2nd International Atmospheric Rivers Conference – June 25-28, 2018

Anna Wilson (CW3E/Scripps), Mike DeFlorio (NASA JPL), Mike Warner (USACE Seattle), Alexandre Ramos (Instituto Dom Luiz, U. Lisbon)

International Organizing Committee Co-Chairs

2016 International Atmospheric Rivers Conference

Scripps Institution of Oceanography - La Jolla, California

8th – 11th August 2016

http://cw3e.ucsd.edu/ARconf2016

Many regions face either drought or flood, or are challenged by regional water management issues. Recent advances in atmospheric sciences and hydrology have identified the key role of atmospheric rivers (AR) in determining the distribution of strong precipitation events in midlatitudes. Combined with related phenomena, warm conveyor belts (WCB) and tropical moisture exports (TME) (Fig. 1), the frequency, position and strength of ARs determines the occurrence of many water extremes. This conference brings together experts across atmospheric, hydrologic, oceanic and polar science, water management and civil engineering to advance the science and explore needs for new information.

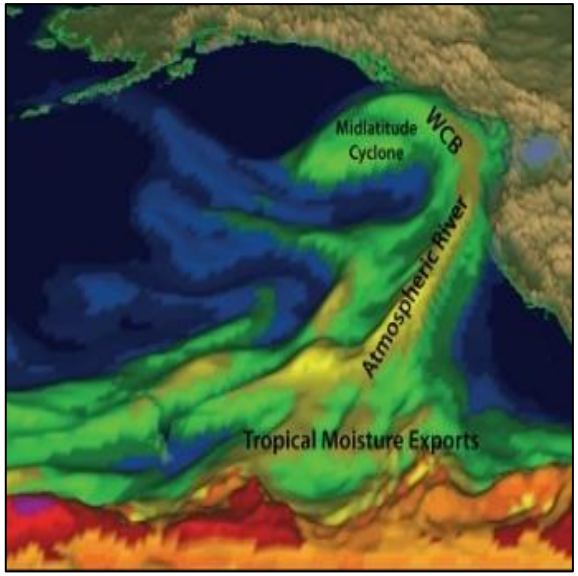


Fig. 1. Depiction of an atmospheric river, interacting with West Coast mountains. Credit: Adapted from NOAA/ESRL Physical Sciences Div. Source: EOS Meeting Report

Conference Goals

- Evaluate the current state and applications of the science of the mid-latitude atmospheric water cycle, with particular emphasis on ARs and associated processes (e.g., WCB and TME)
- Discuss differing regional perspectives
- Assess current forecasting capabilities
- Plan for future scientific and practical challenges

International organizing committee

Allen White (*NOAA ESRL/PSD; Co-Chair*)
Irina Gorodetskaya (*K.U. Leuven, Belgium; Co-Chair*)
Andrew Martin (*CW3E, Scripps; Co-Chair*)
Maximiliano Viale (*Universidad de Chile; Co-Chair*)
Mike Dettinger (*USGS, CW3E*)
David Lavers (*Scripps Inst. Oceanography/CW3E*)
Nina Oakley (*Desert Research Institute*)
F. Martin Ralph (*Scripps Inst. Oceanography/CW3E*)
Jonathan Rutz (*U. S. National Weather Service*)
Ryan Spackman (*Science and Technology Corporation*)
Heini Wernli (*ETH Zurich*)

The conference will be held at the beautiful oceanfront venue of the Robert Paine Scripps Forum for Science, Society and the Environment located at the Scripps Inst. of Oceanography, Univ. of CA – San Diego.

