palenic, T. Spengler, J. Reuder, 2023: Observing atmospheric convection with dual-scanning lidars, *Atmos. Meas. Tech.*, **16**, 5103–5123, <https://doi.org/10.5194/amt-16-5103-2023>
- [67] Woollings, T., C. Li, M. Drouard, E. Dunn-Sigouin, K. A. Elmetekawy, M. Hell, B. Hoskins, C. Mbengue, M. Patterson, T. Spengler, 2023: The role of Rossby waves in polar weather and climate, *Weather Clim. Dynam.*, **4**, 61-80, <https://doi.org/10.5194/wcd-4-61-2023>
- [66] Svensson, G., S. Murto, M. D. Shupe, F. Pithan, L. Magnusson, J. J. Day, J. D. Doyle, I. A. Renfrew, T. Spengler, and T. Vihma, 2023: Warm air intrusions reaching the MOSAiC expedition in April 2020 – the YOPP targeted observing period (TOP). *Elem. Sci. Anth.*, **11**, 1, <https://doi.org/10.1525/elementa.2023.00016>
- [65] I. A. Renfrew, J. Huang, S. Semper, C. Barrell, A. Terpstra, R. S. Pickart, K. Våge, A. D. Elvidge, T. Spengler, A.-M. Strehl, A. Weiss, 2023: Coupled atmosphere-ocean observations of a cold air outbreak and its impact on the Iceland Sea, *Quart. J. Roy. Meteor. Soc.*, **149**, 472-493, <https://doi.org/10.1002/qj.4418>
- [64] Watanabe, S.-I., H. Niino, T. Spengler, 2022: Formation of maritime convergence zones within cold air outbreaks due to the shape of the coastline or sea ice edge, *Quart. J. Roy. Meteor. Soc.*, **148**, 746, 2546-2562, <https://doi.org/10.1002/qj.4324>
- [63] Rheinländer, J. W., R. Davy, E. Ólason, P. Rampal, C. Spensberger, T. D. Williams, A. Korosov, T. Spengler, 2022: Driving mechanisms of an extreme winter sea ice breakup event in the Beaufort Sea, *GRL*, **49**, 12, e2022GL099024, <https://doi.org/10.1029/2022GL099024>
- [62] Outten, S., C. Li, M. P. King, L. Suo, P. Y. F. Siew, R. Davy, E. Dunn-Sigouin, S. He, H. Cheung, E. Madonna, T. Furevik, S. Sobolowski, T. Spengler, T. Woollings, 2023: Reconciling conflicting evidence for the cause of the observed early 21st century Eurasian cooling, *Weather Clim. Dynam.*, **4**, 95-114, <https://doi.org/10.5194/wcd-4-95-2023>

