Yonggang Wang

Contact Information

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Research Interests

Mesoscale dynamics of precipitating systems, cloud physics, climate variability and change, data assimilation, numerical weather prediction.

Education

Date	Degree	Major	Institution
05/2012	Ph.D.	Atmospheric Science	University of Wyoming, USA
05/2007	M.Sc.	Mechanical Engineering	University of Wyoming, USA
05/2002	MEng	Thermal Power Engineering	Hebei University of Technology, China
07/1999	BEng	Thermal Power Engineering	Hebei University of Technology, China

Appointments

2016-present Research Assistant Professor, Dept. of Geosciences, Texas Tech Univ.
2012-2016 Postdoctoral Research Associate, Dept. of Atmospheric Science, Univ. of Wyoming
2007-2012 Teaching/Research Assistant, Dept. of Atmospheric Science, Univ. of Wyoming
2004-2007 Teaching/Research Assistant, Dept. of Mechanical Engineering, Univ. of Wyoming

Teaching Experiences

Course	Title	Time
ME 2160	Thermal/Fluid Science Lab	F (2005); Sp (2006)
ES 1060	Introduction to Engineering Problem Solving	F (2007, 2008); Sp (2009)
ATSC 2000	Introduction to Meteorology Lab	F (2010); Sp (2011)
ATSC 3032	Weather Analysis and Forecasting Lab	Sp (2013)

Grant Activity

Proposal Title: High-resolution modeling of precipitation, snowpack, and streamflow in Wyoming: quantifying water supply variations in future decades.
Role: co-PI
Source of Support: University of Wyoming - Office of Water Programs
Total Award Amount: $194,734
Total Award Period Covered: 03/01/2014 - 06/30/2017

Proposal Title: High-resolution modeling of streamflow in the Rocky Mountain Headwater region:

quantifying seasonal water supply variations and extreme flows in future decades.
Role: co-PI
Source of Support: Wyoming EPSCoR
Total Award Amount: $50,000
Total Award Period Covered: 06/01/2016 - 05/31/2017

Papers in Refereed Journals

1. **Wang, Y.**, B. Geerts, and C. Liu, 2017: Retrospective high-resolution regional climate simulations over North-central US: validation of fine-scale pattern of cold-season precipitation over complex terrain. *J. Climate*, to be submitted.
2. Jing, X., B. Geerts, **Y. Wang**, and C. Liu, 2017: Regional climate simulation of orographic precipitation in the interior western United States: comparisons with gauge and high-resolution gridded datasets. *J. Climate*, to be submitted.
3. **Wang, Y.**, B. Geerts, and Y. Chen, 2016: Vertical structure of boundary-layer convection during cold-air outbreaks at Barrow, Alaska. *J. Geophys. Res. Atmos.*, **121**, 399-412, doi:10.1002/2015JD023506.
4. **Wang, Y.**, and B. Geerts, 2015: Vertical-plane dual-Doppler radar observations of cumulus toroidal circulations. *J. Appl. Meteor. Climat.,* **54**, 2009-2026.
5. **Wang, Y.**, and B. Geerts, 2013: Composite vertical structure of vertical velocity in non-precipitating cumulus clouds. *Mon. Wea. Rev.,* **141**, 1673-1692.
6. **Wang, Y.**, and B. Geerts, 2011: Observations of detrainment signatures from non-precipitating orographic cumulus clouds. *Atmos. Res.,* **99**, 302-324.
7. **Wang, Y.**, and B. Geerts, 2010: Humidity variations across the edge of trade wind cumuli: observations and dynamical implications. *Atmos. Res.,* **97**, 144-156.
8. **Wang, Y.**, B. Geerts, and J. French, 2009: Dynamics of the cumulus cloud margin: an observational study. *J. Atmos. Sci.,* **66**, 3660-3677.
9. **Wang, Y.**, and B. Geerts, 2009: Estimating the evaporative cooling bias of an airborne reverse flow thermometer. *J. Atmos. Ocean. Tech.*, **26**, 3-21.
10. Geerts, B., T. Andretta, S. Luberda, J. Vogt, **Y. Wang**, L. D. Oolman, J. Finch, and D. Bikos, 2009: A case study of a long-lived tornadic mesocyclone in a low-CAPE complex-terrain environment. *Electronic J. Severe Storms Meteor.*, **4 (3)**, 1-29.