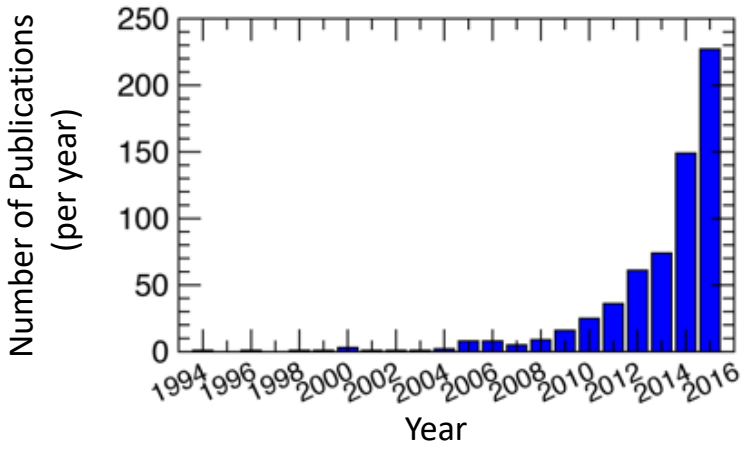
Center for Western Weather and Water Extremes

Contributions for the 2016 Conference are now invited

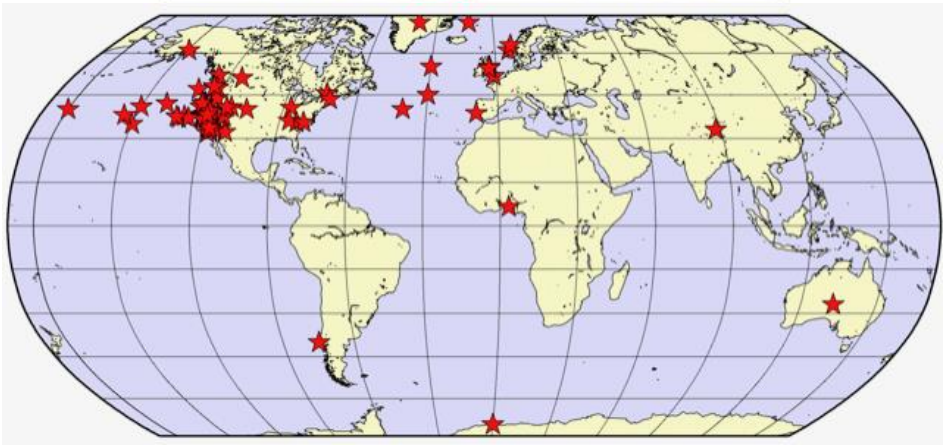
For further information or to submit an abstract, please contact:
Mike Dettinger (mddettin@usgs.gov) or
Mary Tyree (mtyree@ucsd.edu)

1st International Atmospheric Rivers Conference

a) Scientific literature discussing ARs



b) Locations of studies and scientists at IARC

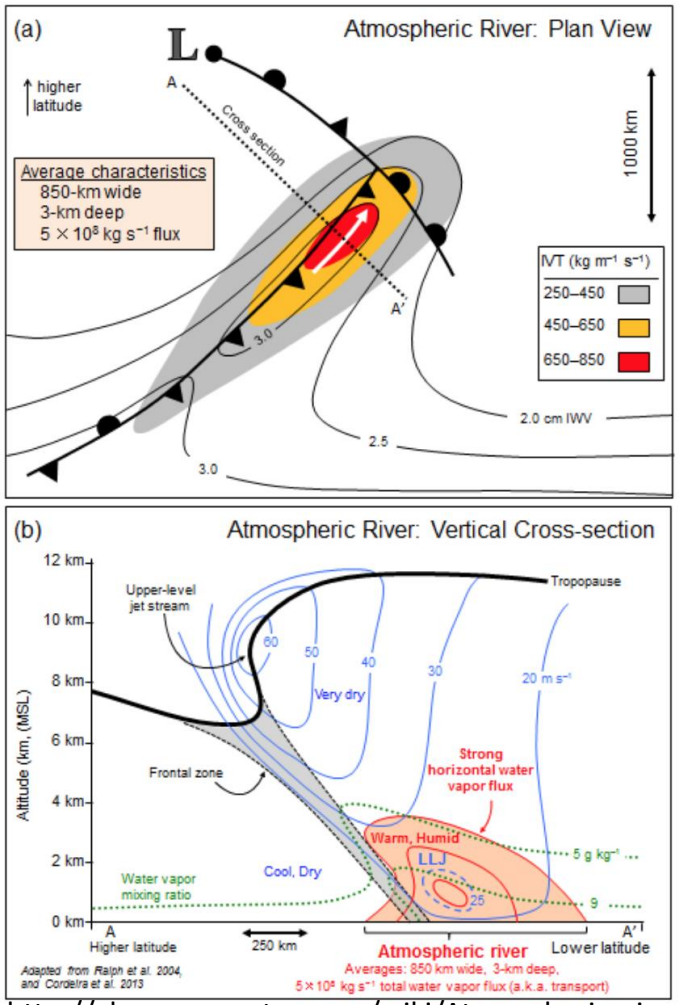


Ralph et al. 2016 (BAMS)

