

## JONATHAN WILLE – POLAR METEOROLOGIST & CLIMATOLOGIST

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### EDUCATION

- Ph.D. Atmospheric Science, Université Grenoble Alpes, Grenoble, France**  
Thesis title: Antarctic Atmospheric River Climatology and Impacts **2021**  
Advisor: Vincent Favier  
Summer School: Atmospheric Rivers Colloquium Summer School, Scripps Research, La Jolla
- M.Sc. Atmospheric Science, The Ohio State University, Columbus, Ohio, U.S.A.**  
Thesis title: Analysis of the AMPS-Polar WRF Boundary Layer at the Alexander Tall Tower! site on the Ross Ice Shelf **2015**  
Advisor: Professor David H. Bromwich
- B.Sc. Meteorology, The University of Oklahoma, Norman, Oklahoma, U.S.A.**  
Minor: Environmental Sustainability **2013**  
Study Aboard: The University of Reading, Reading, United Kingdom, 2012

### PROFESSIONAL APPOINTMENTS

- Postdoctoral Researcher**, Institute für Atmosphäre und Klima **2022-present**  
ETH Zürich, Zürich, Switzerland  
Project: nextGEMS | Next Generation Earth Modelling Systems  
Advisor: Erich Fischer
- Postdoctoral Researcher**, Institut des Géosciences de l'Environnement, **2021-2022**  
Université Grenoble Alpes, France  
Project: ARCA | Atmospheric Rivers Climatology in Antarctica  
Advisor: Vincent Favier
- Doctoral Researcher**, Institut des Géosciences de l'Environnement **2017-2021**  
Université Grenoble Alpes, France
- Research Assistant**, Polar Meteorology Group **2016, 2017**  
Byrd Polar and Climate Research Center, The Ohio State University, U.S.A.
- Meteorologist/Communications Supporter**, Antarctic Logistics and Expeditions **2016-2017**  
Union Glacier, Antarctica
- Weather Observer**, United States Antarctic Program **2015-2016**  
West Antarctic Ice Sheet (WAIS) Divide Field Camp
- Graduate Research Assistant**, Polar Meteorology Group **2013-2015**  
Byrd Polar and Climate Research Center, The Ohio State University, U.S.A.
- Teaching Assistant**, The University of Oklahoma **2013**  
Lab Section Meteorology 1014: Introduction to Weather and Climate for Non-Meteorology Students
- Environmental Affairs Intern**, Wakefern Food Corporation **2010, 2011**  
Edison, New Jersey, U.S.A.

### RESEARCH INTERESTS

#### *Polar atmospheric science*

- Atmospheric rivers
- Extreme weather ice-sheet impacts
- Synoptic-scale atmospheric dynamics
- Subtropical - polar teleconnections

#### *High-resolution climate modeling*

- Simulating extreme weather events
- Future flooding and drought changes
- Societal impacts of climate change

## INVITED SPEAKER

Seminar, University of Bern, Switzerland	September 2024
Arctic 21, International Cryosphere Climate Initiative, Virtual	January 2024
COP28, International Cryosphere Climate Initiative, Dubai, U.A.E.	December 2023
Seminar, Laboratoire des sciences du climat et de l'environnement (LSCE), Orme des Merisiers, France	September 2023
Seminar, AntClimNow, Virtual	June 2023
European Geosciences Union (EGU) General Assembly, Vienna, Austria	April 2023
Seminar, Centre Européen de Recherche et de Formation Avancée en Calcul Scientifique (CERFACS), France	April 2022
Seminar, Le Laboratoire de Météorologie Dynamique (LMD), Paris, France	November 2021
Seminar, Laboratoire des sciences du climat et de l'environnement (LSCE), Orme des Merisiers, France	November 2021
9 <sup>th</sup> Malaysian International Seminar on Antarctica, Virtual	October 2021
28 <sup>th</sup> Annual WAIS Workshop, Sterling, Virginia, U.S.A.	September 2021
Seminar, British Antarctic Survey (BAS), Virtual	July 2020
Seminar, Institute for Marine and Antarctic Studies (IMAS), Hobart, Australia	November 2019

