

# An Analysis of the HMT Bibliography

## Tim Schneider, Allen White & Marty Ralph

### I. Introduction

The growing body of literature that comprises the collection of HMT and related publications (including CALJET, PACJET and their precursors) dates back to 2000 and includes 50 peer reviewed journal articles (an online list is maintained at: <http://hmt.noaa.gov/pubs/>).

Other attributes of this record include:

- Of the 50 papers included in the list at this time (# publications/year):
  - 1/2000; 1/2001; 2/2002; 3/2003; 4/2004; 6/2005; 4/2006; 5/2007; 11/2008; 7/2009; 6/2010\*
  - \*Year in progress
  
- The 50 publications have appeared in the following journals
  - Monthly Weather Review (15)
  - Journal of Hydrometeorology (12)
  - Journal of Atmospheric and Oceanic Technology (6)
  - Bulletin of the American Meteorological Society (4)
  - Geophysical Research Letters (3)
  - *Proc. Institution of Civil Engineers – Water Resources Research* (2)
  - Weather and Forecasting (2)
  - IEEE Transactions on Geoscience and Remote Sensing (1)
  - Journal of Applied Meteorology and Climatology (1)
  - Journal of Climate (1)
  - Nonlinear Processes in Geophysics (1)
  - Progress in Oceanography (1)
  - Water Management (1)
  
- Lead authors represent the following institutions (contributing authors represent an additional 10 or more institutions):
  - NOAA ESRL Physical Sciences Division
  - NOAA ESRL Global Systems Division
  - NOAA NSSL
  - NOAA NWS National Centers for Environmental Prediction
  - NCAR/Societal Impacts Program
  - USGS
  - CIRES/University of Colorado
  - CIRA/Colorado State University
  - Naval Postgraduate School
  - University of Washington
  - Universit`a di Torino, Torino, Italy
  
- According to the [Web of Science](#), these papers have been cited 359 times

as of this writing.

- At least three papers have received awards (see section “HMT Publications by Year”).

Selection Criteria:

It was felt that this list has the most value if it includes only those papers that meet the following criteria:

- They are clearly a peer-reviewed journal article
- They directly use observations or model information from HMT, PACJET or CALJET
- While of considerable import in their own right, non-refereed papers and/or journal articles that do not use CALJET, PACJET, or HMT data or modeling results were excluded from this compilation

## II. HMT Publications by Phenomena

The publications can be organized into topical or phenomenological groupings. Of course such an exercise is inherently subjective, however, one way to group them seems to be quite natural:

- Atmospheric Rivers (8 papers)
- Warm Rain Processes (4 papers)
- Orographic Effects (7 papers)
- Observing Systems (15 papers)
- Precipitation Forecasting (6 papers)
- Other Physical Processes (7 papers)

Of course some papers might fall into multiple categories, however, the exercise is instructive as is, and is to a large degree instructive of the history and evolution of “HMT.”

### Atmospheric Rivers (AR; 8 papers)

- Bao, J.-W., S. A. Michelson, P. J. Neiman, F. M. Ralph, and J. M. Wilczak, 2006: Interpretation of enhanced integrated water-vapor bands associated with extratropical cyclones: Their formation and connection to tropical moisture. *Mon. Wea. Rev.*, **134**, 1063-1080. {Bao'06}
- Junker, N.W; M.J. Brennan; F. Pereira;M. Bodner, 2009:Assessing QPF Forecast Uncertainty With Standardized Anomalies and Ensemble Guidance at the Hydrometeorological Prediction Center. *Bull. Amer. Meteor. Soc.*, **90**, 445-453. DOI: 10.1175/2008BAMS2636.1 {Junker'09}
- Neiman, P. J., F. M. Ralph, G. A. Wick, J. D. Lundquist and M. D. Dettinger, 2008: Meteorological characteristics and overland precipitation impacts of atmospheric rivers affecting the West Coast of North America based on eight years of SSM/I satellite observations. *J. Hydrometeor.*, **9**, 22-47. {Neiman'08a}
- Neiman, P. J., F. M. Ralph, G. A. Wick, Y.-H. Kuo, T.-K. Wee, Z. Ma, G. H. Taylor, and M. D. Dettinger, 2008: Diagnosis of an intense atmospheric river impacting the Pacific Northwest: Storm summary and offshore vertical structure observed with COSMIC satellite retrievals. *Mon. Wea. Rev.*, **136**, 4398-4420, DOI: 10.1175/2008MWR2550.1. {Neiman'08b}
- Ralph, F. M., P. J. Neiman, G. A. Wick, S. I. Gutman, M. D. Dettinger, C. R. Cayan, and A. B. White 2006: Flooding on California's Russian River: The Role of Atmospheric Rivers. *Geophys. Res. Lett.*, **33**, L13801, doi:10.1029/2006GL026689. {Ralph'06}
- Ralph, F. M., P. J. Neiman, and R. Rotunno, 2005: Dropsonde Observations in Low-Level Jets Over the Northeastern Pacific Ocean from CALJET-1998 and PACJET-2001: Mean Vertical-Profile and Atmospheric-River Characteristics. *Mon. Wea. Rev.*, **133**, 889-910, doi: 10.1175/MWR2896.1. {Ralph'05a}
- Ralph, F. M., P. J. Neiman, and G. A. Wick, 2004: Satellite and CALJET aircraft observations of atmospheric rivers over the eastern North-Pacific Ocean during the winter of 1997/98. *Mon. Wea. Rev.*, **132**, 1721-1745.

