GIJS DE BOER
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Polar Research Interests

My research revolves around understanding Arctic clouds, aerosols, precipitation and the surface energy budget, and the interactions between them. This work involves analysis of long-term observations, data collection including use of unmanned aircraft, and modeling studies.

Education and Training

2004-2009	PhD, The University of Wisconsin - Madison, Atmospheric and Oceanic Sciences
2002-2004	M.S., The University of Wisconsin - Madison, Atmospheric and Oceanic Sciences
1998-2002	B.S., Cornell University, Earth and Atmospheric Sciences

Professional Experience

2011-present:	*Research Scientist*, The Cooperative Institute for Research in Environmental Science (CIRES) at the University of Colorado – Boulder
2011-2012:	*Project Scientist*, Lawrence Berkeley National Laboratory
2009-2011:	*Postdoctoral Researcher*, Lawrence Berkeley National Laboratory
2009:	*Postdoctoral Scholar*, The University of Wisconsin – Madison
2002-2009:	*Research Assistant*, The University of Wisconsin – Madison
2001-2002:	*Research Assistant*, Northeast Regional Climate Center at Cornell University
2001:	*Teaching Assistant*, Cornell University: Dept. of Earth and Atmospheric Science

Publications

de Boer, G., S. Palo, B. Argrow, G. LoDolce, J. Mack, R.-S. Gao, H. Telg, C. Trussel, J. Fromm, C.N. Long, G. Bland, J. Maslanik, B. Schmid, and T. Hock: The Pilatus Unmanned Aircraft System for Lower Atmospheric Research, *Atmos. Meas. Tech.*, In review.

de Boer, G., M.D. Ivey, B. Schmid, S. McFarlane, and R. Petty: Oliktok Point: Providing Access to Arctic Skies for Unmanned Aircraft and Tethered Balloons, *EOS*, In Press.

Uttal, T., S. Starkweather, J. Drummond, T. Vihma, C.J. Cox, E. Dlugokencky, J. Ogren, B. McArthur, L. Schmeisser, V. Walden, T. Laurila, L. Darby, A.P. Makshtas, J. Intrieri, J.F. Burkhart, T. Haiden, B. Goodison, M. Maturilli, M. Shupe, **G. de Boer** and co-authors: International Arctic Systems for Observing the Atmosphere (IASOA): An International Polar Year Legacy Consortium, *Bull. Amer. Meteorol. Soc.*, In Press.

Intrieri, J.M., **G. de Boer**, M.D. Shupe, J.R. Spackman, J. Wang, P.J. Neiman, G.A. Wick, T. Hock and R.E. Hood: Global Hawk dropsonde observations of the Arctic atmosphere during the Winter Storms and Pacific Atmospheric Rivers (WISPAR) campaign, *Atmos. Meas. Tech. Discuss.*, 7, 4067-4092.

de Boer, G., M.D. Shupe, P.M. Caldwell, S.E. Bauer, P.O.G. Persson, J.S. Boyle, M. Kelly, S.A. Klein and M. Tjernström: Near-Surface Meteorology During the Arctic Cloud Ocean Study (ASCOS): Evaluation of Reanalyses and Global Climate Models, *Atmos. Chem. Phys.*, 14, 427-445.

Wesslen, C., M. Tjernstrom, D.H. Bromwich, **G. de Boer**, L.-S. Bai and S.-H. Wang: The Arctic summer atmosphere: An evaluation of reanalyses using ASCOS data, *Atmos. Chem. Phys.*, 14, 2605-2624.

Solomon, A., M.D. Shupe, P.O.G. Persson, H. Morrison, T. Yamaguchi, G. Feingold, P.M. Caldwell and **G. de Boer**: The sensitivity of springtime Arctic mixed-phase stratocumulus clouds to surface layer and cloud-top inversion layer moisture sources, *J. Atmos. Sci.*, 71, 574-595.

de Boer, G., S. Menon, S.E. Bauer, T. Toto and A. Vogelmann (2013): Evaluation of aerosol-cloud interactions in the GISS ModelE using ASR observations, *J. Geophys. Res.*, 118, 6383-6395, doi: 10.1002/jgrd.50460.

de Boer, G., T. Hashino, G.J. Tripoli and E.W. Eloranta (2013): A Numerical Study of Aerosol Influence

on Mixed- Phase Stratiform Clouds through Modulation of the Liquid Phase, *Atmos. Chem. Phys.*, 13, 1733-1749.

de Boer, G., G.J. Tripoli and E.W. Eloranta (2012): Implementation and Validation of Dynamical Downscaling in a Micro-Scale Simulation of a Lake Michigan Land Breeze, *ISRN Meteor.*, 2012, 529401, doi: 10.5402/2012/529401.

