

Janice L. Bytheway

525 W 3rd St
Loveland, CO 80537
C: 724-880-7310
W: 303-497-5870
JLBytheway@gmail.com

Education

Ph.D. Atmospheric Science, Colorado State University, 2017
Colorado State University, Fort Collins, CO
Thesis: “Features Based Assessments of Warm Season Convective Precipitation
Forecasts from the High Resolution Rapid Refresh Model”

M.S. Atmospheric Science, 2008
Colorado State University, Fort Collins, CO
Thesis: “A Physically Based Screen for Precipitation over Complex Surfaces
Using Passive Microwave Observations”

B.S. Earth Science, 2005
California University of Pennsylvania, California, PA
Concentration: Operational Meteorology
Minor: Mathematics
Honors Thesis: “The Bytheway Method for Optimal Radar Beam Scheduling in
the CASA IP1a Testbed”

Professional Experience

Cooperative Institute for Research in Environmental Sciences
University of Colorado, Boulder, CO
Research Scientist II 2020 - Present
Research Scientist I 2017 - 2020

Department of Atmospheric Science
Colorado State University, Fort Collins, CO
Graduate Research Assistant 2013 - 2017
Teaching Assistant: ATS622: Atmospheric Radiation Spring 2016
Research Associate 2008 - 2012
Graduate Research Assistant 2005 - 2008
Teaching Assistant: ATS350 Introduction to Weather and Climate Spring 2007

Science and Technology Corporation
METSAT Division, Fort Collins, CO
Atmospheric Scientist

2008 - 2012

Colorado Climate Center, Fort Collins Weather Station
Colorado State University, Fort Collins, CO
Weather Observer

2006 - 2016

Relevant Skills

Programming in Fortran, IDL and Python
Processing data in a variety of formats (GRIB, HDF-EOS, Net-CDF)
Accessing and using NOAA High Performance Computing Systems
Using Microsoft Office Suite
Using Windows, Mac, and Linux operating systems
Collecting and recording atmospheric measurements
Assisting in the mentoring of undergraduate research interns
Presenting scientific information in written and oral formats

Publications

Bytheway, J. L., M. Hughes, K. Mahoney, R. Cifelli, and J. M. English, 2021: Demonstrating a probabilistic quantitative precipitation estimate for evaluating precipitation forecasts in complex terrain. *Wea. Forecasting*, In press. doi:10.1175/WAF-D-21-0074.1.

English, J. M., D. D. Turner, T. I. Alcott, W. R. Moninger, **J. L. Bytheway**, R. Cifelli, and M. Marquis, 2020: Evaluating operational and experimental HRRR model forecasts of atmospheric river events in California. *Wea. Forecasting*, 36, 1925-1944, doi:10.1175/WAF-D-21-0081.1.

Bytheway, J. L., M. Hughes, K. Mahoney, and R. Cifelli, 2020: On the uncertainty of high resolution hourly quantitative precipitation estimates in California. *J. Hydrometeor.*, 21, 865-879, doi:10.1175/JHM-D-19-0160.1.

Bytheway, J. L., M. Hughes, K. Mahoney, and R. Cifelli, 2019: A multiscale evaluation of multisensor quantitative precipitation estimates in the Russian River Basin. *J. Hydrometeor.*, 20, 447-466, doi:10.1175/JHM-D-18-0142.1.

Bytheway, J. L., and C. D. Kummerow, 2018: Consistency between convection allowing model output and passive microwave satellite observations. *J. Geophys. Res.*, 123, doi:10.1002/2017JD027527.

Zhang, Y., M. Pan, J. Sheffield, A. L. Siemann, C. K. Fisher, M. Liang, H. E. Beck, N. Wanders, R. F. MacCracken, P. R. Houser, T. Zhou, D. P. Lettenmaier, R. T. Pinker, **J. Bytheway**, C. D. Kummerow, and E. F. Wood, 2018: A Climate Data Record (CDR) for

the global terrestrial water budget: 1984–2010, *Hydrol. Earth Syst. Sci.*, **22**, 241-263, doi:10.5194/hess-22-241-2018.

Bytheway, J. L., C. D. Kummerow, and C. Alexander, 2017: A Features-based assessment of the evolution of warm season precipitation forecasts from the HRRR model over three years of development. *Weather and Forecasting*, **32**, 1841-1856, doi:10.1175/WAF-D-17-0050.1.

Bytheway, J. L., and C. D. Kummerow, 2015: Toward an object-based assessment of high-resolution forecasts of long-lived convective precipitation in the central US. *J. Adv. Model. Earth Syst.*, **07**, 1248-1264, doi:10.1002/2015MS000497-T

Bytheway, J. L., and C. D. Kummerow, 2013: Inferring the uncertainty of satellite precipitation estimates in data-sparse regions over land. *J. Geophys. Res.*, **118**, 9524–9533, doi:10.1002/jgrd.50607.