The first conference dedicated to the subject of atmospheric rivers was held in August 2016 with over 100 attendees from across the globe discussing the science, impacts and applications of atmospheric rivers including dynamics, observations, predictions, climate projections and water decisions.

1st IARC Outcomes

- AR Monograph
- Summer colloquium
- AR Definition
- Priority areas for future research
  - Compare AR identification methods and criteria
  - Quantify water vapor sources and budgets
  - Assess key role of ARs in global water cycle, heat, and energy budgets



Ralph et al. 2016 (BAMS)

http://glossary.ametsoc.org/wiki/Atmospheric_river

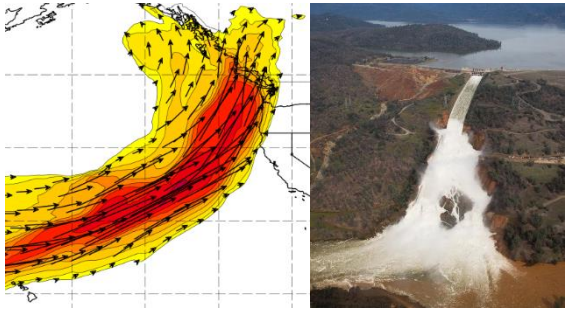
2018 2nd International Atmospheric Rivers Conference

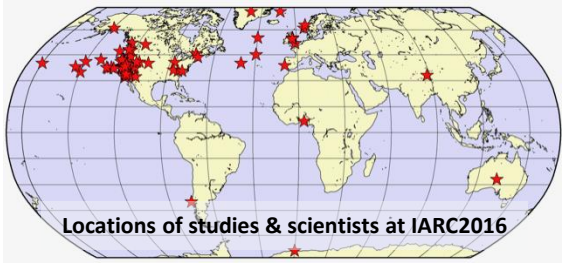
Scripps Institution of Oceanography
La Jolla, California
25-28 June

Center for Western Weather and Water Extremes
SCRIPPS INSTITUTION OF OCEANOGRAPHY AT UC SAN DIEGO

http://cw3e.ucsd.edu/IARC2018

Regions around the globe face challenges in water management due to droughts and/or floods. Atmospheric rivers (ARs) have emerged as a conceptual model to focus hydrologists and atmospheric scientists on the transport mechanisms and impacts of precipitation extremes caused by AR landfall. The frequency, orientation, and strength of ARs determine the occurrence and impact of natural hazards as well as water resource and ecosystem benefits. This conference will bring together experts across the fields of atmospheric, hydrologic, oceanic and polar sciences, water management, civil engineering, and ecology to advance the state of the science and explore needs for new information. Traditional oral and poster sessions will be combined with panel discussions.





Banner image by Joshua Stevens, from NASA Earth Observatory using VIIRS data. Top left image using GFS forecast for 15 Feb 2017. Top right image the Oroville Dam spillway failure on 13 Feb 2017 (Getty Images). Middle image showing ACAPEX and CalWater observations courtesy DOE. Bottom figure shows locations of studies and scientists from among >100 participants in IARC2016.