{Ralph'04}

- Wick, Gary A., Ying-Hwa Kuo, F. Martin Ralph, Tae-Kwon Wee, Paul J. Neiman, 2008: Intercomparison of integrated water vapor retrievals from SSM/I and COSMIC. *Geophys. Res. Lett.*, **35**, L21805.  
DOI:10.1029/2008GL035126 {Wick'08}

### Warm Rain Processes (WR; 4)

- Kingsmill, D. E., A. B. White, P. J. Neiman, F. M. Ralph, 2006: Northern California Precipitation Characteristics during the 1998 CALJET Winter Season: Vertical Structure and Radar Reflectivity-Rainfall Rate Relationships. *Mon. Wea. Rev.*, **134**, 2072-2094. {Kingsmill'06}
- Martner, B. E., S. E. Yuter, A. B. White, S. Y. Matrosov, D. E. Kingsmill, and F. M. Ralph, 2008: Raindrop size distributions and rain characteristics in California coastal rainfall for periods with and without a radar brightband. *J. Hydrometeor.*, (in press). {Martner'08}
- Neiman, P. J., B. E. Martner, A. B. White, G. A. Wick, F. M. Ralph, and D. E. Kingsmill, 2005: Wintertime nonbrightband rain in California and Oregon during CALJET and PACJET: Geographic, interannual, and synoptic variability. *Mon. Wea. Rev.*, **133**, 1199-1223, doi:10.1175/MWR2919.1. {Neiman'05}
- White, A. B., P. J. Neiman, F. M. Ralph, D. E. Kingsmill, and P. O. G. Persson, 2003: Coastal Orographic Rainfall Processes Observed by Radar during the California Land-Falling Jets Experiment, *J. Hydrometeorology*, **4**, 264-282. {White'03}

### Orographic Effects (OE; 7)

- Neiman, P. J., E. M. Sukovich, F. M. Ralph, M. Hughes, 2010: A Seven-Year Wind Profiler-Based Climatology of the Windward Barrier Jet along California's Northern Sierra Nevada. *Mon. Wea. Rev.*, (In press). {Neiman'10; preprint}
- Neiman, P. J., F. M. Ralph, A. B. White, D. D. Parrish, J. S. Holloway, and D. L. Bartels, 2006: A Multiwinter analysis of channeled flow through a prominent gap along the northern California Coast during CALJET and PACJET. *Mon. Wea. Rev.*, **134**, 1815-1841. {Neiman'06}
- Neiman, P. J., F. M. Ralph, D. P. Jorgensen, A. B. White, and D. E. Kingsmill, 2004: Modification of Fronts and Precipitation by Coastal Blocking during an Intense Landfalling Winter Storm in Southern California: Observations during CALJET. *Mon. Wea. Rev.*, **132**, 242-273. {Neiman'04}
- Neiman, P. J., F. M. Ralph, A. B. White, D. E. Kingsmill, and P. O. G. Persson, 2002: The Statistical Relationship between Upslope Flow and Rainfall in California's Coastal Mountains: Observations during CALJET, *Mon. Wea. Rev.*, **130**, 1468-1492. {Neiman'02}
- Nuss, W. A., and D. K. Miller, 2001: Mesoscale predictability under various synoptic regimes, *Nonlinear Processes in Geophysics*, **8**, 429-438. {Nuss'01}

- Ralph, F. M., P. J. Neiman, D. E. Kingsmill, P. O. G. Persson, A. B. White, E. T. Strem, E. D. Andrews, and R. C. Antweiler, 2003: The Impact of a Prominent Rain Shadow on Flooding in California's Santa Cruz Mountains: A CALJET Case Study and Sensitivity to the ENSO Cycle *J. Hydrometeor.*, **4**, 1243-1264. {Ralph'03}
- Smith, B.L., S.E. Yuter, P.J. Neiman, and D.E. Kingsmill, 2009: Water vapor fluxes and orographic precipitation over northern California associated with a land-falling atmospheric river. *Mon. Wea. Rev.*, **137**, in press. {Smith'10}