Vonder Haar, T. H., **J. L. Bytheway**, and J. M. Forsythe, 2012: Weather and climate analyses using improved global water vapor observations. *Geophys. Res. Lett.*, **39**, L15802, doi:10.1029/2012GL052094.

Bytheway, J. L., and C. D. Kummerow, 2010: A physically based screen for precipitation over complex surfaces using passive microwave observations, *IEEE Trans. Geosci. Remote Sens.*, **48**, 299-313, doi:10.1109/TGRS.2009.2027434

Conference Presentations

Bytheway, J. L., D. D. Turner, and R. Cifelli, 2021: Evaluating QPE/QPF skill with observed and simulated passive microwave brightness temperatures in a radiative closure exercise (poster). Presented at 2021 Annual Meeting of the American Meteorological Society, Virtual, January 10-15.

Bytheway, J. L., M. Anderson, R. Cifelli, K. Mahoney, and M. Hughes, 2020: Evaluating hydrologic model forcings for use in reservoir operations planning. Presented at 2020 Annual Meeting of the American Meteorological Society, Boston, MA, January 12-16.

Bytheway, J. L., M. Hughes, K. Mahoney, and R. Cifelli, 2019: Evaluating quantitative precipitation estimate uncertainty in complex terrain for use in quantitative precipitation forecast validation (poster). Presented at 2019 Fall Meeting of the American Geophysical Union, San Francisco, CA, December 9-13.

Bytheway, J. L., M. Hughes, K. Mahoney, and R. Cifelli, 2019: Evaluating quantitative precipitation estimate uncertainty in complex terrain for use in quantitative precipitation forecast validation. Presented at 2019 European Meteorological Society Annual Meeting, Copenhagen, Denmark, September 9-13.

Bytheway, J. L., K. Mahoney, M. Hughes, and R. Cifelli, 2018: Successes and failures of deterministic precipitation forecasts leading up to the 2017 Oroville Dam Crisis (poster). Presented at 2018 Fall Meeting of the American Geophysical Union, Washington, DC, December 10-14.

Bytheway, J. L., S. Biswas, R. Cifelli, and M. Hughes, 2017: The relative performance of high resolution quantitative precipitation estimates in the Russian River Basin (poster). Presented at 2017 Fall Meeting of the American Geophysical Union, New Orleans, LA, December 11-15.

Bytheway, J. L., and C. D. Kummerow, 2017: Evolution of HRRR warm season convective precipitation forecasts over three years of model development (poster). Presented at 2017 Annual Meeting of the American Meteorological Society, Seattle, WA, January 22-26.

Bytheway, J. L., 2016: American Meteorological Society: Connecting students at all levels with atmospheric science professionals. Invited presentation to visiting delegation from Chengdu University of Information Technology. Fort Collins, CO, August 1.

Bytheway, J. L., and C. D. Kummerow, 2015: An object-based assessment of the High Resolution Rapid Refresh Model over the western US. Abstract A21E-0193 presented at 2015 Fall Meeting of the American Geophysical Union, San Francisco, CA, December 14-18.

Bytheway, J. L. 2015: The data doesn't lie: Lessons from the creation of the NASA water vapor project dataset. Invited presentation to California University of Pennsylvania Earth Science Department, California, PA, October 23.

Bytheway, J. L., and C. D. Kummerow, 2015: Towards an object-oriented validation system for high-resolution NWP models. Invited presentation to National Center for Atmospheric Research (NCAR) Model Evaluation Toolkit (MET) group, January 14.

Bytheway, J. L., and C. D. Kummerow, 2014: Towards an object-oriented validation system for high-resolution NWP models. 7th Workshop of the International Precipitation Working Group (IPWG). Tsukuba, Japan, November 17-21.

Bytheway, J. L., and C. D. Kummerow, 2013: Inferring the Temporal Sampling Uncertainty of Overland Satellite Precipitation Estimates in Data-Sparse Regions. 27th AMS Conference on Hydrology. Austin, TX, January 5-10.

Bytheway, J. L., T. H. Vonder Haar, and J. M. Forsythe, 2013: Global and Regional Water Vapor Variability from the New NASA Water Vapor Project-MEaSURES (NVAP-M) Dataset. 25th AMS Conference on Climate Variability and Change. Austin, TX, January 5-10.

Bytheway, J. L., J. M. Forsythe, and T. H. Vonder Haar, 2012: Construction of the New NASA Water Vapor Project –MEaSUREs (NVAP-M) Global Water Vapor Dataset. 18th AMS Conference on Satellite Meteorology, Oceanography and Climatology/First Joint AMS-Asia Satellite Meteorology Conference. New Orleans, LA, January 23-27.