## CONFERENCE AND WORKSHOP PRESENTATIONS

European Geosciences Union (EGU) General Assembly, Vienna, Austria	April 2024
28 <sup>th</sup> International Union of Geodesy and Geophysics (IUGG) General Assembly, Berlin, Germany	July 2023
2 <sup>nd</sup> Antarctic Atmospheric River Group (AARG) workshop, Boulder, Colorado, U.S.A.	June 2023
11 <sup>th</sup> International Antarctic Conference, National Antarctic Scientific Center of Ukraine, Virtual	May 2023
1 <sup>st</sup> Antarctic Atmospheric River Group (AARG) workshop, Grenoble, France	June 2022
European Geosciences Union (EGU) General Assembly, Vienna, Austria	May 2022
13 <sup>th</sup> International Conference on Southern Hemisphere Meteorology and Oceanography, Virtual	February 2022
16 <sup>th</sup> Workshop on Antarctic Meteorology and Climate (WAMC), Virtual	June 2021
16 <sup>th</sup> Conference on Polar Meteorology and Oceanography (Polar AMS), Virtual	June 2021
International Atmospheric Rivers Conference (IARC) Sponsored Symposium, Virtual	October 2020
European Geosciences Union (EGU) General Assembly, Virtual	May 2020
Southern Ocean Atmospheric Research (SOAR) Workshop, Hobart, Australia	November 2019
27 <sup>th</sup> International Union of Geodesy and Geophysics (IUGG) General Assembly, Montreal, Canada	July 2019
European Geosciences Union (EGU) General Assembly, Vienna, Austria	April 2019
POLAR 2018, Davos, Switzerland	June 2018
International Symposium on Atmospheric Boundary Layers in High Latitudes, Columbus, Ohio, U.S.A.	June 2016
11 <sup>th</sup> Antarctic Meteorological Observation, Modeling, and Forecasting Workshop, Columbus, Ohio, U.S.A.	June 2016
10 <sup>th</sup> Antarctic Meteorological Observation, Modeling, and Forecasting Workshop, Cambridge, United Kingdom	June 2015
9 <sup>th</sup> Antarctic Meteorological Observation, Modeling, and Forecasting Workshop, Charleston, S.C., U.S.A.	June 2014

## PROJECTS

NERC, Drivers and Impacts of Extreme Weather Events in Antarctica (ExtAnt), project partner, 3.5M €	2024-2028
EU Horizon 2020, Next Generation Earth Modelling Systems (nextGEMS), project partner, 11M €	2020-2024
ANR, Atmospheric River Climatology in Antarctica (ARCA), project partner, 492K €	2020-2024

## CONFERENCE PROCEEDINGS

<b>Wille, J. D.</b> , S.-H. Wang, and D. H. Bromwich, 2016: Polar Weather and Climate Week, June 4-8, 2016. <i>BPCRC Technical Report 2016-01</i> , Byrd Polar and Climate Research Center, The Ohio State University, Columbus, Ohio, USA, 83 pages.
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## TRANSVERSAL ACTIVITIES

Session co-convenor for IUGG, Busan	2025
<ul style="list-style-type: none"> <li>Polar weather and climate extremes</li> </ul>	
Weekly weather discussion committee member, ETH Zurich, Switzerland	2024 - present
Organizer for nextGEMS Hackathon at Wageningen University, Netherlands	2024
Early career scientist volunteer, International Cryosphere Climate Initiative, COP28, Dubai	2024
Session co-convenor for IUGG, Berlin	2023
<ul style="list-style-type: none"> <li>“Tropical-Polar Interactions, Arctic Amplification and Its Influence on Midlatitude Weather”</li> </ul>	
Workshop Coordinator for Antarctic Atmospheric River Group (AARG) at Université Grenoble Alpes	2022
Early Career Representative for International Commission on Polar Meteorology (ICPM)	2021 - present
<ul style="list-style-type: none"> <li>Social media manager</li> </ul>	
Member of Year of Polar Prediction – Southern Hemisphere (YOPP-SH) Task Team	2021