### Observing Systems (OS; 15)

- Matrosov, S.Y., 2010: Evaluating Polarimetric X-Band Rainfall Estimators during HMT. *J. Atmos. Oceanic Technol.*, **27**, 122-134. {Matrosov'10}
- Matrosov, S.Y., C. Campbell, D. Kingsmill, E. Sukovich, 2009: Assessing Snowfall Rates from X-Band Radar Reflectivity Measurements. *J. Atmos. Oceanic Technol.*, **26**, 2324-2339. {Matrosov'09}
- Dabberdt, W. F., T. W Schlatter, F. H. Carr, E. W. J. Friday, D. Jorgensen, S. Koch, M. Pirone, F. M. Ralph, J. Sun, P. Welsh, J. W. Wilson, and X. Zou, 2005: Multifunctional Mesoscale Observing Networks. *Bull. Amer. Meteor. Soc.*, **86**, 961-982. {Dabberdt'05}
- Gourley, J. J., D. P. Jorgensen, S. Y. Matrosov, and Z. L. Flamig, 2009: Evaluation of Incremental Improvements to Quantitative Precipitation Estimates in Complex Terrain. *J. Hydromet.*, **10**, 1507–1520. {Gourley'09}
- Lundquist, J. D., B. Huggett, H. Roop, and N. Low, 2009: Use of spatially-distributed stream stage recorders to augment rain gages by identifying locations of thunderstorm precipitation and distinguishing rain from snow. *Water Resour. Res.*, **45**,. doi:10.1029/2008WR006995. {Lundquist'09}
- Lundquist, J. D., P. J. Neiman, B. Martner, A. B. White, D. J. Gottas, and F. M. Ralph, 2008: Rain versus snow in the Sierra Nevada, California: Comparing radar and surface observations of melting level. *J. Hydrometeor.*, **9**, 194-211. {Lundquist'08a}
- Lundquist, J. D., and F. Lott, 2008: Using inexpensive temperature sensors to monitor the duration and heterogeneity of snow-covered areas, *Water Resour. Res.*, **44**,. doi:10.1029/2008WR007035. {Lundquist'08b}
- Martner, B. E., P. J. Neiman, and A. B. White, 2007: Collocated radar and radiosonde observations of a double brightband melting layer in northern California. *Mon. Wea. Rev.*, **135**, 2016-2024. {Martner'07}
- Matrosov, S. Y., 2008: Assessment of radar signal attenuation caused by the melting hydrometeor layer. *IEEE Trans. Geosci. Remote Sens.*, **46**, 1039-1047. {Matrosov'08}
- Matrosov, S. Y., K. A. Clark, and D. E. Kingsmill, 2007: A polarimetric radar approach to identify rain, melting-layer, and snow regions for applying corrections to vertical profiles of reflectivity. *J. Appl. Meteor. Climatol.*, **46**, 154-166. {Matrosov'07}
- Matrosov, S. Y., D. E. Kingsmill, B. E. Martner, and F. M. Ralph, 2005: The utility of X-band polarimetric radar for continuous quantitative estimates of

- rainfall parameters. *J. Hydrometeor.*, **6**, 248-262. {Matrosov'05}
- Matrosov, S.Y., 2004: Depolarization estimates from linear H and V measurements with weather radars operating in simultaneous transmission-simultaneous receiving mode. *J. Atmos. Oceanic Technol.*, **21**, 574-583. {Matrosov'04}
- Neiman, P. J., A. B. White, F. M. Ralph, D. J. Gottas, S. I. Gutman, 2009: A water vapour flux tool for precipitation forecasting. *Proc. Institution of Civil Engineers – Water Management* (special issue on weather radar for water management), **162**, 83-94. {Neiman'09; reprint}
- White, A. B., D. J. Gottas, E. T. Strem, F. M. Ralph, and P. J. Neiman, 2002: An Automated Brightband Height Detection Algorithm for Use with Doppler Radar Spectral Moments, *Atmos. Oceanic Technol.*, **19**, 687-697. {White'02}
- White, A. B., J. R. Jordan, B. E. Martner, F. M. Ralph, and B. W. Bartram, 2000: Extending the Dynamic Range of an S-Band Radar for Cloud and Precipitation Studies, *J. Atmos. Oceanic Technol.*, **17**, 1226-1234. {White'00}

