

THOMAS M. RICKENBACH

Professor

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Education

Ph.D., Atmospheric Science,
Colorado State University, Ft. Collins, Colorado, USA; 1996.

M. S., Atmospheric Science,
Colorado State University, Ft. Collins, Colorado, USA; 1990.

B. S., Petroleum Engineering,
University of California, Berkeley, California, USA; 1987.

Employment

2020 – present: *Professor, Department of Geography, Planning and Environment, East Carolina University, Greenville, North Carolina, USA.*

2013 – 2020: *Associate Professor, Department of Geography, Planning and Environment, East Carolina University, Greenville, North Carolina, USA.*

2008 – 2013: *Assistant Professor, Department of Geography, East Carolina University, Greenville, North Carolina, USA.*

2007 – 2008: *Teaching Assistant Professor, Department of Geography, East Carolina University, Greenville, North Carolina, USA.*

2004 - 2007: *Assistant Professor, Department of Meteorology, San José State University, San José, California, USA.*

2001 - 2004: *Research Assistant Professor and Affiliate Assistant Professor (Dept. of Geography and Environmental Systems), Joint Center for Earth Systems Technology (JCET), University of Maryland Baltimore County (UMBC) and NASA Goddard Space Flight Center, Mesoscale Processes Branch, Greenbelt, Maryland, USA.*

1998 - 2001: *Assistant Research Scientist, Joint Center for Earth Systems Technology (JCET), University of Maryland Baltimore County (UMBC) and NASA Goddard Space Flight Center, Mesoscale Processes Branch, Greenbelt, Maryland, USA.*

1996 - 1998: *National Research Council Research Fellow, NASA Goddard Space Flight Center, Tropical Rainfall Measuring Mission (TRMM) Office, Greenbelt, Maryland, USA.*

1992 - 1996: *Graduate Research Assistant, Department of Atmospheric Science, Colorado State University, Ft. Collins, Colorado, USA.*

1990 - 1991: *Engineer, Environmental Management Group, Radian Corporation, Irvine, California, USA.*

1988 - 1990: *Graduate Research Assistant, Department of Atmospheric Science, Colorado State University, Ft. Collins, Colorado, USA.*

Research Grants

National Science Foundation (NSF) Climate and Large-Scale Dynamics Program: Mechanisms for the seasonal transition of precipitation organization in the southeastern United States: Current and future climate. R. Nieto-Ferreira and T. M. Rickenbach (co-P.I.s), FY 17-19 (\$446,104).

National Science Foundation (NSF) Physical and Dynamic Meteorology Program: Development of a climatology of precipitation system organization in North Carolina to improve climate precipitation forecasts. T. M. Rickenbach and R. Nieto-Ferreira (co-P.I.s). FY 12-14 (\$314,000).

National Oceanic and Atmospheric Administration (NOAA) Climate and Global Change Program's Climate Prediction Program for the Americas (CPPA): Onset of the South American Monsoon: Mechanisms and Predictability. T. M. Rickenbach and R. Nieto-Ferreira (co-P.I.s). FY 07-10 (\$276,000).

National Aeronautics and Space Administration (NASA) NRA-01-OES-02 (CRYSTAL-FACE): Augmenting CRYSTAL radar observations of precipitation with the NWS WSR 88-D radar network. David O'C. Starr (P.I.), T. Rickenbach (co-I), L. Carey (co-I), FY 02-03 (\$171,500).

National Aeronautics and Space Administration (NASA) NRA-99-OES-03 (TRMM Science): Climatology and evolution of convective systems combining surface radar and geostationary infrared satellite data during the TRMM field campaigns. T. M. Rickenbach (P.I.). FY 00-01-02 (\$219,000).

National Aeronautics and Space Administration (NASA) NRA-98-MTPE-01 (LBA): Role of land-surface processes and regional and global interactions in the seasonal to interannual variability of the atmosphere in the Amazon region. R. N. Ferreira (P.I.), M. Suarez (co-P.I.), R. Koster (co-P.I.), T. Rickenbach (Co-P.I.). FY 99-00-01 (\$200,000).

Teaching

Course Portfolio

Weather and Climate (general education natural science)
Climate Change: Science and Society (general education social science)
Physical Meteorology
Radar and Satellite Meteorology
Tropical Meteorology
Global Climate Change
Aviation Weather

Professional Activities

*Guest Editor, special issue in the journal *Atmosphere*, on radar and satellite observations of precipitation systems focusing on climate applications. (2017-2018).*

Associate Editor, Journal of Applied Meteorology and Climatology (2011-2014)

Member, American Meteorological Society Science and Technical Advisory Committee on Radar Meteorology (2013-2016).