Conference Presentations

1. **Wang, Y.**, L. Xue, B. Geerts, 2016: Mixed-phase Convective Clouds in the High-latitude Marine Boundary Layer: Validation of Convection Parameterizations against DOE-ARM Observations and High-resolution Simulations, *XVII International Conference on Clouds & Precipitation, Manchester,* United Kingdom, 25-29 July.
2. Jing, X., B. Geerts, **Y. Wang**, 2016: Regional climate simulations of orographic precipitation in Interior Western USA: warm-season vs. cold-season precipitation. *GEWEX Convection-Permitting Climate Modeling Workshop*, Boulder, CO, 6-8 September.
3. **Wang, Y.**, B. Geerts, C. Liu, 2016: Precipitation and Snowpack Dynamics over Mountains in the Interior Western US in a Changing Global Climate, *17th AMS Conference on Mountain Meteorology*, Burlington, VT, 27 June - 1 July.
4. Jing, X, B. Geerts, **Y. Wang**, 2016: What Controls Wintertime Precipitation Distribution Across a Mountain Range? Insights from Regional Climate Simulations in the Interior Western US, *17th AMS Conference on Mountain Meteorology*, Burlington, VT, 27 June - 1 July.

5. Bergmaier, P, B. Geerts, **Y. Wang**, 2015: Airborne Dual-Doppler Observations of the 11 Dec 2013 Lake-effect Snow Band during OWLeS, *16th AMS Conference on Mesoscale Processes*, Boston, MA, 2-6 August.
6. **Wang, Y.**, B. Geerts, C. Liu, 2015: Regional climate simulations of cold-season precipitation and snowpack over the US northern Rockies: validation and examination of factors controlling the precipitation distribution, *27th Conference on Climate Variability and Change, 95th AMS Annual Meeting*, Phoenix, AZ, 4-8 January.
7. **Wang, Y.**, and B. Geerts, 2011: Radar observations of vortex-ring entrainment patterns in cumulus clouds, *14th AMS Conference on Mesoscale Processes*, Los Angeles, CA, 1-4 August.
8. **Wang, Y.**, and B. Geerts, 2010: Observations of the impact of orographic cumulus clouds on the ambient flow, *13th AMS Conference on Cloud Physics*, Portland, OR, 28 June - 2 July.
9. Geerts, B., T. Andretta, S. Luberda, J. Vogt, and **Y.Wang**, 2009: Orographically-generated potential vorticity banners as a source of mesocyclone vorticity: and observational and modelling case study. *5th European Converence on Severe Storms*, Landshut, Germany, 12-16 October.
10. Geerts, B., T. Andretta, S. Luberda, J. Vogt, and **Y.Wang**, 2009: Observations and simulations of a long-lived tornadic mesocyclone that formed in a low-CAPE environment with PV banners spawned by the Colorado Front Range. *13th AMS Conference on Mesoscale Processes*, Salt Lake City, UT, 17-20 August.
11. Geerts, B., T. Andretta, S. Luberda, J. Vogt, and **Y.Wang**, 2009: Dynamics of a long-lived tornadic supercell in a low-CAPE environment over high terrain in Wyoming. *13th Annual Northern Plains Weather Workshop*, Rapid City, SD, 7-8 April.

Professional Activities and Memberships

Manuscript Reviewer: Journal of Atmospheric and Oceanic Technology, Journal of Applied Meteorology and Climatology, Journal of Operational Meteorology, Atmospheric Science Letter, International Journal of Microwave and Wireless Technologies.

Graduate Advisee: Xiaoqin Jing, Ph.D., University of Wyoming.