### Precipitation Forecasting (PF; 7)

- Ralph, F. M., E. Sukovich, D. Reynolds, M. Dettinger, S. Weagle, W. Clark, and P. J. Neiman, 2010: Assessment of Extreme Quantitative Precipitation Forecasts and Development of Regional Extreme Event Thresholds Using Data from HMT-2006 and COOP Observers. *J. Hydrometeor.*, **11**, (in press) doi:10.1175/2010JHM1232.1 {Ralph'10}
- Jankov, I., J-W Bao, P. Neiman, P. Schultz, H. Yuan, A. White, 2009: Evaluation and Comparison of Microphysical Algorithms in WRF-ARW Model Simulations of Atmospheric River Events Affecting the California Coast. *J. Hydrometeor.*, **10**, 847–870. DOI: 10.1175/2009JHM1059.1 {Jankov'09}
- Jankov, I., P. J. Schultz, C. J. Anderson, and S. E. Koch, 2007: The Impact of Different Physical Parameterizations and Their Interactions on Cold Season QPF in the American River Basin. *J. Hydrometeor.*, **8**, 1141–1151. {Jankov'07}
- Junker, Norman W., Richard H. Grumm, Robert Hart, Lance F. Bosart, Katherine M. Bell, Frank J. Pereira, 2008: Use of Normalized Anomaly Fields to Anticipate Extreme Rainfall in the Mountains of Northern California. *Wea. Forecasting*, **23**, 336-356. {Junker'08}
- Morss, R. E., and F. M. Ralph, 2007: Use of information by National Weather Service forecasters and emergency managers during CALJET and PACJET-2001. *Wea. Forecasting*, **22**, 539-555. {Morss'07}
- Ralph, F. M., R. M. Rauber, B. F. Jewett, D. E. Kingsmill, P. Pisano, P. Pugner, R. M. Rasmussen, D. W. Reynolds, T. W. Schlatter, R. E. Stewart, and J. S. Waldstreicher, 2005: Improving short term (0-48 h) cool season quantitative precipitation forecasting: Recommendations from a USWRP workshop. *Bull. Amer. Meteor. Soc.*, **86**, 1619-1632, doi: 10.1175/BAMS-86-11-1619. {Ralph'05b}



Yuan, H., J. A. McGinley, P. J. Schultz, C. J. Anderson, and C. Lu, 2008: Short-Range Precipitation Forecasts from Time-lagged Multimodel Ensembles during the HMT-West-2006 Campaign. *J. Hydrometeor.*, **9**, 477-491. {Yuan'08}

### Physical Processes (PP; 9)

Loosely, these can be broken down into papers on surface processes, hydrologic applications (e.g. debris flow) and tropical connections.

- Zamora, R.J., F. M. Ralph, E. Clark, T. Schneider, 2010: The NOAA Hydrometeorology Testbed Soil Moisture Observing Networks: Design, Instrumentation, and Preliminary Results. *J. Ocean. Atmos. Tech.* (accepted) {Zamora'10}
- White, A. B., D. J. Gottas, A. F. Henkel, P. J. Neiman, F. M. Ralph, and S. I. Gutman, 2010: Developing a Performance Measure for Snow-Level Forecasts. *J. Hydrometeor.*, **11**, 739–753, doi:10.1175/2009JHM1181.1 {White'10}
- Andrews, E. D., R. C. Antweiler, P. J. Neiman, and F. M. Ralph, 2004: Influence of ENSO on flood frequency along the California coast. *J. Climate*, **17**, 337-348. {Andrews'04}
- Coplen, Tyler B., Paul J. Neiman, Allen B. White, Jurate M. Landwehr, F. Martin Ralph, and Michael D. Dettinger, 2008: Extreme changes in stable hydrogen isotopes and precipitation characteristics in a landfalling Pacific storm. *Geophys. Res. Lett.*, **35**, L21808. DOI:10.1029/2008GL035481 {Coplen'08}
- Jorgensen, D. P., P. Zhaoxia, P. O. G. Persson, and W.-K. Tao, 2003: Variations associated with cores and gaps in a Pacific narrow cold frontal rainband. *Mon. Wea. Rev.*, **131**, 2705-2729. {Jorgensen'03}
- Persson, P. O. G., P. J. Neiman, B. Walter, and F. M. Ralph, 2005: Contributions from California coastal-zone surface fluxes to heavy coastal precipitation: A CALJET case study during the strong El Niño of 1998. *Mon. Wea. Rev.*, **133**, 1175-1198, doi: 10.1175/MWR2910.1. {Persson'05}
- Restrepo, P., D.P. Jorgensen, S.H. Cannon, J. Costa, J. Laber, J. Major, B. Martner, J. Purpura, K. Werner, 2008: Joint NOAA/NWS/USGS Prototype Debris Flow Warning System for Recently Burned Areas in Southern California. *Bull. Amer. Meteor. Soc.*, **89**, 1845-1851, doi: 10.1175/2008BAMS2416.1. {Restrepo'08}
- Richiardone, R., and M. Manfrin, 2009: Neutral saturated lapse rate: An experiment check from CALJET-1998 and PACJET 2001. *Mon. Wea. Rev.*, **137**, in press. {Richiardone'09; early release}
- Wilczak, J. M., R. R. Leben, and D. S. McCollum, 2007: Upper-ocean thermal structure and heat content off the U.S. West Coast during the 1997-1998 El Niño event using AXBT and satellite altimetry data. *Progress in Oceanography*, **74**, 48-70. {Wilczak'07}