Member, American Meteorological Society (AMS).

Member, American Geophysical Union (AGU)

Member, American Association for the Advancement of Science (AAAS)

Reviewer of scientific manuscripts: Journal of the Atmospheric Sciences, Journal of Applied Meteorology, Monthly Weather Review, Journal of Applied Meteorology and Climatology, Journal of Geophysical Research, Bulletin of the American Meteorological Society, Brazilian Journal of Meteorology (Revista Brasileira de Meteorologia-RBMet), Nature, Meteorological Applications, Geophysical Research Letters. Water Management (Journal of the Institution of Civil Engineers, UK), Quarterly Journal of the Royal Meteorological Society, Journal of Hydrometeorology, Atmospheric Research, Journal of Flood Risk Management.

Reviewer, research proposals for NASA, NOAA, NSF, and DOE.

Director of Undergraduate Studies, Department of Geography, Planning and Environment, East Carolina University. (2016-2020).

Honors

East Carolina University *Scholar-Teacher Award*, for the integration of scholarship and instruction, Spring 2018.

BB&T *Active Learning and Leadership Development Award*, East Carolina University Office for Faculty Excellence, Spring 2015.

East Carolina University Thomas Harriot College of Arts and Sciences *College Research Award*, 2011.

California State University (CSU) *Junior Faculty Career Development Award*, 2007.

San Jose State University *Greek Community Recognition in Teaching Award*, 2006.

NASA *Group Achievement Award*, CRYSTAL-FACE Science Team, 2003.

National Research Council Research Fellowship, NASA Goddard Space Flight Center, Tropical Rainfall Measuring Mission (TRMM) Office, Greenbelt, Maryland., 1996-1998.

Language Skills

English, Portuguese

Outreach

Media appearances on television, newspaper and radio discussing climate science, weather phenomena, and natural events, 2005-present. Examples may be viewed at <http://blog.ecu.edu/sites/rickenbacht/outreach/>

Op-Ed piece, Daily Reflector, ‘Shore Up Our Coastal Cities’, on the aftermath of Hurricane Harvey in Houston. Published 6 September 2017.
http://myweb.ecu.edu/rickenbacht/oped_reflector_paper2.JPG

Invited speaker, Foreign Policy Association's Great Decisions Program event on climate change, hosted by ECU Continuing Professional Education, Feb. 20, 2016.

Climate Science Congressional Visits Day (CVD) on Capitol Hill – selected as part of a small team of climate scientists and American Meteorological Society policy staff to interact with Congressional staff and committee members in the U.S. Senate and House of Representatives on climate change science. Washington DC, Feb. 10-11, 2015, and Feb 9-10 2016.

Op-Ed piece, Raleigh News & Observer, ‘Scientific Expansion, Spiritual Perspectives’, on discovery of liquid water on Mars, Published 30 Sept. 2015.
http://myweb.ecu.edu/rickenbacht/oped_mars_rickenbach.pdf

Op-Ed piece, Raleigh News & Observer and Daily Reflector (Greenville, NC), ‘Global Warming and the Limits of Theory’, on prediction of future climate change. Published 13 Dec. 2009.
http://myweb.ecu.edu/rickenbacht/oped_climate_rickenbach.pdf

Peer-Reviewed Publications

Ferreira, R. and Rickenbach, T., Mechanisms for springtime onset of isolated precipitation across the Southeastern United States. *Atmosphere*, 12, 213.
<https://doi.org/10.3390/atmos12020213>, 2021.

Nieto-Ferreira, R. and Rickenbach, T., Effects of the North Atlantic Subtropical High on summertime precipitation organization in the southeast United States. *International Journal of Climatology*, 1-15. <https://doi.org/10.1002/joc.6561>, 2020.

Rickenbach, T., R. Nieto-Ferreira, and H. Wells, Springtime onset of isolated convection precipitation across the southeastern United States: Framework and regional evolution. *Monthly Weather Review*, 148(3), 891-906, <https://doi.org/10.1175/MWR-D-19-0279.1> 2020.

Rickenbach, T., The Flying Trapeze, *Bulletin of the American Meteorological Society*, 100 (4), 692-698, <https://doi.org/10.1175/BAMS-D-18-0171.1> , 2019.