Cesana, G., J.E. Kay, H. Chepfer, J. English and **G. de Boer** (2012): Ubiquitous Low-Level Liquid-Containing Arctic Clouds: New Observations and Climate Model Constraints from CALIPSO-GOCCP, *Geophys. Res. Lett.*, 39, L20804.

de Boer, G., W. Chapman, J. Kay, B. Medeiros, M.D. Shupe, S. Vavrus and J.E. Walsh (2012): A Characterization of the Arctic Atmosphere in CCSM4, *J. Clim.*, 25, 2676-2695.

Morrison, H., **G. de Boer**, G. Feingold, J.Y. Harrington, M.D. Shupe and K. Sulia (2012): Resillience of Persistent Arctic Mixed-Phase Clouds, *Nature Geosci.*, 5, 11-17.

de Boer, G., W.D. Collins, S. Menon, C.N. Long (2011): Using Surface Remote Sensors to Derive Radiative Characteristics of Mixed-Phase Clouds: An Example from M-PACE, *Atmos. Chem. Phys.*, 11, 11937-11949.

Morrison, H., P. Zuidema, A. Ackerman, A. Avramov, **G. de Boer**, J. Fan, A. Fridlind, T. Hashino, J. Harrington, Y. Luo, M. Ovchinnikov, and B. Shipway (2011): Intercomparison of Cloud Model Simulations of Arctic Mixed-Phase Boundary Layer Clouds Observed During SHEBA, *J. Adv. Model. Earth Syst.*, 3, M06003.

de Boer, G., H. Morrison, R. Hildner, and M.D. Shupe (2011): Evidence of Liquid-Dependent Ice Nucleation in High-Latitude Stratiform Clouds from Surface Remote Sensors, *Geophys. Res. Lett.*, 38, L01803.

de Boer, G., T. Hashino, and G.J. Tripoli (2010): Ice Nucleation Through Immersion Freezing in Mixed-Phase Stratiform Clouds: Theory and Numerical Simulations, *Atmos. Res.*, 96, 315-324.

de Boer, G., E.W. Eloranta, and M.D. Shupe (2009): Arctic Mixed-Phase Stratus Properties from Multiple Years of Surface-Based Measurements at Two High-Latitude Locations, *J. Atmos. Sci.*, 66, 2874-2887.

Klein, S.A., R. McCoy, H. Morrison, A. Ackerman, A. Avramov, **G. de Boer**, and co-authors (2009): Intercomparison of model simulations of mixed-phase clouds observed during the ARM Mixed-Phase Arctic Cloud Experiment. Part I: Single layer cloud, *Q. J. Roy. Meteor. Soc.*, 135, 979-1002.

de Boer, G., G.J. Tripoli, and E.W. Eloranta (2008): Preliminary Comparison of CloudSAT-Derived Microphysical Quantities with Ground-Based Measurements for Mixed-Phase Stratus Research, *J. Geophys. Res.*, 113, D00A06.

Shupe, M.D., J.S. Daniel, **G. de Boer**, E.W. Eloranta, P. Kolias. C.N. Long, E.P. Luke, D.D. Turner and J. Verlinde (2008): A Focus on Mixed-Phase Clouds: The Status of Ground-Based Observational Methods, *Bull. Amer. Meteor. Soc.*, 89, 1549-1562.

Presentations

A complete list of first author presentations can be found on my website.

Interdisciplinary Activities, Outreach and Awards

- *Presidential Early Career Award for Science and Engineering (PECASE)* (2016)
- *Site Scientist:* DOE ARM program Oliktok Point facility
- *Science Steering Committee:* International Society for Atmospheric Research using Remotely piloted Aircraft (ISARRA) conferences (2015 and 2016)
- *Conference Session Convener:* Current and future observing strategies for understanding the evolving Arctic climate and ecological system (2015 Arctic Science Summit Week); Use of Unmanned Aircraft in Geoscience (2014 AGU); Observational Needs for Polar Climate Modeling (AGU 2012); Polar Observing Systems (2012 International Polar Year Conference)
- *Instructor:* International Arctic Research Center (IARC) Summer School on Modeling of the Arctic Climate System (2011 and 2016)
- *Member:* DOE UAS advisory committee (2015-present); AMS Committee on Laser Atmospheric Studies (CLAS, 2007-2011)

Gijs de Boer

- *Group Lead:* US Department of Energy Atmospheric System Research (ASR) Program focus group on cloud phase and mixed-phase cloud properties
- *Meeting Presentation Awards and Honors:* Outstanding early career presentation, GEWEX Int'l. Science Conference (2014); Outstanding Oral Presentation Award, Arctic Science Summit Week (2011); Showcased Research Highlight, ASR Science Team Meeting (2011); Chief Scientist Award: Poster Presentation, ARM Science Team Meeting (2008)
- *Outreach:* Have participated in or funded six outreach trips for Arctic researchers (mainly early career) to Barrow, Alaska. These trips involve public lectures, STEM camp activities and classroom visits.