### **III. Publications by HMT Major Activity Areas**

It also helps to understand how these papers map onto the five major activity areas of HMT:

- Quantitative Precipitation Estimates (QPE)
- Quantitative Precipitation Forecasts (QPF)
- Snow Information (SI)
- Hydrologic Applications (HA)
- Decision Support Tools & Verification (DST/V; combined for simplicity)

Verification is a noteworthy cross-cutting theme.

There is even more overlap when one breaks things down this way and it was felt the best way to handle this was to develop a matrix, cross referencing the phenomenological groupings with the mapping onto the HMT Major Activity Areas.



Table 1 Linking Phenomena to HMT Major Activity Areas

Phenomena	Paper	HMT Major Activity Area				
		QPE	QPF	SI	HA	V/ DST
Atmospheric Rivers (8)	Bao'06		✓		✓	✓
	Junker'09		✓			✓
	Neiman'08a	✓	✓	✓	✓	✓
	Neiman'08b	✓	✓	✓	✓	✓
	Ralph'06		✓		✓	✓
	Ralph'05a		✓			✓
	Ralph'04		✓		✓	✓
	Wick'08		✓		✓	✓
Warm Rain Processes (4)	Kingsmill'06	✓	✓			✓
	Martner'08	✓	✓		✓	✓
	Neiman'05	✓	✓		✓	✓
	White'03	✓	✓		✓	✓
Orographic Effects (7)	Neiman'10	✓				✓
	Neiman'06		✓			
	Neiman'04		✓			✓
	Neiman'02		✓		✓	✓
	Nuss'01		✓			✓
	Smith'10		✓			✓
	Ralph'03	✓	✓		✓	✓
Observing Systems (15)	Dabberdt'05	✓	✓		✓	✓
	Gourley'09	✓			✓	✓
	Lundquist'09	✓		✓	✓	
	Lundquist'08a			✓	✓	
	Lundquist'08b			✓	✓	
	Martner'07	✓				
	Matrosov'10	✓		✓		✓
	Matrosov'09	✓		✓		
	Matrosov'08	✓		✓		✓
	Matrosov'07	✓		✓		
	Matrosov'05	✓				✓
	Matrosov'04	✓		✓		
	Neiman'09		✓	✓	✓	✓
	White'02			✓	✓	✓
	White'00	✓		✓		

		HMT Major Activity Area				
Phenomena	Paper	QPE	QPF	SI	HA	V/ DST
Precipitation Forecasting (7)	Ralph'10		✓			✓
	Jankov'09		✓			✓
	Jankov'07		✓			
	Junker'08		✓			✓
	Morss'07	✓	✓		✓	✓
	Ralph'05b	✓	✓	✓	✓	✓
	Yuan'08		✓			
Physical Processes (9)	Zamora'10				✓	
	White'10		✓	✓	✓	✓
	Andrews'04		✓		✓	
	Coplen'08	✓				
	Jorgensen'03	✓	✓		✓	
	Persson'05		✓		✓	✓
	Restrepo'08	✓			✓	✓
	Richiardone'09					✓
	Wilczak'07					✓

#### IV. HMT Publications by Year



Denotes an award-winning paper.

##### 2010 (6)


- Zamora, R.J., F. M. Ralph, E. Clark, T. Schneider, 2010: The NOAA Hydrometeorology Testbed Soil Moisture Observing Networks: Design, Instrumentation, and Preliminary Results. *J. Ocean. Atmos. Tech.* (accepted)
- Ralph, F. M., E. Sukovich, D. Reynolds, M. Dettinger, S. Weagle, W. Clark, and P. J. Neiman, 2010: Assessment of Extreme Quantitative Precipitation Forecasts and Development of Regional Extreme Event Thresholds Using Data from HMT-2006 and COOP Observers. *J. Hydrometeor.*, **11**, (in press) doi:10.1175/2010JHM1232.1
- White, A. B., D. J. Gottas, A. F. Henkel, P. J. Neiman, F. M. Ralph, and S. I. Gutman, 2010: Developing a Performance Measure for Snow-Level Forecasts. *J. Hydrometeor.*, **11**, 739–753, doi:10.1175/2009JHM1181.1
- Neiman, P. J., E. M. Sukovich, F. M. Ralph, M. Hughes, 2010: A Seven-Year Wind Profiler-Based Climatology of the Windward Barrier Jet along California's Northern Sierra Nevada. *Mon. Wea. Rev.*, **138**, 1206–1233. doi:10.1175/2009MWR3170.1.
- Smith, B. L., S. E. Yuter, P.J. Neiman, and D. E. Kingsmill, 2010: Water Vapor Fluxes and Orographic Precipitation over Northern California Associated with a Landfalling Atmospheric River *Mon. Wea. Rev.*, **138**, 74–100. doi:10.1175/2009MWR2939.1.
- Matrosov, S.Y., 2010: Evaluating Polarimetric X-Band Rainfall Estimators during HMT. *J. Atmos. Oceanic Technol.*, **27**, 122-134. doi:10.1175/2009JTECHA1318.1