Nieto-Ferreira, R., Nissenbaum, M. and Rickenbach, T., Climate change effects on precipitation organization in the Southeast United States. *Atmospheric Research*, (214), 348-363, <https://doi.org/10.1016/j.atmosres.2018.08.012> , 2018.

Rickenbach, T., Seasonal changes of extremes in isolated and mesoscale precipitation for the southeastern United States. *Atmosphere*, 9(8), 309, <https://doi.org/10.3390/atmos9080309> , 2018.

Phan, M., Montz, B., Curtis, S., and Rickenbach, T., Weather on the Go: An assessment of smartphone mobile weather applications use among college students. *Bulletin of the American Meteorological Society*, 2245-2257, <https://doi.org/10.1175/BAMS-D-18-0020.1>, 2018.

- Luchetti, N., R. Nieto-Ferreira, T. Rickenbach, M. Nissenbaum, and J. McAuliffe, Influence of the North Atlantic subtropical high on wet and dry sea-breeze events in North Carolina, United States. *Investigaciones Geográficas* (68), 9-25, [https:// doi.org/10.14198/INGEO2017.68.01](https://doi.org/10.14198/INGEO2017.68.01) 2017.
- Johnson, R., P. Ciesielski, and T. Rickenbach, A further look at Q1 and Q2 from TOGA COARE. Multiscale convection-coupled systems in the Tropics: A tribute to Dr. Michio Yanai. *American Meteorological Society - Meteorological Monographs*, 56, Ch. 1. DOI: <http://dx.doi.org/10.1175/AMSMONOGRAPHS-D-15-0002.1> , 2016.
- Rickenbach, T. M., R. Nieto-Ferreira, C. Zarzar, and B. Nelson, A seasonal and diurnal climatology of precipitation organization in the southeastern United States. *Quarterly Journal of the Royal Meteorological Society*, 141, pgs. 1938-1956, doi:10.1002/qj.2500, 2015.
- Nieto-Ferreira, R., L. Hall, and T. Rickenbach, A climatology of the structure, evolution, and propagation of midlatitude cyclones in the southeast United States. *J. Climate*, **26**, 8406–8421. doi: <http://dx.doi.org/10.1175/JCLI-D-12-00657.1>, 2013.
- Rickenbach, T. M., R. Nieto-Ferreira, R. Barnhill, and S. Nesbitt, Seasonal and regional differences in the rainfall and intensity of isolated convection over South America. *International Journal of Climatology*, 33, 2002-2007, 2013.
- Rickenbach, T. M., The 16 April 2011 EF3 tornado in Greene County, eastern North Carolina. *Southeastern Geographer*, **52**, 183-211, 10.1353/sgo.2012.0014, 2012.
- Rickenbach, T. M., R. Nieto-Ferreira, R. Barnhill, and S. Nesbitt, Regional contrast of mesoscale convective system structure prior to and during monsoon onset across South America. *Journal of Climate*, **24**, 3753-3763, 2011.
- Nieto-Ferreira, T. M. Rickenbach, and E. Wright, The role of cold fronts in the onset of the South American monsoon. *Quarterly Journal of the Royal Meteorological Society*, 137, 908-922, doi: 10.1002/qj.810, 2011.
- Nieto-Ferreira, R. and T. M. Rickenbach, Regionality of monsoon onset in South America: A three-stage conceptual model. *International Journal of Climatology*, 31, 1309-1321, doi:10.1002/joc.2161, 2011.
- Rickenbach, T., R. Nieto-Ferreira, J. Rickenbach, and E. Wright: Monsoon in the Americas: Opportunities and challenges. *Geography Compass*, 3, 1-16, doi:10.1111/j.1749-8198.2009.00266.x, 2009.

