

Brian Hong-An Tang

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Updated: 7/26/2018

EDUCATION

- 9/2010 Ph.D. Atmospheric Science
 Massachusetts Institute of Technology
 Thesis: Midlevel ventilation's constraint on tropical cyclone intensity
 Advisor: Dr. Kerry Emanuel
- 6/2004 B.S. Atmospheric & Oceanic Sciences
 B.S. Applied Mathematics with a specialization in Computing
 University of California Los Angeles

EMPLOYMENT

- 8/2012–present Assistant Professor
 Department of Atmospheric and Environmental Sciences
 University at Albany – State University of New York
- 9/2010–8/2012 Joanne and Bob Simpson Postdoctoral Fellow
 National Center for Atmospheric Research, Boulder, CO

HONORS & AWARDS

- Top Faculty/Staff Forecaster in the 2013–2014 WxChallenge forecast competition, 4/2014
Top Faculty/Staff Forecaster in the 2012–2013 WxChallenge forecast competition, 4/2013
Max A. Eaton Prize, 4/2008
Top Graduate Forecaster in the 2007–2008 WxChallenge forecast competition, 4/2008
Graduate Student Teaching Award, 5/2007
Top Overall Forecaster in the 2006–2007 WxChallenge forecast competition, 4/2007
Office of Naval Research Graduate Fellowship, 6/2004

PUBLICATIONS

I. *Submitted or In Revision*

- Tang, B., 2018: Increasing urban exposure to damaging hailstorms in the United States. *Bull. Amer. Meteor. Soc.*, submitted.

II. *Published*

- Fischer, M., B. Tang, K. Corbosiero, and C. Rozoff, 2018: [Normalized convective characteristics of tropical cyclone rapid intensification events in the North Atlantic and eastern North Pacific.](#)

- Mon. Wea. Rev.*, **146**, 1133–1155.
- Tang, B., and N. Bassill, 2018: [Point downscaling of surface wind speed for forecast applications](#). *J. Appl. Meteor. Climatol.*, **57**, 659–674.
- Vaughan, M., B. Tang, and L. Bosart, 2017: [Climatology and analysis of high-impact, low predictive skill severe weather events in the northeast United States](#). *Wea. Forecasting*, **32**, 1903–1919.
- Tang, B., 2017b: [Coupled dynamic-thermodynamic forcings during tropical cyclogenesis: Part II. Axisymmetric experiments](#). *J. Atmos. Sci.*, **74**, 2279–2291.
- Tang, B., 2017a: [Coupled dynamic-thermodynamic forcings during tropical cyclogenesis: Part I. Diagnostic framework](#). *J. Atmos. Sci.*, **74**, 2269–2278.
- Alland, J., B. Tang, and K. Corbosiero, 2017: [Effects of mid-level dry air on development of the axisymmetric tropical cyclone secondary circulation](#). *J. Atmos. Sci.*, **74**, 1455–1470.
- Fischer, M., B. Tang, and K. Corbosiero, 2017: [Assessing the influence of upper-tropospheric troughs on tropical cyclone intensification rates after genesis](#). *Mon. Wea. Rev.*, **145**, 1295–1313.
- Tang, B., R. Rios-Berrios, J. Alland, J. Berman, and K. Corbosiero, 2016: [Sensitivity of axisymmetric tropical cyclone spin-up time to dry air aloft](#). *J. Atmos. Sci.*, **73**, 4269–4287.
- Peirano, C., K. Corbosiero, and B. Tang, 2016: [Revisiting trough interactions and tropical cyclone intensity change](#). *Geophys. Res. Lett.*, **43**, doi:10.1002/2016GL069040.
- Tang, B., M. Vaughan, R. Lazear, K. Corbosiero, L. Bosart, T. Wasula, I. Lee, and K. Lipton, 2016: [Topographic and boundary influences on the 22 May 2014 Duanesburg, New York, tornadic supercell](#). *Wea. Forecasting*, **31**, 107–127.
- Tang, B., and S. Camargo, 2014: [Environmental control of tropical cyclones in CMIP5: A ventilation perspective](#). *J. Adv. Model. Earth Syst.*, doi: 10.1002/2013MS000294.
- Rios-Berrios, R., T. Vukicevic, and B. Tang, 2014: [Adopting model uncertainties for tropical cyclone intensity prediction](#). *Mon. Wea. Rev.*, **142**, 72–78.
- Tang, B., and K. Emanuel, 2012b: [A ventilation index for tropical cyclones](#). *Bull. Amer. Meteor. Soc.*, **93**, 1901–1912.
- Tang, B., and K. Emanuel, 2012a: [Sensitivity of tropical cyclone intensity to ventilation in an axisymmetric model](#). *J. Atmos. Sci.*, **69**, 2394–2413.
- Evans, C., H. Archambault, J. Cordeira, C. Fritz, T. Galarneau Jr., S. Gjorgjievska, K. Griffin, A. Johnson, W. Komaromi, S. Monette, P. Muradyan, B. Murphy, M. Riemer, J. Sears, D. Stern,

B. Tang, and S. Thompson, 2012: [The PRE-Depression Investigation of Cloud-systems in the Tropics \(PREDICT\) field campaign: Perspectives of early career scientists](#). *Bull. Amer. Meteor. Soc.*, **93**, 173–187.