##### 2009 (7)

- Matrosov, S.Y., C. Campbell, D. Kingsmill, E. Sukovich, 2009: Assessing Snowfall Rates from X-Band Radar Reflectivity Measurements. *J. Atmos. Oceanic Technol.*, **26**, 2324-2339.
- Gourley, J. J., D. P. Jorgensen, S. Y. Matrosov, and Z. L. Flamig, 2009: Evaluation of Incremental Improvements to Quantitative Precipitation Estimates in Complex Terrain. *J. Hydromet.*, **10**, 1507–1520.
- Jankov, I., J-W Bao, P. Neiman, P. Schultz, H. Yuan, A. White, 2009: Evaluation and Comparison of Microphysical Algorithms in WRF-ARW Model Simulations of Atmospheric River Events Affecting the California Coast. *J. Hydrometeor.*, **10**, 847–870.
- Junker, N.W; M.J. Brennan; F. Pereira;M. Bodner, 2009:Assessing QPF Forecast Uncertainty With Standardized Anomalies and Ensemble Guidance at the Hydrometeorological Prediction Center. *Bull. Amer. Meteor. Soc.*, **90**, 445-453.
- Lundquist, J. D., B. Huggett, H. Roop, and N. Low, 2009: Use of spatially-

- distributed stream stage recorders to augment rain gages by identifying locations of thunderstorm precipitation and distinguishing rain from snow. *Water Resour. Res.*, **45**.
- Neiman, P.J., A.B. White, F.M. Ralph, D.J. Gottas, and S.I. Gutman, 2009: A water vapour flux tool for precipitation forecasting. *Proc. Institution of Civil Engineers – Water Management* (special issue on weather radar for water management), **162**, 83-94.
- Richiardone, R., and M. Manfrin, 2009: Neutral saturated lapse rate: An experiment check from CALJET-1998 and PACJET 2001. *Mon. Wea. Rev.*, **137**, in press.

## 2008 (11)

- Coplen, Tyler B., Paul J. Neiman, Allen B. White, Jurate M. Landwehr, F. Martin Ralph, Michael D. Dettinger, 2008: Extreme changes in stable hydrogen isotopes and precipitation characteristics in a landfalling Pacific storm. *Geophys. Res. Lett.*, **35**, L21808. DOI:10.1029/2008GL035481
- Junker, Norman W., Richard H. Grumm, Robert Hart, Lance F. Bosart, Katherine M. Bell, Frank J. Pereira, 2008: Use of Normalized Anomaly Fields to Anticipate Extreme Rainfall in the Mountains of Northern California. *Wea. Forecasting*, **23**, 336-356.
- Lundquist, J. D., P. J. Neiman, B. Martner, A. B. White, D. J. Gottas, and F. M.  Ralph, 2008: Rain versus snow in the Sierra Nevada, California: Comparing radar and surface observations of melting level. *J. Hydrometeor.*, **9**, 194-211.
- Lundquist, J. D., and F. Lott, 2008: Using inexpensive temperature sensors to monitor the duration and heterogeneity of snow-covered areas, *Water Resour. Res.*, **44**, doi:10.1029/2008WR007035.
- Martner, B. E., S. E. Yuter, A. B. White, S. Y. Matrosov, D. E. Kingsmill, and F. M. Ralph, 2008: Raindrop size distributions and rain characteristics in California coastal rainfall for periods with and without a radar brightband. *J. Hydrometeor.*, **9**, 408-425. DOI: 10.1175/2007JHM924.1
- Matrosov, S. Y., 2008: Assessment of radar signal attenuation caused by the melting hydrometeor layer. *IEEE Trans. Geosci. Remote Sens.*, **46**, 1039-1047.
- Neiman, P. J., F. M. Ralph, G. A. Wick, J. D. Lundquist and M. D. Dettinger, 2008: Meteorological characteristics and overland precipitation impacts of atmospheric rivers affecting the West Coast of North America based on eight years of SSM/I satellite observations. *J. Hydrometeor.*, **9**, 22-47.
- Neiman, P. J., F. M. Ralph, G. A. Wick, Y.-H. Kuo, T.-K. Wee, Z. Ma, G. H. Taylor, and M. D. Dettinger, 2008: Diagnosis of an intense atmospheric river impacting the Pacific Northwest: Storm summary and offshore vertical structure observed with COSMIC satellite retrievals. *Mon. Wea. Rev.*, **136**, 4398-4420, DOI: 10.1175/2008MWR2550.1.
- Restrepo, P., D.P. Jorgensen, S.H. Cannon, J. Costa, J. Laber, J. Major, B. Martner, J. Purpura, K. Werner, 2008: Joint NOAA/NWS/USGS Prototype Debris Flow Warning System for Recently Burned Areas in Southern