- Nieto-Ferreira, R., T. Rickenbach, N. Guy, and E. Williams: Radar observations of convective system variability and interaction with African easterly waves during the 2006 AMMA IOP. *Monthly Weather Review*, 137, 4136-4150, 2009.
- Rickenbach, T., R. Nieto-Ferreira, N. Guy, and E. Williams: Radar-observed squall line propagation and the diurnal cycle of convection in Niamey, Niger during the 2006 African Monsoon Multidisciplinary Analyses Intensive Observing Period. *Journal of Geophysical Research*, 114, D03107, doi:10.1029/2008JD010871, 2009.
- Rickenbach, T. M., P. Kucera, M. Gentry, L. Carey, A. Lare, R. F. Lin, , B. Demoz, and D. Starr, Relationship between anvil clouds and convective cells: A case study in South Florida during CRYSTAL-FACE, *Mon. Wea. Rev.*, 136, 3917-3932, 2008.
- Haertel, P. T., G. Kiladis, A. Denno, and T. Rickenbach, Vertical mode decompositions of 2-day waves and the Madden Julian Oscillation. *J. Atmos. Sci.*, 65, 813-833, 2008.
- Rickenbach, T. M., Nocturnal cloud systems and the diurnal variation of clouds and rainfall in southwestern Amazonia. *Mon. Wea. Rev.*, 132, 1201-1219, 2004.
- Nieto-Ferreira, R., T. Rickenbach, D. L. Herdies, and L. M. V. Carvalho, Variability of South American convective cloud systems and tropospheric circulation during January-March 1998 and 1999. *Mon. Wea. Rev.*, 131, 961-973, 2003.
- Rickenbach, T. M., R. Nieto-Ferreira, J. Halverson, D. L. Herdies, and M. A. F. Silva Dias, Modulation of convection in the southwestern Amazon Basin by extratropical stationary fronts. *J. Geophys. Res.*, 107(D20), 8040, doi:10.1029/2000JD000263, 2002.
- Williams, E., N. Madden, D. Rosenfeld, J. Gerlach, L. Atkinson, N. Dunnemann, G. Frostrom, N. Gears, M. Antonio, B. Biazon, R. Camargo, H. Franoa, A. Gomes, M. Lima, R. Machado, S. Manhaes, L. Nachtigall, H. Piva, W. Quintiliano, L. Machado, P. Artaxo, G. Roberts, N. Renno, R. Blakeslee, J. Bailey, D. Boccippio, A. Betts, D. Wolff, B. Roy, J. Halverson, T. Rickenbach, J. Fuentes, and E. Avelino, Contrasting convective regimes over the Amazon: Implications for cloud electrification. *J. Geophys. Res.*, 107 (D20), doi:10.1029/2001JD000380, 2002.
- Halverson, J. B., T. Rickenbach, B. Roy, H. Pierce, and E. Williams, Environmental characteristics of convective systems during TRMM-LBA. *Mon. Wea. Rev.*, 130, 1493-1509, 2002.
- Lau, K. M., Y. Ding, J. T. Wang, R. Johnson, T. Keenan, R. Cifelli, J. Gerlach, O. Thiele, T. Rickenbach, S. C. Tsay, and P.H. Lin, A report of the field operations and early results of the South China Sea Monsoon Experiment (SCSMEX). *Bull. Am. Met. Soc.*, 81, 1261-1270, 2000.

- Halverson, J. B., B. S. Ferrier, T. M. Rickenbach, J. Simpson, and W.-K. Tao, An ensemble of convective systems on February 11, 1993 during TOGA COARE: Morphology, rainfall characteristics and anvil cloud interactions. *Mon. Wea. Rev.*, **127**, 1208-1228, 1999.
- Johnson, R. H., T. M. Rickenbach, S. A. Rutledge, P. E. Ciesielski, and W. H. Schubert, Trimodal characteristics of tropical convection. *J. Climate*, **12**, 2397-2418, 1999.
- Rickenbach, T. M., Cloud top evolution of tropical oceanic squall lines from radar reflectivity and infrared satellite data. *Mon. Wea. Rev.*, **127**, 2951-2976, 1999.
- Rickenbach, T. M. and S. A. Rutledge, Convection in TOGA COARE: Horizontal scale, morphology, and rainfall production. *J. Atmos. Sci.*, **55**, 2715-2729, 1998.
- Williams, E. R., S. G. Geotis, N. Renno, S. A. Rutledge, E. Rasmussen, and T. Rickenbach, A radar and electrical study of tropical "hot towers". *J. Atmos. Sci.*, **49**, 1386-1395, 1992.