- [61] Geerts, B., S. E. Giangrande, G. M. McFarquhar, L. Xue, S. J. Abel, J. M. Comstock, S. Crewell, P. J. DeMott, K. Ebell, P. Field, T. C. J. Hill, A. Hunzinger, M. P. Jensen, K. L. Johnson, T. W. Juliano, P. Kollias, B. Kosovic, C. Lackner, E. Luke, C. Lüpkes, A. A. Matthews, R. Neggers, M. Ovchinnikov, H. Powers, M. D. Shupe, T. Spengler, B. E. Swanson, M. Tjernström, A. K. Theisen, N. A. Wales, Y. Wang, M. Wendisch, P. Wu, 2022: The COMBLE campaign: a study of marine boundary-layer clouds in Arctic cold-air outbreaks, *Bull. Amer. Meteor. Soc.*, **103**, 5, E1371-E1389, <https://doi.org/10.1175/BAMS-D-21-0044.1>
- * [60] Spensberger, C., T. Thorsteinsson, and T. Spengler, 2022: BedyMo: a combined quasi-geostrophic and primitive equation model in sigma coordinates. *Geosci. Model Dev.*, **15**, 2711-2729, <https://doi.org/10.5194/gmd-15-2711-2022>
- *# [59] Tsopouridis, T. Spengler, and C. Spensberger, 2021: Smoother versus sharper Gulf Stream and Kuroshio sea surface temperature fronts: effects on cyclones and climatology. *Weather Clim. Dynam.*, **2**, 953-970, <https://doi.org/10.5194/wcd-2-953-2021>
- *# [58] Haualand, K., and T. Spengler, 2021: Relative importance of tropopause structure and diabatic heating for baroclinic instability. *Weather Clim. Dynam.*, **2**, 695-712, <https://doi.org/10.5194/wcd-2-695-2021>
- # [57] Reeder M. J., T. Spengler, and C. Spensberger, 2021: The Effect of Sea Surface Temperature Fronts on Atmospheric Frontogenesis. *J. Atmos. Sci.*, **78**, 1753-1771, <https://doi.org/10.1175/JAS-D-20-0118.1>
- *# [56] Bui, H., and T. Spengler, 2021: On the Influence of Sea Surface Temperature distributions on the Development of Extratropical Cyclones. *J. Atmos. Sci.*, **78**, 1173-1188, <https://doi.org/10.1175/JAS-D-20-0137.1>
- [55] Stoll P. J., T. Spengler, A. Terpstra, and R. G. Graversen, 2021: Polar Lows - Moist Baroclinic Cyclones in Four Different Vertical Wind Shear Environments. *Weather Clim. Dynam.*, **2**, 19-36, <https://doi.org/10.5194/wcd-2-19-2021>
- * [54] Galmiche, N., H. Hauser, T. Spengler, C. Spensberger, M. Brun, and N. Blaser, 2021: Revealing Multimodality in Ensemble Weather Prediction. *Machine Learning Methods in Visualisation for Big Data*, Editors: D. Archambault, I. Nabney and J. Peltonen, *The Eurographics Association*, ISBN: 978-3-03868-146-5, <https://doi.org/10.2312/mlvis.20211073>
- # [53] Spensberger, C., and T. Spengler, 2021: Sensitivity of air-sea heat exchange in cold-air outbreaks to model resolution and sea-ice distribution. *JGR Atmospheres*, **126**, 1-13, e2020JD033610, <https://doi.org/10.1029/2020JD033610>
- *# [52] Tsopouridis, C. Spensberger, and T. Spengler, 2021: Cyclone Intensification in the Kuroshio Region and its relation to the Sea Surface Temperature Front and Upper-Level Forcing. *Quart. J. Roy. Meteor. Soc.*, **147**, 485-500, <https://doi.org/10.1002/qj.3929>
- *# [51] Tsopouridis, C. Spensberger, and T. Spengler, 2021: Characteristics of cyclones following different pathways in the Gulf Stream region. *Quart. J. Roy. Meteor. Soc.*, **147**, 392-407, <https://doi.org/10.1002/qj.3924>
- * [50] Palenik, J., T. Spengler, and H. Hauser, 2021: IsoTrotter: Visually Guided Empirical Modelling of Atmospheric Convection. *IEEE Transactions on Visualization and Computer Graphics*, **27**, 2, 775-784, doi: 10.1109/TVCG.2020.3030389
- *# [49] Haualand, K., and T. Spengler, 2020: Direct and Indirect Effects of Surface Fluxes on Moist Baroclinic Development. *J. Atmos. Sci.*, **77**, 3211-3225, <https://doi.org/10.1175/JAS-D-19-0328.1>