Tang, B., and K. Emanuel, 2010: [Midlevel ventilation's constraint on tropical cyclone intensity](#). *J. Atmos. Sci.*, **67**, 1817–1830.

Tang, B., and J. D. Neelin, 2004: [ENSO influence on Atlantic hurricanes via tropospheric warming](#). *Geophys. Res. Lett.*, **31**, L24204, doi:10.1029/2004GL021072.

WEBSITES DEVELOPED

WxChallenge Model Output (<http://www.atmos.albany.edu/facstaff/btang/forecast/>)

Tropical Cyclone Guidance (<http://www.atmos.albany.edu/facstaff/btang/tcguidance/>)

GRANT FUNDING (*\$ amount represents total costs*)

I. Pending

Collaborative Research: Framework: Software: Big Weather Web 2. National Science Foundation 18-531, 9/1/2018–8/31/2021, \$348,042. (PI)

II. Funded

Investigating Ventilation Processes and Effects on Tropical Cyclones. National Science Foundation, 3/15/2018–2/28/2021, \$394,924. (PI)

Investigating Tropical Cyclone Intensity Change due to Trough-Induced Vertical Wind Shear. NASA NNH16ZDA001N-WEATHER: Weather and Atmospheric Dynamics, 2/24/2017–2/23/2020, \$299,997. (Co-PI)

Development of Improved Diagnostics, Numerical Models, and Situational Awareness of High-Impact Cyclones and Convective Weather Events. NOAA-NWS-NWSPO-2016-2004564: Collaborative Science, Technology, and Applied Research Program, 5/1/2016–4/30/2019, \$450,000. (Co-PI)

Intensity and Frequency of Severe Hailstorms. Risk Prediction Initiative, 8/22/2016–8/21/2017, \$52,032. (PI)

Collaborative Research with the National Weather Service on the Occurrence and Prediction of High-Impact Precipitation Events in the Northeastern United States, NOAA-NWS-NWSPO-2013-2003473: Collaborative Science, Technology, and Applied Research Program, 9/1/2013–8/31/2016, \$375,000. (Co-PI)

Severe Convective Storms in Complex Terrain. Cooperative Program for Operational Meteorology, Education and Training Partners Project, 7/6/2015–7/30/2016, \$20,000. (PI)

Internal and Environmental Diagnostics for Tropical Cyclogenesis. University at Albany Faculty Research Awards Program, 5/1/2014–4/30/2016, \$9,633. (PI)

Integration of Virtual and Real Equipment Learning Tools Related to Sustainability Education. State University of New York Innovative Instruction Technology Tier 2 Grants, 7/1/2013–6/30/2014, \$15,000. (Co-PI)

PUBLISHED EXTENDED ABSTRACTS

Alland, J., B. Tang, and K. Corbosiero, 2018: [The synergistic effect of midlevel dry air and vertical wind shear on tropical cyclone ventilation pathways](#). 33rd Conference on Hurricanes and Tropical Meteorology, Ponte Vedra, FL, Amer. Meteor. Soc., 8C.1.

Fischer, M., B. Tang, and K. Corbosiero, 2018: [Characteristics of tropical cyclone rapid intensification in environments of upper-tropospheric troughs](#). 33rd Conference on Hurricanes and Tropical Meteorology, Ponte Vedra, FL, Amer. Meteor. Soc., 9C.2.

Peirano, C., K. Corbosiero, and B. Tang, 2018: [Tropical cyclone intensity change under the influence of upper-tropospheric troughs in idealized simulations](#). 33rd Conference on Hurricanes and Tropical Meteorology, Ponte Vedra, FL, Amer. Meteor. Soc., 2D.1.

Alland, J., and B. Tang, 2016: [Sensitivity of tropical cyclone spinup time and convection to the initial entropy deficit](#). 32nd Conference on Hurricanes and Tropical Meteorology, San Juan, PR, Amer. Meteor. Soc., 4D.8.

Fischer, M., and B. Tang, 2016: [The influence of an upper tropospheric potential vorticity anomaly on rapid tropical cyclogenesis](#). 32nd Conference on Hurricanes and Tropical Meteorology, San Juan, PR, Amer. Meteor. Soc., 2D.1.