Conference Presentations

- Rickenbach, T. M., R. Nieto-Ferreira and H. Wells: Springtime onset of isolated convection across the southeastern United States: Insights using a monsoon framework. 33rd Conference on Climate Variability and Change, American Meteorological Society Annual Meeting, Boston, MA, 12-16 January 2020.
- Nieto-Ferreira, R. and T. M. Rickenbach: Effects of the North Atlantic Subtropical High on summertime precipitation organization in the southeast United States. Wayne Schubert Symposium, American Meteorological Society Annual Meeting, Boston, MA, 12-16 January 2020.
- Rickenbach, T. M., R. Nieto-Ferreira, and C. Jarrett: Role of the North Atlantic Subtropical High and midlatitude circulations in the springtime onset of isolated convection across the southeastern United States. Wayne Schubert Symposium, American Meteorological Society Annual Meeting, Boston, MA, 12-16 January 2020.
- Jarrett, C., T. M. Rickenbach and B. R. Nelson: Springtime onset of isolated convection in the southeastern United States: Initial results from a 10-year radar analysis. 19th annual Student Conference, American Meteorological Society Annual Meeting, Boston, MA, 12-16 January 2020.

- Brown, M., R. Nieto-Ferreira and T. Rickenbach: WRF simulations of the onset of the 2009 convective season in the southeastern United States. (Best student presentation award), American Meteorological Society Annual Meeting, Phoenix, AZ, 6-10 January 2019.
- Rickenbach, T., R. Nieto-Ferreira and H. Wells: Transition to the summer convective season in the southeastern United States. 31st Conference on Climate Variability and Change, American Meteorological Society Annual Meeting, Austin, TX, 7-11 January 2018.
- Brown, M., R. Nieto-Ferreira, T. Rickenbach and M. Nissenbaum: Visualizing the seasonal shift of isolated precipitation features in the southeastern United States. 17th Annual AMS Student Conference, American Meteorological Society 98th Annual Meeting, Austin, TX, 7-11 January 2018.
- Wells, H., T. Rickenbach and R. Nieto-Ferreira: Dynamic and thermodynamic mechanisms for the onset of the southeastern U.S. convective season. 17th Annual AMS Student Conference, American Meteorological Society 98th Annual Meeting, Austin, TX, 7-11 January 2018.
- Rickenbach, T. Daily precipitation extremes in isolated and mesoscale precipitation for the southeastern United States. In Proceedings of the 1st Int. Electron. Conf. Hydrol. Cycle, 12–16 November 2017; Sciforum Electronic Conference Series, Vol. 1, 2017 ; doi:10.3390/CHyCle-2017-04842, 12-16 November 2017.
- Rickenbach, T., R. Nieto-Ferreira, and M. Nissenbaum: Warm-season precipitation organization in the southeast United States: Current and future climate. Robert A. Houze, Jr. Symposium, American Meteorological Society 97th Annual Meeting, Seattle WA, 23-27 January 2017.
- Golden, N. and T. Rickenbach: Mechanisms for the summertime precipitation minimum off the Georgia and Carolina coasts. 16th Annual AMS Student Conference, American Meteorological Society 97th Annual Meeting, Seattle WA, 23-27 January 2017.
- Phan, M. D., B. Montz, T. Rickenbach, and S. Curtis: Weather on the go: An assessment of smartphone mobile weather application use among college students. 12th Symposium on Societal Applications: Policy, Research and Practice, American Meteorological Society 97th Annual Meeting, Seattle WA, 23-27 January 2017.
- Rickenbach, T., R. Ferreira and M. Nissenbaum: Diurnal variation of isolated convection over land and ocean in the southeastern United States: A case study. 28th Conference on Climate Variability and Change, American Meteorological Society Annual Meeting, New Orleans, Louisiana, 11-15 January 2016.