- Coordinating Australian, French, and Italian Targeted Observing Periods
- High School Outreach Volunteer for Byrd Polar and Climate Research Center **2017**  
 Conference Coordinator for Polar Weather and Climate Week at Byrd Polar and Climate Research Center **2017**  
 Organization Committee Chair for the OSU Geography Graduate Organization’s Student Research Day **2015**

#### MEDIA ENGAGEMENTS

[Washington Post](#), [Australian Broadcasting Corporation](#), [Euronews](#), [CNN](#), [New York Times](#), [France Inter](#), [Le Monde](#), [France 24](#), [NBC News](#), [Scientista](#), [Washington Post](#), [Bloomberg Green](#), [Zeit Online](#), [NASA Earth Observatory Image of the Day](#), [Frankfurter Allgemeine](#), [Weatherzone](#), [Inside Climate News](#), [National Geographic](#), [Interesting Engineering](#), [Eos](#), [Axios](#), [Washington Post](#), [Le Monde](#), [The Guardian](#), [Mongabay](#), [Salon](#), [La Breche](#)

#### SUPERVISION

Supervisor for Master Student’s Thesis (Jeremy Sennhauser, ETH Zurich) **2025**  
 Supervisor for Master Student’s Thesis (Cosimo Carniel Enrico, ETH Zurich) **2024-2025**  
 PhD jury member (Michelle Maclennan, University of Colorado) **2024**  
 Supervisor for Bachelor Student’s Thesis (Pascal Stöckli, ETH Zurich) **2024**  
 Supervisor for Bachelor Student’s Thesis (Rebekka Koch, ETH Zurich) **2023**  
 PhD committee member (Niels Dutrievoz, LSCE, Gif Sur Yvette) **2023-present**  
 PhD committee member (Michelle Maclennan, University of Colorado) **2022-2024**  
 Supervisor for Masters Student’s internship project (Niels Dutrievoz, IGE, Grenoble) **2021**

#### AWARDS

Honorable mention for Early-Career Award of the International Association of Cryospheric Sciences (IACS) **2023**

- In regard for paper 'Intense atmospheric rivers can weaken ice shelf stability at the Antarctic Peninsula'

The Ohio State University Fenburr Travel Scholarship **2015**  
 John T. Snow Study Aboard Scholarship, 2011 **2011**  
 The University of Oklahoma Presidential Scholarship **2009**  
 The University of Oklahoma School of Meteorology Honors Scholarship **2009**

#### REVIEWER

Nature communications: 1 paper  
 Nature climate change: 1 paper  
 Comisión Nacional de Investigación Científica y Tecnológica: 1 proposal  
 AGU publications: 4 papers  
 The Cryosphere: 3 papers  
 Journal of Climate: 1 paper  
 Atmospheric chemistry and physics: 1 paper  
 Meteorology and Atmospheric Physics: 1 paper

#### SKILLS

Weather forecasting skills

- Created and communicated daily weather forecasts for Antarctic ski expeditions to the South Pole while based in field camp
- Created a weather and climate social media page for local weather forecasts and news (Facebook: Wille’s Weather)

Programming and Operating Systems

- Python, FORTRAN, C, Linux/UNIX

Meteorological and Climate Analysis Software

- NCAR Command Language (NCL), ArcGIS, MATLAB

Communications operator in Antarctica

- Supported remote field camp and expedition logistics
- Performed flight following for ski aircraft

Field work in glaciological measurements and equipment repair in Antarctica

#### REFEREED PUBLICATIONS

Francis, D., Fonseca, R., Nelli, N., Heil, P., **Wille, J.**, Gorodetskaya, I., and Massom, R.: Impacts of Atmospheric Dynamics on Sea-Ice and Snow Thickness at a Coastal Site in East Antarctica, *EGU*sphere, 2025, 1–52, <https://doi.org/10.5194/egusphere-2024-3535>, 2025. (in review)