Abstracts are currently being solicited to cover topics including (but not limited to):

- Field observations and remote sensing of ARs
- AR identification and tracking
- Global and regional perspectives and impacts
- Physical processes and moisture transport in ARs
- Interactions between atmospheric transport and chemistry
- Current forecasting capabilities and opportunities
- Paleo—AR related floods and impacts
- ARs and climate change
- Emerging directions

International organizing committee

Michael DeFlorio (*NASA JPL; Co-Chair*)
Alexandre Ramos (*Instituto Dom Luiz, U. Lisbon, Portugal; Co-Chair*)
Michael Warner (*USACE Seattle; Co-Chair*)
Anna Wilson (*CW3E, Scripps; Co-Chair*)
Elizabeth Barnes (*Colorado State University*)
Rene Garreaud (*Universidad de Chile*)
Irina Gorodetskaya(*University of Aveiro, Portugal*)
David Lavers (*ECMWF*)
Benjamin Moore (*CIRES and NOAA ESRL/PSD*)
Ashley Payne (*University of Michigan*)
Chris Smallcomb (*NWS Reno*)
Harald Sodemann (*University of Bergen*)
Michael Wehner (*Lawrence Berkeley National Lab)*

The conference will be held at the beautiful oceanfront venue of the Robert Paine Scripps Forum for Science, Society and the Environment located at the Scripps Inst. of Oceanography, Univ. of CA – San Diego.

Contributions for the 2018 Conference are now invited
See the website to submit an abstract and register:
http://cw3e.ucsd.edu/IARC2018

Students are strongly encouraged to attend. Scholarships are available, as well as slots for student speakers.
For further information, please contact:
Anna Wilson anna-m-wilson@ucsd.edu or
Alexandre Ramos amramos@fc.ul.pt

Selected Agenda Items

- Oral Presentation Sessions:
  - Winter 2016-2017 (invited speaker John Sandmeyer, San Diego Lifeguard Swiftwater Rescue Team Leader)
  - Atmospheric River Reconnaissance (invited speaker Jack Parrish, NOAA Aircraft Operations Center)
  - S2S Forecasting Session (invited speaker: Jeanine Jones, CA DWR)
  - Applications and Communication Session (invited speakers: Mike Anderson, CA DWR; Daniel Swain, UCLA; Chris Smallcomb, NWS Reno)

Selected Agenda Items

- Oral Presentation Sessions:
  - AR Tracking (invited speaker, C. Shields, NCAR)
  - Regional Perspectives on ARs (invited speakers, Rondanelli, A. Ramos, Instituto Dom Luiz)
  - AR Dynamics (invited speaker, L. Bosart, U Albany)
  - Emerging Directions (invited speaker, D. Waliser, NASA JPL)
  - Weather Forecasting and ARs (invited speaker, A. Martin, CW3E)
  - Regional Perspectives on ARs (invited speaker, D. Pierce, Scripps)

Selected Agenda Items

- Oral Presentation Sessions:
  - ARs and Hydrologic Impacts (invited speakers: C. Konrad, USGS)
  - AR Microphysics, Aerosol, and Chemistry (invited speaker: K. Prather, UCSD)
  - Climate Variability in ARs: Past, Present, and Future (invited speakers: V. Espinoza, UC Merced; Juan Lora, UCLA)

Selected Agenda Items

- Poster Presentations: 2 separate sessions; Tuesday and Wednesday afternoon, with lightning rounds in the mornings
- Panel Discussions:
  - Advances in AR Research for Water Management (Monday)
  - Emerging Directions (Thursday)
- Breakout Sessions (Tuesday):
  - S2S Forecasting
  - AR Recon and Data Assimilation
  - AR Monograph

Registration and Other Information

- Registration includes daily fruit/coffee/snacks, lunch
- Tuesday 26 June includes an afternoon poster session followed by cocktail hour and dinner
- Selected students will be participating in an Atmospheric River Forecasting Workshop directly after the conference
- Schedule is meant to provide lots of opportunity for interaction
- Participants are expected to come from government agencies, academia, and the private sector.
- >100 abstracts were received, expecting ~100-150 attendees

Links

- Registration https://www.eventbrite.com/e/2018-international-atmospheric-rivers-conference-tickets-41119699127
- Conference Website http://cw3e.ucsd.edu/iarc2018/
  - Includes information on hotel blocks and other logistics (and links to registration page)
  - Final agenda will be posted this week (14 May 2018)

Thanks for your attention! We hope to see you in June.
Please feel free to send any questions to anna-m-wilson@ucsd.edu
or amramos@uc.fl.pt