Version 1 June 2011

CalWater Science Workshop

8-10 June, 2011
Scripps Institution of Oceanography (SIO)
La Jolla, California

Organizers: Marty Ralph (NOAA), Dan Cayan (USGS/SIO), Kim Prather (UCSD), Guido Franco (CEC), and Joe O'Hagan (CEC)

Attendees: CalWater Science Team, Observing System Leads and Managers

Workshop purpose

After a successful field season with specialized aircraft, scanning radar and other sensors deployed, this Workshop will bring the CalWater science team together as a next step in the analysis phase of CalWater. The focus will be on summarizing the data collection efforts, identifying promising events for deeper analysis, considering modeling efforts and exploring possible collaborations. Both the Atmospheric River (AR) and Aerosol-Precipitation (AP) topics are to be covered. The primary outcomes of the Workshop are:

- identification of key cases for further analysis and modeling,
- development of collaborations to pursue CalWater's science objectives,
- ideas for submissions to a proposed AGU special session focused on CalWater and
- possibilities for potential formal science papers.

Presentations include:

1) data/case overviews from major platforms or for major science topics
2) results of observational or modeling analyses from previous field seasons
3) modeling and diagnostic results and/or future plans for CalWater modeling or diagnostic studies
4) preliminary diagnostic or phenomenological summaries from this field season and or plans for future CalWater analyses
5) recommendations for case studies or climatological studies from this field season or past field seasons
6) relevant activities from closely related projects/programs, especially HMT and WISPAR

Broad agenda:

Wed 8 June, 1 PM PT: Workshop starts
Wed 8 June, 2 PM to Thur 9 June, 12 Noon: Atmospheric river focus
Thur 9 June 1 PM - Fri 10 June, Noon: Aerosol-precipitation focus
Fri 10 June, 1 - 3 PM: Synthesis and identification of major case studies, and collaborations
Fri 10 June, 3 PM: Workshop adjourns

Time (PT)	Wednesday 8 June – CalWater Workshop Day 1	Presenter
1:00 – 1:15	1. Welcome, Introductions and Workshop Purpose	TBD
1:15 – 1:30	2. Review of CalWater Science Objectives	TBD
1:30 – 1:45	3. Overview of AR and SBJ aspects of 2009-2011 field data	Ralph
1:45 – 2:00	4. Overview of AP aspects of 2009-2011 field data	Cazorla
2:00 – 2:15	5. Discussion	
	Atmospheric River Science Session	
2:15 – 3:00	6. Overview of HMT-West/CalWater 2011 IOPs	Kingsmill
3:00 – 3:15	7. Preliminary Analysis of Rainfall Process Partitioning Results for the Two CalWater Field Seasons	White
3:15 – 3:30	8. Does the Madden-Julian Oscillation Influence Wintertime Atmospheric Rivers and Snowpack in the Sierra Nevada?	Guan
3:30 – 3:45	**Break**	
3:45 – 4:00	9. Initial Steps Toward Understanding Interactions between the Sierra Barrier Jet and Landfalling Atmospheric Rivers	Neiman
4:15 – 4:30	10. Representation of the Sierra Barrier Jet in 10 years of a high-resolution dynamical reanalysis downscaling	Hughes
4:30 – 4:45	11. Three-dimensional kinematic structure and evolution of the Sierra Barrier Jet	Kingsmill
4:45 – 5:30	12. Discussion	All
5:30	**Adjourn for the day**	

Version 1 June 2011

Time (PT)	Thursday 9 June – CalWater Workshop Day 2	Presenter
8:30 – 8:45	1. A 21St Century Observing Network for California - a Joint DWR, NOAA, SIO Project Including Monitoring of Atmospheric Rivers	Dettinger
8:45 – 9:00	2. The Winter Storms and Pacific Atmospheric Rivers Experiment: Observations and Implications for CalWater	Wick
9:00 – 9:15	3. Potential for Retrieving Vertically Resolved Properties of Atmospheric Rivers Using CloudSat W-band Spaceborne Radar	Matrosov
9:15 – 9:30	4. Snow accumulation and melt in the central Sierra Nevada during 2010-2011	Cayan
9:30 – 9:45	5. TBD	Molotch
9:45 – 10:00	6. Spatio-temporal patterns of precipitation and winds in CA	Kingsmill
10:00 – 10:30	**Break**	
10:30 – 10:45	7. Forecasting Atmospheric Rivers with a Multiscale Modeling Framework	Helly
10:45 – 11:00	8. Development and Validation of an Automated, Objective Tool for Atmospheric River Identification and Characterization	Wick
11:00 – 11:15	9. Impact of Potential Vorticity intrusions on the Precipitation and Atmospheric Rivers over Pacific - North America during YOTC	Ryoo
11:15 – 12:00	10. AR discussion	All
12:00 – 1:15	**Lunch**	
	Aerosol Precipitation science session	
1:15 – 1:30	11. Overview of aircraft observations during 2011	Prather
1:30 – 1:45	12. CalWater Aircraft Operations Data Summary	Comstock
1:45 – 2:00	13. Airborne ice nuclei measurements during CalWater	Sullivan
2:00 – 2:15	14. Modeling of aerosol-cloud interactions using data from the 2011 CalWater field campaign	Leung

	Thursday 9 June – CalWater Workshop Day 2 cont.	
2:15 – 2:30	**Break**	Presenter
2:30 – 2:45	15. Aerosol impacts on cloud microstructure and precipitation: CalWater preliminary findings and comparison to SUPRECIP	Rosenfeld
2:45 – 3:00	16. Satellite measurements during CalWater	Minnis
3:00 – 3:15	17. Preliminary study of cloud properties and aerosol mixing state during the CalWater flights	Cazorla
3:15 – 3:30	18. Ambient Aerosol Observations of Aerosol Sources at Sugar Pine Dam through 3 Years of CalWater	Collins
4:15 – 4:30	19. Chemical Composition of Precipitation during 2009-2011	Creamean
4:15 – 4:30	20. What might variations in stable hydrogen and oxygen isotopic abundances of Northern California precipitation tell us?	Coplen
4:30 – 4:45	**Break**	
4:45 – 5:30	21. Discussion	
5:30	**Adjourn for the Day**	

Version 1 June 2011

Time	Friday 10 June – CalWater Workshop Day 3	Presenter
8:30 – 8:45	1. Recent Aircraft Observations in the Remote Pacific Relevant to CalWater Science	Spackman
8:45 – 9:00	2. Laboratory and Field Experiments during CalWater: Impact of Black Carbon on Snow Albedo	Hadley
9:00 – 9:15	3. Aerosol and CCN chemistry using microchips	Noblitt
9:15 – 9:30	4. CCN measurements at Sugar Pine	Corrigan
9:30 – 9:45	5. Aerosol measurements at Sugar Pine Dam	Cliff
9:45 – 10:00	6. Possible case studies from 2011	
10:00 – 10:30	**Break**	
10:30 – 12:00	7. Aerosol Precipitation science discussion	All
12:00 – 1:15	**Lunch**	
1:15 – 2:30	8. Synthesis and identification of major case studies, collaborations, and next steps	Workshop Organizers
2:30 – 3:00	9. Wrap up	
3:00	**Workshop adjourns**	