- Wille, J. D., Koch, R., Becker, T., and Fischer, E. M.: Extreme precipitation depiction in convection-permitting Earth System Models within the nextGEMS project, <https://doi.org/10.22541/essoar.173204240.08166674/v1>, 19 November 2024. (in review)
- Barthélemy, L., Codron, F., Favier, V., and Wille, J.: Future Atmospheric Rivers in Antarctica: intensity and impacts, <https://doi.org/10.22541/au.171387374.47240076/v1>, (in review)
- Pohl, B., Clem, K., Favier, V., Baiman, R., Bozkurt, D., Udy, D., Winters, A., Wille, J., Buffet, V., Vance, T., Gorodetskaya, I., Datta, R., and Pergaud, J.: Tropical Cyclones and strong MJO events as precursors of summertime Antarctic atmospheric rivers, <https://doi.org/10.21203/rs.3.rs-4808647/v1>, 29 August 2024. (in review)
- Rush, W. D., Lora, J. M., Skinner, C. B., Menemenlis, S. A., Shields, C. A., Ullrich, P., O'Brien, T. A., Brands, S., Guan, B., Mattingly, K. S., McClenny, E., Nardi, K., Nellikkattil, A., Ramos, A. M., Reid, K. J., Shearer, E., Tomé, R., Wille, J. D., Leung, L. R., Ralph, F. M., Rutz, J. J., Wehner, M., Zhang, Z., Lu, M., and Quagrain, K. T.: Atmospheric River Detection Under Changing Seasonality and Mean-State Climate: ARTMIP Tier 2 Paleoclimate Experiments, *Journal of Geophysical Research: Atmospheres*, 130, e2024JD042222, <https://doi.org/10.1029/2024JD042222>, 2025.
- Bromwich, D. H., Gorodetskaya, I. V., Carpentier, S., Alexander, S., Bazile, E., Heinrich, V. J., Massonnet, F., Powers, J. G., Carrasco, J. F., Cayette, A., Choi, T., Chykhareva, A., Colwell, S. R., Cordeira, J. M., Cordero, R. R., Doerenbecher, A., Durán-Alarcón, C., French, W. J. R., Gonzalez-Herrero, S., Guyot, A., Haiden, T., Hirasawa, N., Imazio, P. R., Kawzenuk, B., Krakovska, S., Lazzara, M. A., Liteil, M. F., Manning, K. W., Norris, K., Park, S.-J., Ralph, F. M., Rowe, P. M., Sun, Q., Vitale, V., Wille, J. D., Zhang, Z., and Zou, X.: Winter Targeted Observing Periods during the Year of Polar Prediction in the Southern Hemisphere (YOPP-SH), *Bulletin of the American Meteorological Society*, <https://doi.org/10.1175/BAMS-D-22-0249.1>, 2024.
- Wille, J. D., Pohl, B., Favier, V., Winters, A. C., Baiman, R., Cavallo, S. M., Leroy-Dos Santos, C., Clem, K., Udy, D. G., Vance, T. R., Gorodetskaya, I., Codron, F., and Berchet, A.: Examining Atmospheric River Life Cycles in East Antarctica, *Journal of Geophysical Research: Atmospheres*, 129, e2023JD039970, <https://doi.org/10.1029/2023JD039970>, 2024.
- Simon, S., Turner, J., Thamban, M., Wille, J. D., and Deb, P.: Spatiotemporal Variability of Extreme Precipitation Events and Associated Atmospheric Processes Over Dronning Maud Land, East Antarctica, *Journal of Geophysical Research: Atmospheres*, 129, e2023JD038993, <https://doi.org/10.1029/2023JD038993>, 2024.
- Baiman, R., Winters, A. C., Pohl, B., Favier, V., Wille, J. D., and Clem, K. R.: Synoptic and planetary-scale dynamics modulate antarctic atmospheric river precipitation intensity, *Communications Earth & Environment*, 5, 127, <https://doi.org/10.1038/s43247-024-01307-9>, 2024.
