

Agenda
2016 International Atmospheric Rivers Conference
8-11 August 2016
Scripps Institution of Oceanography

Monday, August 8, 2016

SIO Forum

8:00 Registration, Coffee, Tea and Fruit Basket

8:30 Welcome and Introductory Session: F. Martin Ralph, Keynote Speaker

- Committee co-chairs: *Welcome, Introductions, & Opening Remarks* : 15 mins.
- M. Ralph: *Emergence of the Concept of Atmospheric Rivers* : 30 mins.
- L. Bosart: *The Contributions of Atmospheric Rivers to Extreme Weather Events Arising from the Interactions of Tropical Disturbances with Tropospheric Jet Streams* : 15 mins.
- I. Gorodetskaya: *Atmospheric Rivers Impact on the East Antarctic Surface Mass Balance During Recent Years* : 15 mins.
- J. Jasperse: *ARs and Lake Mendocino FIRO* : 15 mins.

10:00 Break

10:30 Applications 1: Mike Anderson, Invited Speaker

- M. Anderson: *Observing and Detecting ARs and its Application to Water Management in California* : 20 mins.
- J. Jones: *Atmospheric Rivers – A Potential Tool for Improving Sub-Seasonal to Seasonal Precipitation Forecasting?* : 15 mins.
- D. Reynolds: *So it's a Land-falling Atmospheric River, Can That Help the Forecaster Make a Better QPF?* : 15 mins.
- C. Smallcomb: *Communicating Forecast Atmospheric River Scenarios in the Sierra and Western Nevada* : 15 mins.
- A. Fox: *Local Area Quantitative Precipitation Forecasts For Atmospheric River Events in North-central California Using the MtnRT System* : 15 mins.
- Applications 1 Discussion and Session Wrap : 10 mins.

12:00 Lunch

1:10 Global and Regional Perspectives 1: Bin Guan, Invited Speaker

- B. Guan: *Global Perspective of Atmospheric Rivers: Climatology, and Climate Modulation* : 20 mins.

- M. Viale: *The Impacts of Atmospheric Rivers on Precipitation over the West Coast of Southern South America* : 15 mins.
- K. Mattingly: *Atmospheric River Impacts on the Greenland Ice Sheet* : 15 mins.
- L. Mingli: *Characteristics of Water Vapor Transport in the Three Rivers' Headstream Region of Tibet Plateau* : 15 mins
- K. Odemark: *Extreme Precipitation in Norway and the Connection to Atmospheric Rivers* : 15 mins.
- J. Stuart: *Atmospheric Rivers in Australia?* : 15 mins.
- Global and Regional Perspectives 1 Discussion and Session Wrap : 15 mins.

3:00 Break

3:30 Panel Discussion 1, Applications and Decision Makers: Panel Members TBD

4:30 Breakout Session 1, 3-4 Topics: Topics TBD

5:30 Adjourn

Tuesday, August 9, 2016

SIO Forum

8:00 Registration, Coffee, Tea and Fruit Basket

8:30 Applications 2: Larry Schick, Invited Speaker

- L. Schick: *Managing Reservoirs for Atmospheric Rivers – The Uneven Balance of Flood Risk and Water Supply* : 20 mins.
- M. Kelsch: *Atmospheric Rivers Training from UCAR's COMET Program* : 15 mins.
- D. Cox: *AR Science, Natural Hazards Risk Reduction, and ARkStorm* : 15 mins.
- F. Dominguez: *The Lifecycle of an Atmospheric River – from Moisture Sources to Socioeconomic Impacts* : 15 mins.
- M. McCarthy: *Integrated Modeling of Climate Stress and Resilience in Snow-Fed Arid Lands* : 15 mins.
- Applications 2 Discussion and Session Wrap : 10 mins.

