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 (Arctic-Related Only)

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., 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.

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**, M. Chen, J. Cole, A.D. DelGenio, M. Falk, M. Foster, A. Fridlind, J.-C. Golaz, T. Hashino, J. Harrington, C. Hoose, M. Khairoutdinov, V. Larson, X. Liu, Y. Luo, G. McFarquhar, S. Menon, R. Neggers, S. Park, K. von Salzen, J.M. Schmidt, I. Sednev, B. Shipway, M. Shupe, D. Spangenberg, Y. Sud, D. Turner, D. Veron, G. Walker, Z. Wang, A. Wolf, S. Xie, K.-M. Xu, F. Yang, and G. Zhang (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

67 first-author presentations – A complete list can be found on my website.

Interdisciplinary Activities, Outreach and Awards

- *Site Scientist:* DOE ARM program Oliktok Point facility
- *Science Steering Committee:* 2015 International Society for Atmospheric Research using Remotely piloted Aircraft (ISARRA) conference
- *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:* 2011 International Arctic Research Center (IARC) Summer School on Modeling of the Arctic Climate System
- *Member:* AMS Committee on Laser Atmospheric Studies (CLAS, 2007-2011)
- *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 five outreach trips for Arctic researchers (mainly early career) to Barrow, Alaska, and am funded to complete an outreach trip to Nuuk, Greenland in the coming year. These trips involve public lectures, STEM camp activities and classroom visits.