- * [48] Pariyar, S. K., N. Keenlyside, A. Sorteberg, T. Spengler, B. C. Bhatt, and F. Ogawa, 2020: Factors affecting extreme rainfall events in the South Pacific. *Weather and Climate Extremes*, **29**, 100262, <https://doi.org/10.1016/j.wace.2020.100262>
- *# [47] Spensberger, C., and T. Spengler, 2020: Feature-Based Jet Variability in the Upper Troposphere. *J. Clim.*, **33**, 6849-6871, <https://doi.org/10.1175/JCLI-D-19-0715.1>
- *# [46] Weijenborg, C., and T. Spengler, 2020: Diabatic Heating as a Pathway for Cyclone Clustering Encompassing the Extreme Storm Dagmar *GRL*, **47**, (8), e2019GL085777, <https://doi.org/10.1029/2019GL085777>
- * [44] Spensberger, C., M. J. Reeder, T. Spengler, and M. Patterson, 2020: The connection between the Southern Annular Mode and a feature-based perspective on Southern Hemisphere mid-latitude winter variability *J. Clim.*, **33**, (1), 115-129, <https://doi.org/10.1175/JCLI-D-19-0224.1>
- [43] Renfrew, I. A., R. S. Pickart, K. Våge, G. W. K. Moore, T. J. Bracegirdle, A. D. Elvidge, E. Jeansson, T. Lachlan-Cope, L.T. McRaven, L. Papritz, J. Reuder, H. Sodemann, A. Terpstra, S. Waterman, H. Valdimarsson, A. Weiss, M. Almansi, F. Bahr, A. Brakstad, C. Barrell, J. K. Brooke, B.J. Brooks, I. M. Brooks, M. E. Brooks, E. M. Bruvik, C. Duscha, I. Fer, H. M. Golid, M. Hallerstig, I. Hessevik, J. Huang, L. Houghton, S. Jónsson, M. Jonassen, K. Jackson, K. Kvalsund, E. W. Kolstad, K. Konstali, J. Kristiansen, R. Ladkin, P. Lin, A. Macrander, A. Mitchell, H. Olafsson, A. Pacini, C. Payne, B. Palmason, M. D. Pérez-Hernández, A. K. Peterson, G. N. Petersen, M. N. Pisareva, J. O. Pope, A. Seidl, S. Semper, D. Sergeev, S. Skjelsvik, H. Sjøiland, D. Smith, M. A. Spall, T. Spengler, A. Touzeau, G. Tupper, Y. Weng, K. D. Williams, X. Yang, and S. Zhou, 2019: The Iceland Greenland Seas Project. *Bull. Amer. Meteor. Soc.*, **100**, (9), 1795-1817, <https://doi.org/10.1175/BAMS-D-18-0217.1>
- *# [42] Haualand, K. F., and T. Spengler, 2019: How does latent cooling affect baroclinic development in an idealized framework? *J. Atmos. Sci.*, **76**, (9), 2701-2714, <https://doi.org/10.1175/JAS-D-18-0372.1>
- *# [41] Ogawa F., and T. Spengler, 2019: Prevailing Surface Wind Direction during Air-Sea Heat Exchange. *J. Clim.*, **32**, (17), 5601-5617, <https://doi.org/10.1175/JCLI-D-18-0752.1>
- [40] Heinemann, G., C. Claud, and T. Spengler, 2019: Summary of the 14th Polar Low Workshop. *Bull. Amer. Meteor. Soc.*, **98**, (6), ES139-ES142, <https://doi.org/10.1175/BAMS-D-16-0207.1>
- * [39] Sergeev, D., I. A. Renfrew and T. Spengler, 2018: Modification of Polar Low Development by Orography and Sea Ice. *Mon. Wea. Rev.*, **146** 3325-3341. doi: 10.1175/MWR-D-18-0086.1
- [38] Schäfler, A., G. Craig, H. Wernli, P. Arbogast, J. D. Doyle, R. McTaggart-Cowan, J. Methven, G. Rivière, F. Ament, M. Boettcher, M. Bramberger, Q. Cazenave, R. Cotton, S. Crewell, J. Delanoë, A. Dörnbrack, A. Ehrlich, F. Ewald, A. Fix, C M. Grams, S. L. Gray, J. Grob, S. Groß, M. Hagen, B. Harvey, L. Hirsch, M. Jacob, T. Kölling, H. Konow, C. Lemmerz, O. Lux, L. Magnusson, B. Mayer, M. Mech, R. Moore, J. Pelon, J. Quinting, S. Rahm, M. Rapp, M. Rautenhaus, O. Reitebuch, C. A. Reynolds, H. Sodemann, T. Spengler, G. Vaughan, M. Wendisch, V. Wirth, B. Witschas, K. Wolf, T. Zinner, 2018. The North Atlantic waveguide and downstream impact experiment. *Bull. Amer. Meteor. Soc.* **99**, 1607-1637, doi: 10.1175/BAMS-D-17-0003.1
- *# [37] Michel, C., A. Terpstra and T. Spengler, 2018: Polar Mesoscale Cyclone Climatology for the Nordic Seas based on the ERA-Interim Reanalysis. *J. Clim.*, **31**, 2511-2532, DOI: 10.1175/JCLI-D-16-0890.1
- [36] Egger, J., and T. Spengler, 2018: Non-Uniqueness of Attribution in Piecewise Potential Vorticity Inversion. *J. Atmos. Sci.*, **75**, 875-883, DOI: 10.1175/JAS-D-17-0039.1