Tang, B., and K. Emanuel, 2010: [Entropy ventilation in an axisymmetric tropical cyclone model](#). 29th Conference on Hurricanes and Tropical Meteorology, Tucson, AZ, Amer. Meteor. Soc., 7C.2.

Tang, B., 2008: [Mid-level ventilation's effects on tropical cyclone thermodynamic structure and intensity](#). 28th Conference on Hurricanes and Tropical Meteorology, Orlando, FL, Amer. Meteor. Soc., 11B.7.

PRESENTATIONS

I. Invited Talks

Tang, B., 2018: Big whirls and little whirls. Hobart and William Smith Colleges, Geneva, NY.

Tang, B., 2017: Coupled dynamic-thermodynamic forcings during tropical cyclogenesis. McGill University, Montreal, QC, Canada.

- Tang, B., 2016: Gross moist stability constraints on tropical cyclogenesis. Yale University, New Haven, CT.
- Tang, B., 2016: Coupled dynamic-thermodynamic forcings during tropical cyclogenesis. Columbia University Lamont-Doherty Earth Observatory, Palisades, NY.
- Tang, B., P. Klotzbach, and K. MacRitchie, 2014: The curiously quiet 2013 North Atlantic hurricane season. Stony Brook University, Stony Brook, NY.
- Tang, B., 2013: Ventilation's constraint on tropical cyclones. New York University, New York City, NY.
- Tang, B., and K. Emanuel, 2009: Midlevel ventilation's constraint on tropical cyclone intensity. Naval Research Laboratory, Monterey, CA.
- Illari, L., J. Marshall, and B. Tang, 2009: Weather in a tank: Exploiting laboratory experiments in the teaching of meteorology, oceanography, and climate. Unidata Users Workshop, Boulder, CO.

II. *Conferences/Workshops (last 6 years)*

- Tang, B., 2018: Gross moist stability evolution during tropical cyclogenesis. 33rd Conference on Hurricanes and Tropical Meteorology, Ponte Vedra, FL.
- Eck, P., B. Tang, and L. Bosart, 2017: Total lightning and upslope flow as predictors of severe weather in the Northeast. 18th Northeast Regional Operational Workshop, Albany, NY.
- Tang, B., 2017: Gross moist stability evolution during tropical cyclogenesis. 18th Cyclone Workshop, Sainte Adele, QC, Canada.
- Tang, B., 2017: Tropical cyclone spin up dependence on the location of capped surface fluxes. 8th Northeast Tropical Meteorology Workshop, Rensselaerville, NY.
- Tang, B., 2016: A catalogue of extremely damaging hailstorms. 28th Conference on Severe Local Storms, Portland, OR.
- Tang, B., 2016: A coupled moist entropy and angular momentum framework for tropical cyclogenesis investigations. 32nd Conference on Hurricanes and Tropical Meteorology, San Juan, PR.
- Tang, B., J. Alland, R. Rios-Berrios, J. Berman, and K. Corbosiero, 2015: Sensitivity of tropical cyclone spin-up time and size to the initial entropy deficit. 17th Cyclone Workshop, Pacific Grove, CA.
- Tang, B., M. Vaughan, K. Corbosiero, R. Lazear, and L. Bosart, 2015: The 22 May 2014 Duanesburg, New York, tornadic supercell. National Weather Service Binghamton Workshop,

Binghamton, NY.

Tang, B., J. Alland, R. Rios-Berrios, J. Berman, and K. Corbosiero, 2015: Sensitivity of tropical cyclone spin-up time and size to the initial entropy deficit. 7th Northeast Tropical Meteorology Workshop, Dedham, MA.

Tang, B., J. Alland, R. Rios-Berrios, J. Berman, and K. Corbosiero, 2014: Sensitivity of tropical cyclone spin-up time to the initial entropy deficit. 2014 Amer. Geophys. Union Fall Meeting, San Francisco, CA.

Tang, B., M. Vaughan, K. Corbosiero, R. Lazear, and L. Bosart, 2014: An examination of the 22 May 2014 Duanesburg, New York, unexpected tornadic supercell. 15th Northeast Regional Operational Workshop, Albany, NY.

Tang, B., M. Vaughan, K. Corbosiero, R. Lazear, and L. Bosart, 2014: An examination of the 22 May 2014 Duanesburg, New York, unexpected tornadic supercell. 27th Conference on Severe Local Storms, Madison, WI.

Tang, B., and S. Camargo, 2014: Environmental control of tropical cyclones in CMIP5: A ventilation perspective. 31st Conference on Hurricanes and Tropical Meteorology, San Diego, CA.

Tang, B., and R. Rios-Berrios, 2013: Moist diagnostics in the axisymmetric spin up of tropical cyclones. 16th Cyclone Workshop, Sainte Adele, QC, Canada.