- Nissenbaum, M., R. Ferreira, and T. Rickenbach: Case studies of the impacts of climate change on precipitation organization in the southeastern U.S. 28th Conference on Climate Variability and Change, American Meteorological Society Annual Meeting, New Orleans, Louisiana, 11-15 January 2016.
- Nissenbaum, M. R., R. Nieto-Ferreira, and T. M. Rickenbach: Precipitation Organization in a Warmer Climate, 70th Annual SouthEastern Division of the Association of American Geographers (SEDAAG) Conference, Pensacola, FL, November 2015.
- Nissenbaum, M. R., R. Nieto-Ferreira, and T. M. Rickenbach: Precipitation Organization in a Warmer Climate, North Carolina Space Grant Symposium, High Point, NC, November 2015.
- Nissenbaum, M., R. Nieto-Ferreira and T. Rickenbach: Precipitation organization in a warmer climate. 27th Conference on Climate Variability and Change, American Meteorological Society Annual Meeting, Phoenix, Arizona, 5-9 January 2015.
- Rickenbach, T., C. Zarzar, and R. Nieto-Ferreira: Impact of precipitation organization on river discharge across North Carolina. American Geophysical Union Fall Meeting, San Francisco, California, 15-19 December 2014.
- Nieto-Ferreira, R., M. Nissenbaum, and T. Rickenbach: Precipitation organization in a warmer climate. American Geophysical Union Fall Meeting, San Francisco, California, 15-19 December 2014.
- Rickenbach, T., R. Nieto-Ferreira, C. Zarzar, and B. Nelson: A five-year climatology of precipitation organization in the southeastern U.S.: Seasonal cycle and extreme events. 26th Conference on Climate Variability and Change, American Meteorological Society Annual Meeting, Atlanta, Georgia, 3-7 February 2014.
- Zarzar, C., T. Rickenbach, R. Nieto-Ferreira, and B. Nelson: A GIS-based analysis of precipitation organization, topography, and land use in North Carolina using the Multi-Sensor Precipitation Estimation (MPE) product. 28th Conference on Hydrology, American Meteorological Society Annual Meeting, Atlanta, Georgia, 3-7 February 2014.
- Zarzar, C., T. Rickenbach, and R. Nieto-Ferreira, Development and spatial analysis of a precipitation organization climatology for North Carolina. National Weather Association 38th Annual Meeting, Charleston, South Carolina, October 2013.
- Rickenbach, T., C. Zarzar, R. Nieto-Ferreira, and B. Nelson, A five-year climatology of precipitation organization in the southeastern U.S.: Initial results. American Meteorological Society 36th Conference on Radar Meteorology, Breckenridge, Colorado, September 2013.

- Nieto-Ferreira, R., L. Hall, and T. Rickenbach, A climatology of the structure, frequency and propagation of midlatitude cyclones that affect North Carolina. American Meteorological Society 93rd Annual Meeting, Austin, TX, January 2013.
- Rickenbach, T., Nieto-Ferreira, R., S. Stevens, B. Nelson, and B. Blanton, Building a climatology of precipitating system organization in the Carolinas using the NOAA radar-based Multi-Sensor Precipitation Estimate (MPE) product. American Meteorological Society 93rd Annual Meeting, Austin, TX, January 2013.
- Rickenbach, T., The 16 April 2011 EF3 tornado in Greene and Pitt Counties, Eastern North Carolina. American Meteorological Society 92nd Annual Meeting, New Orleans, LA, January 2012.
- Nieto-Ferreira, R. and T. Rickenbach, Climatology of precipitation system organization in North Carolina: Methodology and early results. American Meteorological Society 92nd Annual Meeting, New Orleans, LA, January 2012.
- Rickenbach, T., R. Nieto-Ferreira, L. Hall, B. Nelson, S. Ansari and S. Del Greco, Constructing a climatology of precipitation system organization in North Carolina. American Geophysical Union Fall Meeting, San Francisco, CA, December 2011.
- Prat, Olivier, B. Nelson, and T. Rickenbach, A multi-sensor approach to access precipitation patterns and hydro-climatic extremes in the southeastern United States. American Geophysical Union, Fall Meeting, Abstract H23K-03, San Francisco, California, 2010.
- Rickenbach, T., R. Nieto-Ferreira, R. Barnhill, and S. Nesbitt, Evolution of regional differences in precipitation system intensity prior to and during South American monsoon onset. EOS Transactions, American Geophysical Union, 91(26), Meeting of the Americas Supplement, Abstract A33D-07, Foz do Iguacu, Brazil, 2010.
- Nieto-Ferreira, R. and T. Rickenbach, The role of cold fronts in the onset of the South Atlantic Convergence Zone. EOS Transactions, American Geophysical Union, 91(26), Meeting of the Americas Supplement, Abstract A34B-03, Foz do Iguacu, Brazil, 2010.
- Barnhill, R., T. Rickenbach, R. Nieto-Ferreira, E. Wright, and S. Nesbitt, Regional variation of convective structure at monsoon onset across South America inferred from TRMM observations. American Meteorological Society (AMS) 22nd Conference on Climate Variability and Change, Atlanta, GA, 18-22 January 2010.
- Wright, E., R. Nieto-Ferreira, T. Rickenbach, and R. Barnhill, Effects of cold fronts on the onset of the South American Monsoon. American Meteorological Society (AMS) 22nd Conference on Climate Variability and Change, Atlanta, GA, 18-22 January 2010.