- *# [35] Spensberger, C., T. Spengler, and C. Li, 2017: Upper Tropospheric Jet Axis Detection and Application to the Boreal Winter 2013/14. *Mon. Wea. Rev.*, **145**, 2363-2374, doi:http://dx.doi.org/10.1175/MWR-D-16-0467.1
- # [34] Spengler, T., C. Claud, and G. Heinemann, 2017: Summary for the 13th Polar Low Workshop. *Bull. Amer. Meteor. Soc.*, ES139-ES142, doi:http://dx.doi.org/10.1175/BAMS-D-16-0207.1
- * [33] Papritz, L., and T. Spengler, 2017: A Lagrangian climatology of wintertime cold air outbreaks in the Irminger and Nordic seas and their role in shaping air-sea heat fluxes. *J. Clim.*, **30**, 2717-2737, http://dx.doi.org/10.1175/JCLI-D-16-0605.1
- *# [31] Spensberger, C., J. Egger, and T. Spengler, 2017: Synoptic Systems interacting with the Rocky Mountain Barrier: Observations and Theories. *Mon. Wea. Rev.*, **145**, 783-794, doi:http://dx.doi.org/10.1175/MWR-D-16-0195.1
- [30] Egger, J., K.-P. Hoinka, and T. Spengler, 2017: Inversion of Potential Vorticity Density. *J. Atmos. Sci.*, **74**, 801-807, http://dx.doi.org/10.1175/JAS-D-16-0133.1
- * [29] Sergeev, D., I. A. Renfrew, T. Spengler, and S. R. Dorling, 2017: Structure of a shear-line polar low. *Quart. J. Roy. Meteor. Soc.*, **143**, 12-26, doi:10.1002/qj.2911
- *# [28] Stiller-Reeve, M., Stephenson, D. B., and T. Spengler, 2016: New Tools for Comparing Beliefs about the Timing of Recurrent Events with Climate Time Series Datasets. *Weather, Climate and Society*, **8**, 493-506, doi:10.1175/WCAS-D-15-0054.1
- [27] Woollings, T., C. Mbengue, L. Papritz, and T. Spengler, 2016: Diabatic heating and jet stream shifts: A case study of the 2010 negative NAO winter. *GRL*, **43**, 9994-10002, doi:10.1002/2016GL070146
- # [26] Spengler, T., I. Renfrew, A. Terpstra, M. Tjernström, J. Screen, I Brooks, A. Carleton, D. Chechin, L. Chen, J. Doyle, I. Esau, P. J. Hezel, T. Jung, T. Kohyama, C. Lüpkes, K. McCusker, T. Nygård, D. Sergeev, M. D. Shupe, H. Sodemann, T. Vihma, 2016: Workshop Summary Dynamics of Atmosphere-Ice-Ocean Interactions in the High Latitudes. *Bull. Amer. Meteor. Soc.*, September, ES179-ES182, doi: http://dx.doi.org/10.1175/BAMS-D-15-00302.1
- [25] Schultz, D. M., and T. Spengler, 2016: Comment on "Incorporating the Effects of Moisture into a Dynamical Parameter: Moist Vorticity and Moist Divergence". *Weather and Forecasting*, **31**, 1393-1396
- *# [24] Terpstra, A., C. Michel and T. Spengler, 2016: Forward and reverse shear environments during polar low genesis over the North East Atlantic. *Mon. Wea. Rev.*, **144**, 1341-1354, doi: https://doi.org/10.1175/MWR-D-15-0314.1
- [23] Yanase, W., H. Niino, S. Watanabe, K.I. Hodges, M. Zahn, T. Spengler, and I.A. Gurvich, 2016: Climatology of polar lows over the Sea of Japan using the JRA-55 reanalysis, *J. Clim.*, **29**, 419-437, doi: http://dx.doi.org/10.1175/JCLI-D-15-0291.1
- [22] Jung, T., F. Doblas-Reyes, H. Goessling, V. Guemas, C. Bitz, C. Buontempo, R. Caballero, E. Jakobson, J. Jungclaus, M. Karcher, T. Koenigk, D. Matei, J. Overland, T. Spengler, and S. Yang, 2015: Polar-lower latitude linkages and their role in weather and climate prediction. *Bull. Amer. Meteor. Soc.*, **92**, ES197-ES200, doi: 10.1175/BAMS-D-15-00121.1
- *# [21] Papritz, L., and T. Spengler, 2015: Analysis of the slope of isentropic surfaces and its tendencies over the North Atlantic. *Quart. J. Roy. Meteor. Soc.*, **141**, 3226-3238, doi: 10.1002/qj.2605