California. *Bull. Amer. Meteor. Soc.*, **89**, 1845-1851, doi: 10.1175/2008BAMS2416.1.

Wick, Gary A., Ying-Hwa Kuo, F. Martin Ralph, Tae-Kwon Wee, Paul J. Neiman, 2008: Intercomparison of integrated water vapor retrievals from SSM/I and COSMIC. *Geophys. Res. Lett.*, **35**, L21805.  
DOI:10.1029/2008GL035126

Yuan, H., J. A. McGinley, P. J. Schultz, C. J. Anderson, and C. Lu, 2008: Short-Range Precipitation Forecasts from Time-lagged Multimodel Ensembles during the HMT-West-2006 Campaign. *J. Hydrometeorol.*, **9**, 477-491.

## 2007 (5)

Jankov, I., P. J. Schultz, C. J. Anderson, and S. E. Koch, 2007: The Impact of Different Physical Parameterizations and Their Interactions on Cold Season QPF in the American River Basin. *J. Hydrometeorol.*, **8**, 1141–1151.

Martner, B. E., P. J. Neiman, and A. B. White, 2007: Collocated radar and radiosonde observations of a double brightband melting layer in northern California. *Mon. Wea. Rev.*, **135**, 2016-2024.

Matrosov, S. Y., K. A. Clark, and D. E. Kingsmill, 2007: A polarimetric radar approach to identify rain, melting-layer, and snow regions for applying corrections to vertical profiles of reflectivity. *J. Appl. Meteor. Climatol.*, **46**, 154-166.

Morss, R. E., and F. M. Ralph, 2007: Use of information by National Weather Service forecasters and emergency managers during CALJET and PACJET-2001. *Wea. Forecasting*, **22**, 539-555.

Wilczak, J. M., R. R. Leben, and D. S. McCollum, 2007: Upper-ocean thermal structure and heat content off the U.S. West Coast during the 1997-1998 El Nino event using AXBT and satellite altimetry data. *Progress in Oceanography*, **74**, 48-70.

## 2006 (4)

Bao, J.-W., S. A. Michelson, P. J. Neiman, F. M. Ralph, and J. M. Wilczak, 2006: Interpretation of enhanced integrated water-vapor bands associated with extratropical cyclones: Their formation and connection to tropical moisture. *Mon. Wea. Rev.*, **134**, 1063-1080.

Kingsmill, D. E., A. B. White, P. J. Neiman, F. M. Ralph, 2006: Northern California Precipitation Characteristics during the 1998 CALJET Winter Season: Vertical Structure and Radar Reflectivity-Rainfall Rate Relationships. *Mon. Wea. Rev.*, **134**, 2072-2094.

Neiman, P. J., F. M. Ralph, A. B. White, D. D. Parrish, J. S. Holloway, and D. L. Bartels, 2006: A Multiwinter analysis of channeled flow through a prominent gap along the northern California Coast during CALJET and PACJET. *Mon. Wea. Rev.*, **134**, 1815-1841.

Ralph, F. M., P. J. Neiman, G. A. Wick, S. I. Gutman, M. D. Dettinger, C. R. Cayan, and A. B. White 2006: Flooding on California's Russian River: The




Role of Atmospheric Rivers. *Geophys. Res. Lett.*, **33**, L13801, doi:10.1029/2006GL026689.