- Lapere, R., Thomas, J. L., Favier, V., Angot, H., Asplund, J., Ekman, A. M. L., Marelle, L., Raut, J.-C., Da Silva, A., Wille, J. D., and Zieger, P.: Polar Aerosol Atmospheric Rivers: Detection, Characteristics, and Potential Applications, *Journal of Geophysical Research: Atmospheres*, 129, e2023JD039606, <https://doi.org/10.1029/2023JD039606>, 2024.
- Wille, J. D., Alexander, S. P., Amory, C., Baiman, R., Barthélemy, L., Bergstrom, D. M., Berne, A., Binder, H., Blanchet, J., Bozkurt, D., Bracegirdle, T. J., Casado, M., Choi, T., Clem, K. R., Codron, F., Datta, R., Battista, S. D., Favier, V., Francis, D., Fraser, A. D., Fourré, E., Garreaud, R. D., Genthon, C., Gorodetskaya, I. V., González-Herrero, S., Heinrich, V. J., Hubert, G., Joos, H., Kim, S.-J., King, J. C., Kittel, C., Landais, A., Lazzara, M., Leonard, G. H., Lieser, J. L., MacLennan, M., Mikolajczyk, D., Neff, P., Ollivier, I., Picard, G., Pohl, B., Ralph, M. F., Rowe, P., Schlosser, E., Shields, C. A., Smith, I. J., Sprenger, M., Trusel, L., Udy, D., Vance, T., Vignon, É., Walker, C., Wever, N., and Zou, X.: The extraordinary March 2022 East Antarctica “heat” wave. Part II: impacts on the Antarctic ice sheet, *Journal of Climate*, <https://doi.org/10.1175/JCLI-D-23-0176.1>, 2024.
- Wille, J. D., Alexander, S. P., Amory, C., Baiman, R., Barthélemy, L., Bergstrom, D. M., Berne, A., Binder, H., Blanchet, J., Bozkurt, D., Bracegirdle, T. J., Casado, M., Choi, T., Clem, K. R., Codron, F., Datta, R., Battista, S. D., Favier, V., Francis, D., Fraser, A. D., Fourré, E., Garreaud, R. D., Genthon, C., Gorodetskaya, I. V., González-Herrero, S., Heinrich, V. J., Hubert, G., Joos, H., Kim, S.-J., King, J. C., Kittel, C., Landais, A., Lazzara, M., Leonard, G. H., Lieser, J. L., MacLennan, M., Mikolajczyk, D., Neff, P., Ollivier, I., Picard, G., Pohl, B., Ralph, M. F., Rowe, P., Schlosser, E., Shields, C. A., Smith, I. J., Sprenger, M., Trusel, L., Udy, D., Vance, T., Vignon, É., Walker, C., Wever, N., and Zou, X.: The extraordinary March 2022 East Antarctica “heat” wave. Part I: observations and meteorological drivers, *Journal of Climate*, <https://doi.org/10.1175/JCLI-D-23-0175.1>, 2024.
- Gorodetskaya, I. V., Durán-Alarcón, C., González-Herrero, S., Clem, K. R., Zou, X., Rowe, P., Rodriguez Imazio, P., Campos, D., Leroy-Dos Santos, C., Dutrievoz, N., Wille, J. D., Chykhareva, A., Favier, V., Blanchet, J., Pohl, B., Cordero, R. R., Park, S.-J., Colwell, S., Lazzara, M. A., Carrasco, J., Gulisano, A. M., Krakovska, S., Ralph, F. M., Dethinne, T., and Picard, G.: Record-high Antarctic Peninsula temperatures and surface melt in February 2022: a compound event with an intense atmospheric river, *npj Climate and Atmospheric Science*, 6, 202, <https://doi.org/10.1038/s41612-023-00529-6>, 2023.
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- Clem, K. R., Adusumilli, S., Baiman, R., Banwell, A. F., Barreira, S., Beadling, R. L., Bozkurt, D., Colwell, S., Coy, L., Datta, R. T., Laat, J. D., Plessis, M.