- [20] Egger, J., K.-P. Hoinka, and T. Spengler, 2015: Aspects of Potential Vorticity Fluxes: Climatology and Impermeability. *J. Atmos. Sci.*, **72**, 3257-3267, doi: 10.1175/JAS-D-14-0196.1
- *# [19] Terpstra, A., and T. Spengler, 2015: An initialization method for idealized channel simulations, *Mon. Wea. Rev.*, **143**, 2043-2051, doi: 10.1175/MWR-D-14-00248.1
- *# [18] Terpstra, A., T. Spengler, and R.W. Moore, 2015: Idealised simulations of polar low development in an Arctic moist-baroclinic environment, *Quart. J. Roy. Meteor. Soc.*, **141**, 1987-1996, doi: 10.1002/qj.2507
- # [17] Reeder, M. J., T. Spengler, and R. Musgrave, 2015: Rossby Waves, Extreme Fronts, and Wildfires in Southeastern Australia. *Geophys. Res. Lett.*, **42**, 2015-2023, doi: 10.1002/2015GL063125
- *# [16] Stiller-Reeve, M., A. Syed, T. Spengler, J. Spinney, and R. Hossain, 2015: Complementing scientific monsoon definitions with social perception in Bangladesh. *Bull. Amer. Meteor. Soc.*, **96**, 49-57, doi: <http://dx.doi.org/10.1175/BAMS-D-13-00144.1>
- *# [15] Spensberger, C., and T. Spengler, 2014: A new look at deformation as a diagnostic for large-scale flow, *J. Atmos. Sci.*, **71**, 4221-4234. doi: <http://dx.doi.org/10.1175/JAS-D-14-0108.1>
- *# [14] Stiller-Reeve, M., T. Spengler, and P.-S. Chu, 2014: Testing a flexible method to reduce false monsoon onsets. *PLOS ONE* 9(8): e104386, doi:10.1371/journal.pone.0104386
- * [13] Potter, S., T. Spengler and I. M. Held, 2013: Reflection of barotropic Rossby Waves in sheared flow and validity of the WKB approximation. *J. Atmos. Sci.*, **70**, 2170-2178
- [12] Spengler, T. and J. Egger, 2012: Potential Vorticity Attribution and Causality. *J. Atmos. Sci.*, **69**, 2600-2607
- [11] Reuder, J., M. Ablinger, H. Ágústsson, P. Brisset, S. Brynjólfsson, M.J. Garhammer, T. Jóhannesson, M.O. Jonassen, R. Kühnel, S. Lämmlein, T. de Lange, C. Lindenberg, S. Malardel, S. Mayer, M. Müller, H. Ólafsson, Ó. Rögnvaldsson, W. Schäper, T. Spengler, G. Zängl and J. Egger, 2012: FLOHOF 2007: An overview of the mesoscale meteorological field campaign at Hofsjökull, Central Iceland. *Meteor. Atmos. Phys.*, 1-13, DOI 10.1007/s00703-010-0118-4
- [10] Kristjánsson, J. E., I. Barstad, T. Aspelien, I. Førre, Ø. Godøy, Ø. Hov, E. Irvine, T. Iversen, E. Kolstad, T.E. Nordeng, H. McInnes, R. Randriamampianina, Ø. Sætra, M. Shapiro, T. Spengler and H. Ólafsson, 2011: The Norwegian IPY-THORPEX: Polar Lows and Arctic Fronts during the 2008 Andøya campaign. *Bull. Amer. Meteor. Soc.*, **92**, Issue 11, 1443-1466
- # [9] Spengler, T., J. Egger and S.T. Garner, 2011: How does rain affect surface pressure in a one-dimensional framework? *J. Atmos. Sci.*, **68**, 347-360
- [8] Smith, R.K. and T. Spengler, 2011: The dynamics of heat lows over elevated terrain. *Quart. J. Roy. Meteor. Soc.*, **137**, Jan A, 250-263
- [7] Moore, R.W., O. Martius and T. Spengler, 2010: The Modulation of the Subtropical and Extratropical Atmosphere in the Pacific Basin in Response to the Madden Julian Oscillation. *Mon. Wea. Rev.*, **138**, 2761-2779
- # [6] Spengler, T., J.H. Schween, M. Ablinger, G. Zängl and J. Egger, 2009: Thermally driven Flows at an asymmetric valley exit: Observations and Model Studies at the Lech Valley exit. *Mon. Wea. Rev.*, **137**, 3437-3455