## 2005 (6)

- Dabberdt, W. F., T. W. Schlatter, F. H. Carr, E. W. J. Friday, D. Jorgensen, S. Koch, M. Pirone, F. M. Ralph, J. Sun, P. Welsh, J. W. Wilson, and X. Zou, 2005: Multifunctional Mesoscale Observing Networks. *Bull. Amer. Meteor. Soc.*, **86**, 961-982.
- Matrosov, S. Y., D. E. Kingsmill, B. E. Martner, and F. M. Ralph, 2005: The utility of X-band polarimetric radar for continuous quantitative estimates of rainfall parameters. *J. Hydrometeor.*, **6**, 248-262.
- Neiman, P. J., B. E. Martner, A. B. White, G. A. Wick, F. M. Ralph, and D. E. Kingsmill, 2005: Wintertime nonbrightband rain in California and Oregon during CALJET and PACJET: Geographic, interannual, and synoptic variability. *Mon. Wea. Rev.*, **133**, 1199-1223, doi:10.1175/MWR2919.1.
- Persson, P. O. G., P. J. Neiman, B. Walter, and F. M. Ralph, 2005: Contributions from California coastal-zone surface fluxes to heavy coastal precipitation: A CALJET case study during the strong El Niño of 1998. *Mon. Wea. Rev.*, **133**, 1175-1198, doi: 10.1175/MWR2910.1.
- Ralph, F. M., R. M. Rauber, B. F. Jewett, D. E. Kingsmill, P. Pisano, P. Pugner, R. M. Rasmussen, D. W. Reynolds, T. W. Schlatter, R. E. Stewart, and J. S. Waldstreicher, 2005: Improving short term (0-48 h) cool season quantitative precipitation forecasting: Recommendations from a USWRP workshop. *Bull. Amer. Meteor. Soc.*, **86**, 1619-1632, doi: 10.1175/BAMS-86-11-1619.
- Ralph, F. M., P. J. Neiman, and R. Rotunno, 2005: Dropsonde Observations in Low-Level Jets Over the Northeastern Pacific Ocean from CALJET-1998 and PACJET-2001: Mean Vertical-Profile and Atmospheric-River Characteristics. *Mon. Wea. Rev.*, **133**, 889-910, doi: 10.1175/MWR2896.1.

## 2004 (4)

- Andrews, E. D., R. C. Antweiler, P. J. Neiman, and F. M. Ralph, 2004: Influence of ENSO on flood frequency along the California coast. *J. Climate*, **17**, 337-348.
- Matrosov, S.Y., 2004: Depolarization estimates from linear H and V measurements with weather radars operating in simultaneous transmission-simultaneous receiving mode. *J. Atmos. Oceanic Technol.*, **21**, 574-583.
- Neiman, P. J., F. M. Ralph, D. P. Jorgensen, A. B. White, and D. E. Kingsmill, 2004:  Modification of Fronts and Precipitation by Coastal Blocking during an Intense Landfalling Winter Storm in Southern California: Observations during CALJET. *Mon. Wea. Rev.*, **132**, 242-273.
- Ralph, F. M., P. J. Neiman, and G. A. Wick, 2004: Satellite and CALJET aircraft observations of atmospheric rivers over the eastern North-Pacific Ocean during the winter of 1997/98. *Mon. Wea. Rev.*, **132**, 1721-1745.

2003 (3)

- Jorgensen, D. P., P. Zhaoxia, P. O. G. Persson, and W.-K. Tao, 2003: Variations associated with cores and gaps in a Pacific narrow cold frontal rainband. *Mon. Wea. Rev.*, **131**, 2705-2729.
- Ralph, F. M., P. J. Neiman, D. E. Kingsmill, P. O. G. Persson, A. B. White, E. T. Strem, E. D. Andrews, and R. C. Antweiler, 2003: The Impact of a Prominent Rain Shadow on Flooding in California's Santa Cruz Mountains: A CALJET Case Study and Sensitivity to the ENSO Cycle. *J. Hydrometeorol.*, **4**, 1243-1264.
- White, A. B., P. J. Neiman, F. M. Ralph, D. E. Kingsmill, and P. O. G. Persson, 2003: Coastal Orographic Rainfall Processes Observed by Radar during the California Land-Falling Jets Experiment, *J. Hydrometeorology*, **4**, 264-282.

2002 (2)

- Neiman, P. J., F. M. Ralph, A. B. White, D. E. Kingsmill, and P. O. G. Persson, 2002: The Statistical Relationship between Upslope Flow and Rainfall in California's Coastal Mountains: Observations during CALJET, *Mon. Wea. Rev.*, **130**, 1468-1492.
- White, A. B., D. J. Gottas, E. T. Strem, F. M. Ralph, and P. J. Neiman, 2002: An Automated Brightband Height Detection Algorithm for Use with Doppler Radar Spectral Moments, *Atmos. Oceanic Technol.*, **19**, 687-697.

2001 (1)

- Nuss, W. A., and D. K. Miller, 2001: Mesoscale predictability under various synoptic regimes, *Nonlinear Processes in Geophysics*, **8**, 429-438.

2000 (1)

- White, A. B., J. R. Jordan, B. E. Martner, F. M. Ralph, and B. W. Bartram, 2000: Extending the Dynamic Range of an S-Band Radar for Cloud and Precipitation Studies, *J. Atmos. Oceanic Technol.*, **17**, 1226-1234.