10:00 Break

10:30 Modeling and Methodologies 1: Duane Waliser, Invited Speaker

- D. Waliser: *Atmospheric River Modeling: Forecasts, Climate Simulations and Climate Projections* : 20 mins.
- M. DeFlorio: *Predictability and Prediction Skill of Atmospheric Rivers* : 15 mins.
- B. Kawzenuk: *Quantification of Atmospheric River Landfall Errors at Bodega Bay, California in the Global Forecast System and West-WRF* : 15 mins.
- A. Martin: *How do Spectrally Vast AR Thwart Attempts to Skillfully Forecast their Continental Precipitation?* : 15 mins.
- R. Leung: *Aerosol Effects on Clouds and Precipitation: Insights from CalWater 2015 and a Multi-year Quasi-global Simulation of Trans-Pacific Transport of Aerosols* : 15 mins.
- Modeling and Methodologies 1 Discussion and Session Wrap : 10 mins.

12:00 Lunch

1:10 Observing and Detecting ARs 1 (IOPs / Satellite): Allen White, Invited Speaker

- A. White: *Monitoring Freezing Levels across California: Quantifying the Impacts of ARs and the Recent El Niño* : 20 mins.
- R. Spackman: *Integrated Observing Strategies for Atmospheric Rivers – Major Field Studies and Future Directions* : 20 mins.

- L. McMurdie: *Atmosphere Rivers Observed during the Olympic Mountains Experiment (OLYMPEX) Field Campaign* : 15 mins.
- J. Zagrodnik: *Synoptic and Orographic Control of Observed Drop Size Distribution Regimes in Atmospheric River Events During the OLYMPEX Field Campaign* : 15 mins.
- J. Ryoo: *Capturing Atmospheric Rivers: Alpha Jet Atmospheric eXperiment (AJAX) Flights in Support of CalWater/El Nino Rapid Response 2016* : 15 mins.
- A. Kren: *Impact of Global Hawk Data from the SHOUT-ENRR 2016 Field Campaign on an Atmospheric River in the Central North Pacific* :15mins.
- Observing and Detecting ARs 1 Discussion and Session Wrap : 10 mins.

3:00 Break

3:30 Poster Session in Forum Lobby (ends 5:30)

5:00 Mixer / Cocktail Hour

6:00 Dinner at Forum outside (BBQ or Mexican buffet)

** Poster session begins 3:00 – 3:30, runs until 5:30. Cocktails begin at 5, dinner begins at 6.

Wednesday, August 10, 2016

SIO Forum

8:00 Registration, Coffee, Tea and Fruit Basket

8:30 Impacts of ARs 1: Mike Dettinger, Invited Speaker

- M. Dettinger: *A Survey of the Hydrological and Ecological Effects of Landfalling Atmospheric Rivers* : 20 mins.
- C. Albano: *Linking Inter-Annual Variations of Atmospheric River Landfalls to Vegetation Responses in the Southwestern United States* : 15 mins.
- L. Huning: *Investigating the Climatological Impact of Atmospheric Rivers on the Sierra Nevada (USA) Seasonal Snowpack* : 15 mins.
- B. Hatchett: *The Contributions of Atmospheric Rivers to Avalanche Fatalities in the Western United States* : 15 mins.
- Impacts of ARs 1 Discussion and Session Wrap : 10 mins.

9:45 Break

10:15 Breakout Session 2, 3-4 Topics: Topics TBD

11:00 Impacts of ARs 2: Alexandre Ramos, Invited Speaker

- A. Ramos: *Atmospheric Rivers in Europe: From Moisture Sources to Impacts and Future Climate Scenarios* : 20 mins.
- N. Oakley: *Atmospheric Rivers as a Trigger for Post-Fire Debris Flows in the Transverse Ranges of Southern California* : 15 mins.
- I. Small: *Atmospheric Rivers and Enhanced Integrated Vapor Transport Episodes: Their Role in Damaging Frontal Passages in Southern California With an Emphasis on Strong Winds* : 15 mins.
- Impacts of ARs 2 Discussion and Session Wrap : 10 mins.