- [5] Våge, K., T. Spengler, H.C. Davies and R.S. Pickart, 2009: Multi-event analysis of the Greenland tip jet based upon 45 winters in ERA-40. *Climatology. Quart. J. Roy. Meteor. Soc.*, **135**, Oct B, 1999-2011
- [4] Spengler, T. and J. Egger, 2009: Comments on "Dry-Season Precipitation in Tropical West Africa and Its Relation to Forcing from the Extratropics". *Mon. Wea. Rev.*, **137**, 3149-3150
- [3] Spengler, T. and R.K. Smith, 2008: The dynamics of heat lows over flat terrain. *Quart. J. Roy. Meteor. Soc.*, **134**, Oct B, 2157-2172
- [2] Spengler, T., M.J. Reeder and R.K. Smith, 2005: The Dynamics of Heat Lows in Simple Background Flows. *Quart. J. Roy. Meteor. Soc.*, **131**, Oct B, 3147-3166
- [1] Jackson, G. E., R.K. Smith and T. Spengler, 2002: The Prediction of low-level convergence lines over northeastern Australia. *Aust. Meteor. Mag.*, **51**, 13-23

Book Chapters

- [45] M.O. Jonassen, D. Chechin, A. Karpechko, C. Lüpkes, T. Spengler, A. Terpstra, T. Vihma, and X. Zhang, 2020: Dynamical Processes in the Arctic Atmosphere, In: A. Kokhanovsky and C. Tomasi (Eds.) *Physics and Chemistry of the Arctic Atmosphere, Springer Polar Sciences*, pp 1-39, doi:0.1007/978-3-030-33566-3_1
- [32] Cornforth R., Z. Mumba, D. J. Parker, G. Berry, N. Chapelon, K. Diakaria, M. Diop-Kane, V. Ermert, A. H. Fink, P. Knippertz, J. P. Lafore, A. Laing, S. Lepape, R. Maidment, J. Methven, B. Orji, D. Osika, E. Poan, R. Roca, S. Rowell, R. K. Smith, T. Spengler, C. M. Taylor, C. Thorncroft, J. C. Vincendon, C. Yorke, 2017: Synoptic systems, In: Parker D. J., M. Diop-Kane (Ed) *Meteorology of Tropical West Africa: The Forecasters' Handbook, John Wiley & Sons, Ltd*, pp 40-89, doi:10.1002/9781118391297.ch2

