Atmospheric River Reconnaissance Workshop

Programme

Tuesday
Agenda

The time displays according to the selected time zone.

The selected timezone is Europe/London

08:30 to 09:30	**Opening**	
08:30 to 09:15	**Arrival and registration**	
09:15 to 09:30	**Opening remarks** Video recording	Florian Pappenberger (ECMWF)
09:30 to 14:00	**Session 1: AR Recon in Water Year 2023 - Part I** Moderator: David Lavers (ECMWF)	
09:30 to 10:00	**AR Recon Motivation and Achievements** Presentation slides Video recording	Marty Ralph (CW3E)
10:00 to 10:20	**US Air Force Reserve Command Perspective on AR Recon: Past, Present, and Future** Presentation slides Video recording	Ryan Rickert (53 WRS Hurricane Hunters)
10:20 to 10:40	**AR Recon 2023 Airborne Radio Occultation (ARO) Observations in Zonal ARs and Cutoff Lows** Presentation slides Video recording	Jennifer Haase (Scripps Institution of Oceanography, UCSD)
10:40 to 11:10	**Group photo and coffee break**	
11:10 to 11:25	**Mesoscale Analysis of Landfalling Atmospheric Rivers in California during December 2022 and January 2023** Presentation slides Video recording	Brian Kawzenuk (Center for Western Weather and Water Extremes)
11:25 to 11:45	**Impacts of Long-Duration Weather Balloon Observations on North American Forecasts** Presentation slides Video recording	Todd Hutchinson (WindBorne Systems)

11:45 to 12:00	**Overview of US West Coast Observations: Radiosondes and Ground-Based Hydrometeorological Networks** Presentation slides Video recording	Anna Wilson (Scripps Institution of Oceanography, UCSD)
12:00 to 12:30	**Discussion** Video recording	
12:30 to 14:00	**Lunch break**	
14:00 to 15:30	**Session 2: AR Recon in Water Year 2023 - Part II** Moderator: Anna Wilson (Center for Western Weather and Water Extremes)	
14:00 to 14:15	**NOAA G-IV Status Review** Presentation slides Video recording	Richard Henning (NOAA Aircraft Operations Center)
14:15 to 14:30	**Diagnosing Forecast Sensitivity of Atmospheric Rivers Using an Adjoint** Presentation slides Video recording	James Doyle (Naval Research Laboratory)
14:30 to 15:00	**Application of Ensemble Sensitivity during the 2022/2023 AR-Recon Season** Presentation slides Video recording	Ryan Torn (University at Albany, SUNY)
15:00 to 15:30	**Importance of AR Recon Observations to Water Management** Presentation slides Video recording	Cary Talbot (US Army Corps of Engineers)
15:30 to 16:00	**Discussion** Video recording	
16:00 to 16:30	**Break**	
16:30 to 18:30	**Session 3: Poster session** Location: Weather Room	
16:30 to 18:30	**Reception and poster session**	

Wednesday
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09:15 to 09:30	**Welcome**	
09:20 to 09:30	**Welcome to day 2**	Marty Ralph (CW3E)
09:30 to 14:00	**Session 4: Modeling, DA and Impact Studies - Part I** Moderator: Jon Rutz (Center for Western Weather and Water Extremes)	
09:30 to 10:00	**NOAA Aircraft AR support: now and future** Presentation slides Video recording	Nancy Hann (NOAA)
10:00 to 10:30	**Unifying Targeted Aircraft Reconnaissance Observations for Improving Atmospheric River and Winter Storm Forecasts** Presentation slides Video recording	Vijay Tallapragada (NOAA/NWS/NCEP/EMC)
10:30 to 10:50	**Impact of Dropsonde Data on NCEP Operational GFS Forecasts from 2022-2023 Atmospheric River Reconnaissance** Presentation slides Video recording	Xingren Wu (Axiom at EMC/NCEP/NOAA)
10:50 to 11:05	**Coffee break**	
11:05 to 11:25	**Atmospheric River Analysis and Forecast System (AR-AFS): Atmospheric River Reconnaissance 2023 Dropsonde Data Impact Study** Presentation slides Video recording	Keqin Wu (Lynker at ECM/NCEP/NOAA)