12:00 Lunch

1:10 Theory, Structure, Processes 1: Jason Cordeira, Invited Speaker

- J. Cordeira: *Mid-Latitude Dynamics and Atmospheric Rivers* : 20 mins.
- T. Beucler: *Poleward Transport of Water Vapor by Mid-Latitude Moist Eddies* : 15 mins.
- B. Moore: *Rossby Wave Breaking and Extreme Precipitation in the Central and Eastern U.S.* : 15 mins.
- O. Persson: *Arctic Atmospheric Rivers: Triggers for Linking Atmospheric Synoptic Transport, Cloud Phase, Surface Energy Fluxes, and Sea-ice Growth* : 15 mins.

- P. Neiman: *An Airborne and Ground-based Study of a Long-lived and Intense Atmospheric River with Mesoscale Frontal Waves Impacting California during CalWater-2014* : 15 mins.
- S. Harris: *Backwards Trajectory Analysis of Atmospheric Rivers Affecting Southern California using HYSPLIT* : 15 mins.
- Theory, Structure, Processes 1 Discussion and Session Wrap : 15 mins.

3:00 Break

3:30 Panel Discussion, Converging on a definition of AR: Panel Members TBD

4:15 Modeling, Methodologies 2: Ruby Leung, Invited Speaker

- R. Leung: *Atmospheric Rivers in a Hierarchy of Climate Simulations: Resolution Sensitivity and Impacts of Global Warming* : 20 mins.
- V. Espinoza: *Projections of Climate Change Effects on Global Atmospheric River Landfalls* : 15 mins.
- A. Subramanian: *Stochastic Multi-scale Atmospheric Modeling for Weather Forecasting: An Atmospheric River Case Study* : 15 mins.
- C. Shields: *U.S. West Coast Versus the U.K. Atmospheric Rivers: Differences in Future Climate Projections* : 15 mins.
- Modeling, Methodologies 2 Discussion and Session Wrap : 10 mins.

5:30 Adjourn

Thursday, August 11, 2016

SIO Forum

8:00 Registration, Coffee, Tea and Fruit Basket

8:30 Observing and Detecting ARs 2 (ARDT): Gary Wick, Invited Speaker

- G. Wick: *Recent Updates to Objective Atmospheric River Detection Techniques and Resulting Implications for Atmospheric River Climatologies* : 20 mins.
- J. Rutz: *The Development of an Atmospheric River Catalog at the Center for Western Weather and Water Extremes* : 15 mins.
- A. Gershunov: *Assessing the Climate-Scale Variability and Seasonal Predictability of Atmospheric Rivers Affecting the West Coast of North America* : 15 mins.
- S. Sellars: *High Dimensional IVT Atmospheric River Characteristics Using "CONNected objECT (CONNECT)" Segmentation Approach: Building a Database of Atmospheric Rivers Events.* : 15 mins.
- A. Behrangi: *How Well is Atmospheric River Precipitation Quantified From Space? Composite Analysis Over the Western United States* : 15 mins.
- Observing and Detecting ARs 2 Discussion and Session Wrap : 10 mins.

10:00 Break

10:30 Global and Regional Perspectives 2: Jon Rutz, Invited Speaker

- J. Rutz: *Factors Influencing the Inland Penetration of Atmospheric Rivers over Western North America* : 20 mins.
- J. Gyakum: *Atmospheric Rivers Over Eastern Canada: Their Seasonality, Impact on Air Mass Dynamics, and Links to Extreme Precipitation* : 15 mins.
- S. Reilly: *Influence of the Santa Cruz Mountains on Precipitation from a Landfalling Atmospheric River* : 15 mins.
- M. Mueller: *Moisture Transport During the Inland-penetrating Atmospheric River of Early November 2006 in the Pacific Northwest: A High-Resolution Model-based Study* : 15 mins.
- D. Miller: *Investigation of Atmospheric Rivers Impacting the Pigeon River Basin of the Southern Appalachian Mountains* : 15 mins.
- Global and Regional Perspectives 2 Discussion and Session Wrap : 10 mins.