Nieto-Ferreira, R. and T. Rickenbach, A three-stage conceptual model for South America monsoon onset. American Meteorological Society (AMS) 22nd Conference on Climate Variability and Change, Atlanta, GA, 18-22 January 2010.

Barnhill, R., T. Rickenbach, R. Nieto-Ferreira, S. Nesbitt, and E. Wright, Regional variation of convective structure at monsoon onset across South America inferred from TRMM observations. Southeastern Division of the Association of American Geographers (SEDAAG) 64th Annual Meeting, Knoxville, Tennessee, November 2009.

Wright, E., R. Nieto-Ferreira, T. Rickenbach, and R. Barnhill, Effects of cold air intrusions on the onset of the South American monsoon. Southeastern Division of the Association of American Geographers (SEDAAG) 64th Annual Meeting, Knoxville, Tennessee, November 2009.

Rickenbach, T., Toward a climatology of convective mesoscale organization in the Carolinas, NOAA National Weather Service Carolinas and Virginia Climate Conference, Wilmington, NC, October 2009.

Barnhill, R., T. Rickenbach, R. Nieto-Ferreira, S. Nesbitt, and E. Wright, Regional variation of convective structure at monsoon onset across South America inferred from TRMM observations, American Meteorological Society (AMS) 34th Conference on Radar Meteorology, Williamsburg, Virginia, October 2009.

Rickenbach, T., R. Nieto-Ferreira, N. Guy, and E. Williams, Radar-observed squall line propagation and the diurnal cycle of convection in Niamey, Niger during the 2006 AMMA IOP, 3rd International African Monsoon Multidisciplinary Analysis (AMMA) Conference, Ouagadougou, Burkina Faso, West Africa, July 2009.

Guy, N., R. Cifelli, S. Rutledge, W-K Tao, T. Lang, and T. Rickenbach, Multi-platform observational analysis of the 2006 West African monsoon on a regional scale, 3rd International African Monsoon Multidisciplinary Analysis (AMMA) Conference, Ouagadougou, Burkina Faso, West Africa, July 2009.

Nieto-Ferreira, R., T. Rickenbach, E. Williams, and N. Guy, Radar observations of convective system variability in relationship to African easterly waves during the 2006 AMMA SOP, 3rd International African Monsoon Multidisciplinary Analysis (AMMA) Conference, Ouagadougou, Burkina Faso, West Africa, July 2009.

Rickenbach, T. M., R. Nieto-Ferreira, S. Nesbitt, and D. Herdies, Mechanisms for temporal and spatial variations of South America Monsoon onset gleaned from TRMM observations of convective structure, American Meteorological Society (AMS) 21st Conference on Climate Variability and Change, Phoenix, Arizona, January 2009.

Nieto-Ferreira, R., T. M. Rickenbach, N. Guy, and E. Williams, Radar observations of convective system variability and interaction with African easterly waves in the West

African Sahel region, American Meteorological Society (AMS) 21st Conference on Climate Variability and Change, Phoenix, Arizona, January 2009.

Nieto-Ferreira, R., and T. M. Rickenbach, Rainfall organization in the African Sahel: Humble beginnings of most Atlantic Ocean hurricanes, Southeastern Division of the American Association of Geographers (SEDAAG) 63rd Annual Meeting, Greensboro, North Carolina, November 2008.

Rickenbach, T., R. Nieto-Ferreira and R. Barnhill. Interannual and regional variations of South America monsoon onset: Insights from satellite observations of precipitation and convective structure. NOAA Climate Prediction Program for the Americas (CPPA) Principal Investigator's Meeting, Silver Spring, Maryland, September 2008.

Rickenbach, T., R. Nieto-Ferreira, D. Herdies, and S. Nesbitt, Regional differences in South American Monsoon onset: Implications for onset predictability, American Meteorological Society 28th Conference on Hurricanes and Tropical Meteorology, Orlando, Florida, April 2008.

Nieto-Ferreira, R., T. Rickenbach, N. Guy and E. Williams, MIT radar observations of the evolution of the West African Monsoon during the AMMA IOP, American Meteorological Society (AMS) 28th Conference on Hurricanes and Tropical Meteorology, Orlando, Florida, April 2008.

Nieto-Ferreira, R., T. Rickenbach, N. Guy, and E. Williams, Evolution of the African Monsoon during 2006. 6th Climate Prediction Applications Science Workshop, University of North Carolina, Chapel Hill, North Carolina, March 2008.

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