11:25 to 11:45	**Sub-Seasonal Prediction skill of GEFSv12 for Atmospheric Rivers and Associated Precipitation Forecasts over the U.S. West Coast** Presentation slides Video recording	Murali Nageswara Rao Malasala (NOAA)
11:45 to 12:15	**Improving Sampling Strategies for Atmospheric River Reconnaissance** Presentation slides Video recording	Luca Delle Monache (CW3E/SIO/UCSD)
12:15 to 12:30	**A Review of AR RECON Modeling, DA and Impact Studies at the U. S. Naval Research Laboratory** Presentation slides Video recording	Carolyn Reynolds (Naval Research Laboratory) James Doyle (Naval Research Laboratory)
12:30 to 13:30	**Lunch break**	
13:30 to 17:00	**Session 5: Modeling, DA and Impact Studies - Part II** Moderator: Xingren Wu (NOAA/National Centers for Environmental Prediction/Environmental Modeling Center)	
13:30 to 14:00	**The Utility of a Two-dimensional Forward Model for Bending Angle Observations in Regions with Strong Horizontal Gradients**	Michael Murphy (GMAO, NASA Goddard Space Flight Center)
14:00 to 14:20	**Observing System Experiments for the 2023 AR Recon Season** Presentation slides Video recording	David Lavers (ECMWF)
14:20 to 14:30	**Special presentation** Video recording	
14:30 to 15:00	**ARO at ECMWF: current activities and future plans** Presentation slides Video recording	Sean Healy (ECMWF)
15:00 to 15:45	**ECMWF 48r1 celebration**	
15:45 to 16:30	**The World Weather Research Programme: Activities and Plans Relevant to AR Recon** Presentation slides Video recording	Chris Davis (National Center for Atmospheric Research)

16:30 to 17:00	**Ocean surface and subsurface measurements for AR Recon and subseasonal AR predictability** Presentation slides Video recording	Timothy Higgins (University of Colorado Boulder) Aneesh Subramanian (University of Colorado Boulder)
19:00 to 22:00	**Workshop dinner**	
19:00 to 22:00	**Bel and the Dragon, Reading town centre**	

Thursday
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10:00 to 10:05	**Welcome**	
10:00 to 10:05	**Welcome to day 3**	Vijay Tallapragada (NOAA/NWS/NCEP/EMC)
10:05 to 14:00	**Session 6: Scientific Advances in Physical Process Understanding** Moderator: Sam Bartlett (Center for Western Weather and Water Extremes)	
10:05 to 10:35	**Precipitation efficiencies in a climatology of extratropical cyclones** Presentation slides Video recording	Helen Dacre (University of Reading)
10:35 to 11:05	**The effects of diabatic heating in WCBs on jet stream perturbations and predictability** Presentation slides Video recording	John Methven (University of Reading)
11:05 to 11:35	**The North Atlantic Waveguide, Dry Intrusion, and Downstream Impact Campaign (NAWDIC)** Presentation slides Video recording	Christian Grams (IMK-TRO, Karlsruhe Institute of Technology)
11:35 to 12:00	**Aircraft dropsonde observation of atmospheric rivers associated with tropical cyclones in the western North Pacific** Presentation slides Video recording	Kazuhisa Tsuboki (Nagoya University)
12:00 to 12:30	**Discussion**	
12:30 to 14:00	**Lunch break**	
14:00 to 15:30	**Session 7: The Future of AR Recon** Moderator: David Lavers (ECMWF)	

14:00 to 15:45	**Panel discussion on new directions and closing remarks** • Marty Ralph, Center for Western Weather and Water Extremes • Vijay Tallapragada NOAA/National Centers for Environmental Prediction/Environmental Modeling Center • Florian Pappenberger, European Centre for Medium-Range Weather Forecasts Video recording	

NAWDIC Workshop 2023
Agenda

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09:00 to 15:45	**NAWDIC Workshop 2023** Moderator: David Lavers (ECMWF)	
09:00 to 09:20	**NAWDIC-HALO and NAWDIC-KITcube: Seamless observation strategy from synoptic- to micro-scale** Presentation slides Video recording	Christian Grams (IMK-TRO, Karlsruhe Institute of Technology)
09:20 to 09:40	**AR Recon and potential collaborations with NAWDIC** Presentation slides Video recording	Marty Ralph (CW3E)
09:40 to 10:00	**CAPRI - The UK contribution to NAWDIC** Presentation slides Video recording	John Methven (University of Reading)
10:00 to 10:10	**French contribution to ground-and airborne measurements of the lower troposphere during NAWDIC** Presentation slides Video recording	Julian Quinting (Karlsruhe Institute of Technology)
10:10 to 10:30	**U.S. plans for contributions to NAWDIC** Presentation slides Video recording	Steven Cavallo (University of Oklahoma)
10:30 to 10:50	**Hydrological Perspective** Presentation slides Video recording	Andrew Wade (University of Reading)
10:50 to 11:20	**Coffee break**	
11:20 to 12:30	**Breakout Groups (Assigned)** • Group 1: Atmospheric Rivers Moderator: Julian Quinting, Rapporteur: Jim Doyle • Group 2: Dry Intrusions Moderator: Christian Grams, Rapporteur: Anna Wilson	

12:30 to 14:00	**Lunch break**	
14:00 to 15:20	**Case Study**	
15:20 to 15:45	**Breakout Groups Report Out and Closing Discussion** Christian Grams (IMK-TRO, Karlsruhe Institute of Technology)	