12:00 Lunch

1:10 Theory, Structure, Processes 2: Marty Ralph, Invited Speaker

- M. Ralph: *Airborne and Satellite Observations of AR Structure* : 20 mins.

- J. Doyle: *Sensitivity of High-Impact Extratropical Cyclones to Water Vapor in Atmospheric Rivers* : 15 mins.
- Q. Luo: *The Cloud-Radiative Forcing of the Atmospheric Rivers on the US continents: an Observational Climatology Study* : 15 mins.
- H. Mix: *Coordinated Sampling and Analytical Effort to Examine Interactions Between INPs and Rainout in Winter 2016 ARs in California* : 15 mins.
- G. Passalacqua: *Oceanic Influence on Landfalling Atmospheric Rivers: the Intense Precipitations of February 2-3, 1998* : 15 mins.
- J. Nusbaumer: *A Numerical Evaluation of the Sources of Moisture for Atmospheric Rivers that Impact the West Coast of the United States in the Modern Era and 2100.* : 15 mins.
- Theory, Structure, Processes 2 Discussion and Session Wrap : 15 mins.

3:00 Break

3:30 Panel Discussion 3, Future Directions: Panel Members TBD

4:15 Closing Remarks, M. Ralph

4:30 Adjourn / Book Author Wrap-up

Poster Session

SIO Forum Lobby

3:30 pm to 5:30 pm Tuesday, August 9.

- D. Buch: *Atmospheric River Event over the Eastern Pacific in February 2014: Analysis and Climatological Context*: Global and Regional Perspectives Posters
- S. Czyzyk: *Forecasting High Impact Precipitation Events in the Lee of the Southern Sierra, Bishop, CA*: Applications Posters
- K. Gonzales: *Response of North Pacific Atmospheric Rivers to Climate Change Conditions*: Modeling, Methodologies Posters
- A. Gambacorta: *Exploring Satellite-based Thermal Sounding Capabilities During Extreme Events: Lessons Learned During CalWater and El Nino Rapid Response Campaigns*: Observing and Detecting ARs Posters
- A. Jacobs: *Atmosphere Rivers in Alaska – Yes They do Exist and are Usually Tied to the Biggest and Most Damaging Rain Generated Floods in Alaska*: Global and Regional Perspectives Posters
- A. Liu: *Some Unique Features Associated with the June 2013 Alberta Flooding: Precipitation, Atmospheric River and Evapotranspiration*: Global and Regional Perspectives Posters
- H. Liu: *Monitor Atmospheric River Initiation, Evolution and Impacts on N. America from Joint Satellite Moisture, Wind Vector and Precipitation Information*: Observing and Detecting ARs Posters
- A. Moore: *National Weather Service Forecasters Use GPS Precipitable Water Vapor for Enhanced Situational Awareness during the Southern California Summer Monsoon*: Applications Posters
- B. Moore: *Atmospheric Rivers and Heavy Precipitation Events in the Southeastern U.S.*: Global and Regional Perspectives Posters
- R. Moore: *Dynamics and Predictability of an Extreme Norwegian Precipitation Event*: Global and Regional Perspectives Posters
- L. Muscatine: *How Does a Multi-Authored Academic Book Get Published Anyway?*: Applications Posters
- H. Paltan: *Atmospheric Rivers: Shapers of Global Surface Hydrology*: Impacts of ARs Posters
- J. Ryoo: *Classification of Atmospheric River Events on the U.S. West Coast Using a Trajectory Model*: Theory, Structure, Process Posters.
- T. Salami: *Variability of Climatic Elements in Nigeria over Recent 100 Years*: Global and Regional Perspectives Posters
- W. Yang: *Global Atmospheric Rivers Depicted from Satellite and NWP Reanalysis, and Their Connection to Weather and Climate Phenomenon*: Observing and Detecting ARs Posters.