Tang, B., 2013: Environmental control of tropical cyclones in GCMs: A ventilation perspective 6th Northeast Tropical Meteorology Workshop, Rensselaerville, NY.

Tang, B., 2013: Global view of the origin of tropical disturbances revisited. 93rd Amer. Meteor. Soc. Annual Meeting, Austin, TX.

Tang, B., 2013: A real-time system for evaluating the ventilation of tropical cyclones. 93rd Amer. Meteor. Soc. Annual Meeting, Austin, TX.

TEACHING

ATM 103, Introduction to Climate Change, Fall 2017 (online)

ATM 316, Dynamic Meteorology I, Fall 2012, 2013, 2015, 2018

ATM 413, Weather, Climate Change, and Societal Impacts, Spring 2013–2018

ATM 622, General Circulation of the Atmosphere, Fall 2014, 2016

GRADUATE STUDENT ADVISEMENT

I. Graduated

Michael Fischer (Ph.D. 2018), Tropical cyclone rapid intensification in environments of upper-tropospheric troughs: Environmental influences and convective characteristics

Pamela Eck (M.S. 2017, co-advised with Dr. Lance Bosart), Evaluation of lightning jumps as a predictor of severe weather in the northeastern United States
Matthew Vaughan (M.S. 2015, co-advised with Dr. Lance Bosart), An analysis of high-impact, low-predictive skill severe weather events in the northeast U.S.

II. Current

Emily Paltz (Ph.D. candidate, co-advised with Dr. Kristen Corbosiero)
Jannetta Richardson (Ph.D. candidate, co-advised with Dr. Ryan Torn)
Joshua Alland (Ph.D. candidate, co-advised with Dr. Kristen Corbosiero)
Casey Peirano (Ph.D. candidate, co-advised with Dr. Kristen Corbosiero)

William Flamholtz (M.S. candidate, co-advised with Dr. Lance Bosart)

SERVICE

I. Department

Lead Volunteer Coordinator, MiSci Science Festival, 11/2017
Member, Undergraduate Program Committee, 9/2013–present
Member, Environmental Science Laboratory Subcommittee, 6/2014–12/2014
Chair, Seminar Coordinator, 8/2013–5/2014
Member, Faculty Search Committee, 11/2013–2/2014

II. University/SUNY

Workshop Leader, NY State Master Teacher Program, 11/2017, 2/2018, and 3/2018
Member, LGBTQ Advisory Committee, 3/2017–present
Member, University Life Council Committee, 5/2016–5/2018
Volunteer, University at Albany Family Earth Day, 5/2014, 5/2015, and 5/2017
Volunteer, LGBTQ Chosen Family Thanksgiving Dinner, 11/2013, 2016, and 2017
Mentor, University in the High School Program, 8/2013–5/2016
Attendee, Lavender Graduation, 5/2013–2018

III. Professional

Rapporteur, 9th International Workshop on Tropical Cyclones: Cyclogenesis Research, 4/2018–present
Working Group Member, 9th International Workshop on Tropical Cyclones: Intensity Change External Influences, 4/2018–present
Associate Editor, Weather and Forecasting, 6/2016–present
Lead Organizer, 8th Northeast Tropical Meteorology Workshop, 6/2017
Judge, Student Poster Awards at the 97th AMS Annual Meeting, 1/2017
Panelist, 16th AMS Student Conference, 1/2017
Judge, Outstanding Student Paper Awards Judge at the 2014 AGU Fall Meeting, 12/2014
Co-Organizer, 6th Northeast Tropical Meteorology Workshop, 5/2013
Judge, Student Poster Awards at the 93rd AMS Annual Meeting, 1/2013

Mentor, Significant Opportunities in Atmospheric Research and Science program at the National Center for Atmospheric Research, 6/2011–8/2012
Chair, Max A. Eaton Prize Committee at the 30th Conference on Hurricanes and Tropical Meteorology, 4/2012

Reviewer of proposals for National Science Foundation, and papers for *Monthly Weather Review*, *Journal of the Atmospheric Sciences*, *Journal of Climate*, *Weather and Forecasting*, *Bulletin of the American Meteorological Society*, *Quarterly Journal of the Royal Meteorological Society*, *Journal of Geophysical Research*, *Geophysical Research Letters*, *Atmospheric Chemistry and Physics*, and *Atmospheric Science Letters*

Expert interviews with *AccuWeather*, *Ars Technica*, *ABC Albany*, *CBS Albany*, *Daily Gazette*, *Five Thirty Eight*, *Global News*, *Syracuse Post-Standard*, *Science News*, *Wall Street Journal*, and *Westchester Magazine*

PROFESSIONAL AFFILIATIONS

American Meteorological Society, 2002–present
American Geophysical Union, 2012–present