Extended Abstract Spengler, T., C. Schwierz and H.C. Davies, 2006: Sub-tropical synoptic-scale forcing of extra-tropical flow: Diagnostic analysis and model simulations. *Second THORPEX International Science Symposium (STISS) Extended Abstracts*, 88-89

Popular science T. Spengler, 2015: Iskantens ekstreme klima *Bergens Tidende*, **29-03-2015**, 12-13

Reeve, M. A., T. Spengler, T.M. Lunde and M.A. Syed, 2012: Hva er egentlig monsunen? *KLIMA*, **3-12**, 8-9

Doctoral Thesis *Influence of the ambient flow upon Rossby wave propagation between the tropics and extra-tropics*, Thomas Spengler, Doctoral Thesis, July 2009. Copy available at <http://e-collection.ethbib.ethz.ch/eserv/eth:31159/eth-31159-02.pdf>

Diploma Thesis *The Dynamics of Heat Lows in simple background Flows*, Thomas Spengler, Diploma Thesis, May 2005.

Honours Thesis *Development and Deformation of Heat Lows with Applications to Prefrontal Westerly Troughs in Australia*, Thomas Spengler, Honours Thesis, Sep 2002.

Submitted Articles

*# [92] Yu, Q., C. Spensberger, L. Magnusson, and T. Spengler: Distinct bias structures for extratropical cyclones with strong or weak diabatic heating. *Weather Clim. Dynam. Disc.*, submitted

[93] Groninger, S., P. Bohlinger, Ø. Breivik, T. Spengler, and K. Konstali: Atmospheric conditions contributing to extreme wave events in the Nordic seas and the North Sea. *J. Clim.*, submitted

[94] Ogawa, F., A. Marcheggiani, H. Nakamura, and T. Spengler: Idealised sea surface temperature fronts to test atmospheric response to ocean forcing. *Geosci. Model Dev.*, submitted

Articles in
Preparation

*# [95] Spengler, T., A. Marcheggiani, and C. Weijenborg: Global Climatology of Baroclinicity and Self-Maintenance. *J. Clim.*, in prep.

[96] Spengler, T., and C. Spensberger. Sensitivity of air-sea heat exchange through sea ice leads to model resolution and lead distribution. *JGR Atmos.*, in prep.

*# [97] Bui, H., and T. Spengler: Influences of moving Sea Surface Temperature Fronts on the Evolution of Extratropical Cyclones in an Idealized Simulations. *J. Atmos. Sci.*, in prep.

*# [98] Olsen, S., A. Marcheggiani, and T. Spengler: Effect of moist diabatic processes on LC1/2 baroclinic lifecycles. *Wea. Clim. Dyn.*, in prep.

*# [99] Oostdam, J., C. Weijenborg, and T. Spengler: Composites of clustered and non-clustered cyclones. *Weather Clim. Dynam.*, in prep.

[100] Spensberger, C., H. Auestad, and T. Spengler: Tracking jet lifecycles. *Weather Clim. Dynam.*, in prep.

*# [101] Yu, Q., C. Spensberger, L. Magnusson, and T. Spengler: Model errors for cyclones in the ECMWF ERA5, IFS, and AIFS. *Weather Clim. Dynam.*, in prep.

*# [102] Lutzmann, J., C. Spensberger, and T. Spengler: Detecting and tracking of frontal lifecycles. *Geosci. Model Dev.*, in prep.

[103] Spengler, T., C. Spensberger., K. Konstali, H. Auestad, and A. Marcheggiani, and O. Lachmy: On the relation between weather and eddy momentum fluxes. *Weather Clim. Dynam.*, in prep.

UPDATED

10 June, 2026