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- Pohl, B., Prince, H. D., **Wille, J.**, Kingston, D. G., Cullen, N. J., and Fauchereau, N.: Atmospheric Rivers and Weather Types in Aotearoa New Zealand: A Two-Way Story, *Journal of Geophysical Research: Atmospheres*, 128, e2022JD037209, <https://doi.org/10.1029/2022JD037209>, 2023.
- Hubert, G., Ricaud, P., Favier, V., and **Wille, J.**: Impact of the atmospheric river occurring in March 2022 on east Antarctica on Cosmic-Rays measurements, in: Proceedings of 38th International Cosmic Ray Conference — PoS(ICRC2023), 38th International Cosmic Ray Conference, Nagoya, Japan, 233, <https://doi.org/10.22323/1.444.0233>, 2023.
- Mattingly, K. S., Turton, J. V., **Wille, J. D.**, Noël, B., Fettweis, X., Rennermalm, Å. K., and Mote, T. L.: Increasing extreme melt in northeast Greenland linked to foehn winds and atmospheric rivers, *Nature Communications*, 14, 1743, <https://doi.org/10.1038/s41467-023-37434-8>, 2023.
- MacLennan, M. L., Lenaerts, J. T. M., Shields, C. A., Hoffman, A. O., Wever, N., Thompson-Munson, M., Winters, A. C., Pettit, E. C., Scambos, T. A., and **Wille, J. D.**: Climatology and surface impacts of atmospheric rivers on West Antarctica, *The Cryosphere*, 17, 865–881, <https://doi.org/10.5194/tc-17-865-2023>, 2023.
- MacLennan, M. L., Lenaerts, J. T. M., Shields, C., and **Wille, J. D.**: Contribution of Atmospheric Rivers to Antarctic Precipitation, *Geophysical Research Letters*, 49, e2022GL100585, <https://doi.org/10.1029/2022GL100585>, 2022.
- Verfaillie, D., Pelletier, C., Gooose, H., Jourdain, N. C., Bull, C. Y. S., Dalaiden, Q., Favier, V., Fichet, T., and **Wille, J. D.**: The circum-Antarctic ice-shelves respond to a more positive Southern Annular Mode with regionally varied melting, *Communications Earth & Environment*, 3, 139, <https://doi.org/10.1038/s43247-022-00458-x>, 2022.
- Turner, J., Lu, H., King, J. C., Carpentier, S., Lazzara, M., Phillips, T., and **Wille, J.**: An Extreme High Temperature Event in Coastal East Antarctica Associated With an Atmospheric River and Record Summer Downslope Winds, 49, e2021GL097108, <https://doi.org/10.1029/2021GL097108>, 2022.
- Clem, K. R., Raphael, M. N., Adusumilli, S., Baiman, R., Banwell, A. F., Barreira, S., Beadling, R. L., Colwell, S., Coy, L., Datta, R. T., Laat, J. D., Dunmire, D., Fogt, R. L., Freeman, N. M., Fricker, H. A., Gardner, A. S., Johnson, B., Keller, L. M., Kramarova, N. A., Lazzara, M. A., Lieser, J. L., MacFerrin, M., MacGilchrist, G. A., MacLennan, M. L., Massom, R. A., Mazloff, M. R., Mote, T. L., Nash, E. R., Newman, P. A., Norton, T., Petropavlovskikh, I., Pitts, M., Reid, P., Santee, M. L., Scambos, T. A., Shi, J.-R., Stammerjohn, S., Strahan, S. E., Thompson, A. F., **Wille, J. D.**, and Wilson, E.: Antarctica and the Southern Ocean, *Bulletin of the American Meteorological Society*, 103, S307–S340, <https://doi.org/10.1175/BAMS-D-22-0078.1>, 2022.
- Favier, V., **Wille, J.**, Agosta, C., Amory, C., Barthélémy, L., Codron, F., Fourré, É., Gorodetskaya, I., Krinner, G., and Pohl, B.: Les rivières atmosphériques de l'Antarctique, *Météorologie*, 019, <https://doi.org/10.37053/lameteorologie-2022-0032>, 2022.
- Shields, C. A., **Wille, J. D.**, Marquardt Collow, A. B., MacLennan, M., and Gorodetskaya, I. V.: Evaluating Uncertainty and Modes of Variability for Antarctic Atmospheric Rivers, *Geophysical Research Letters*, 49, e2022GL099577, <https://doi.org/10.1029/2022GL099577>, 2022.
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