Bytheway, J. L., T. H. Vonder Haar, and J. M. Forsythe, 2012: The New NVAP-M (NASA water vapor project – MEaSUREs) Global water vapor dataset. 24th AMS Conference on Climate Variability and Change. New Orleans, LA, January 23 – 27.

Bytheway, J. L., J. M. Forsythe, and T. H. Vonder Haar, 2011: Construction and validation of the new NASA Water Vapor Project-MEaSUREs (NVAP-M) global water vapor dataset (poster). Proc. WCRP Open Science Conference, Denver, CO, October 24-28.

Vonder Haar, T. H., J. L. Bytheway, and J. M. Forsythe, 2011: The new NVAP-M (NASA Water Vapor Project-MEaSUREs) global water vapor dataset (poster). Proc. WCRP Open Science Conference, Denver, CO, October 24-28.

Bytheway, J. L., C. D. Kummerow, T. H. Vonder Haar and J. Forsythe, 2011: The NASA NVAP-MEaSUREs 1987-2010 Global Water Vapor Data Set: Design Approach and Heritage Science. GEWEX/ESA DUE GlobVapour Workshop on Long Term Water Vapour Data Sets and Their Quality Assessment. Frascati, Italy, March 8-10.

Bytheway, J. L., J. M. Forsythe, and T. H. Vonder Haar, 2010: Integrating past and present: Satellite observations and the NVAP-M global water vapor dataset. Abstract A53G-03, AGU Fall Meeting, San Francisco, CA, December 13-17.

Bytheway, J. L., J. M. Forsythe, and T. H. Vonder Haar, 2009: Improvement of the NVAP global water vapor data set for climate, hydrological and weather studies (poster). Abstract IN43B-1146, AGU Fall Meeting, San Francisco, CA, December 14-18.

Forsythe, J. M., J.L. Bytheway, and T.H. Vonder Haar, 2009: The NVAP global water vapor climate data record: science results and plans for improvement and continuation. 16th AMS Conference on Satellite Meteorology and Oceanography. Phoenix, Arizona, January 11-15.

Bytheway, J. L., 2008: An empirical emissivity model for complex surfaces. Proc. 12th AMS Conference on IOAS-AOLS, New Orleans, January 20-24.

Vonder Haar, T. H., J. Forsythe, and J.L. Bytheway, 2008: Variability of water vapor observations on daily to decadal timescales from the global NVAP dataset (poster). AGU Chapman Conference on Atmospheric Water Vapor and Its Role in Climate, Kailua-Kona, Hawaii, October 20–24.

Professional Affiliations

Earth Science Women's Network (ESWN) 2019 – present
Association for Women in Science (AWIS) 2019 – present
American Meteorological Society (AMS), 2004 – present
American Geophysical Union (AGU), 2008 – present
National Weather Association (NWA) 2003 – 2006
Sigma Gamma Epsilon National Honor Society for the Earth Sciences, inducted 2004

Professional Activities

AMS Conference on Hydrology Session Chair, 2021 Annual Meeting, January 2021
Physical Sciences Laboratory IT Steering Committee, 2020 - present
NASA ESROGSS Proposal Review Panel, March 2020
CIRES Mentoring Committee, 2020 - present
 Vice Chair, 2021 - present
AMS Local Chapter Affairs Committee, January 2020 - present
NASA ROSES Proposal Review Panel, November 2019
CIRES Members' Council Representative, 2019 - present
Earth Science Women's Network (ESWN) Women in Sciences Leadership Workshop,
 November 2019
Student Mentor to participants in Center for Multiscale Modeling of Atmospheric
 Processes (CMMAP) Research Experience for Undergraduates (REU) program,
 2012, 2013, 2015, 2016
Delegate to AMS Congressional Visits Day on Weather Water and Climate, June 2015
Colorado State University Department of Atmospheric Science Graduate Student
 Representative, August 2014-August 2016
Fort Collins Atmospheric Scientists (FORTCAST) Local chapter of the AMS,
 2014 - present
 Treasurer, 2016-2017

Awards

Sigma Gamma Epsilon W.A. Tarr Award, 2005
California University of Pennsylvania Department of Earth Sciences Award, 2005
Order of Omega Patrick Halloran Scholarship, 2004
Phi Sigma Sigma, Epsilon Tau Chapter Lori Hartman Award, 2003
California University of Pennsylvania Governor's Scholarship, 2001 – 2005

Community Activities

Loveland Masters Swim Team, 2018-present
Larimer County Dive Rescue Team, 2017-present,
 Vice President, 2018-present
Fort Collins Area Swim Team (FAST) Masters, 2014-2018