



International Network for Alpine Research Catchment Hydrology (INARCH)

2023 Annual INARCH Workshop

Stanley, Idaho, USA

October 9–11, 2023

Local Hosts: Professor James McNamara, Boise State University, and Dr. Andrew Hedrick, USDA Agricultural Research Service

Workshop Agenda

Sunday, October 8		
Participants can meet in Boise, Idaho. Recommended hotel is the Inn at 500 Capitol.		
After 6:00 PM	Informal gathering @ The Handlebar, 1519 W Main St Boise, https://downtownboise.org/go/the-handlebar-boise	
Monday, October 9		
8:30 AM	Meet at The Inn at 500 and departure from Boise	
9:30 AM	Morning tour to a local experimental watershed (Dry Creek)	
12:00 PM	Lunch	
1:00 PM	Afternoon drive to Stanley, Idaho	
4:30 PM	Arrival, check-in at the Mountain Village Resort	
6:00 PM	Dinner	
7:00 PM	Introduction to INARCH and Update on COPE – John Pomeroy, Ignacio López Moreno	
Tuesday, October 10		
8:00 AM	Breakfast	
Session 1 (Chair: Jim McNamara)		
Observations and Measurement Techniques		
9:00 AM	Jim McNamara	Welcome, Logistics,
9:05 AM	Andrew Hedrick	Transitioning intensive snow surveys from probing to droning improves spatial representation of snow processes and reduces risk for field crews
9:20 AM	Ethan Gutmann	Sublimation and blowing snow measurements in the East River Basin
9:35 AM	Eric Sproles	In-scaling snow measurements in mountainous terrain
9:50 AM	Tao Che	Snow cover and frozen ground observations in Heihe River basin, Qilian mountain
10:05 AM	Juan Ignacio López Moreno	Monitoring the vanishing of Pyrenean glaciers
10:20 AM	Discussion	

10:35 AM	Break and Refreshments	
Session 2 (Chair: Ernesto Trujillo-Gomez)		
Observations and Measurement Techniques		
11:10 AM	Anna Bergstrom	Glacier mass loss and altered precipitation regimes impact the water balance and reveal the potential importance of groundwater - an intro to the Wolverine Glacier watershed, south central Alaska
11:25 AM	John Pomeroy	COPE Monitoring in the Canadian Rockies Hydrological Observatory
11:40 AM	Maggi Kraft	Streamflow transitions to ET as snow transitions to rain in the semiarid mountain west
11:55 AM	Caroline Aubry-Wake	Cryosphere-groundwater-surface water interaction in the Langtang basin
12:10 PM	Jan Magnusson	Current advances of high-resolution snow simulations for the Dischma catchment, Switzerland
12:25	Sean Carey	New insights of water sources and pathways across a latitudinal and altitudinal gradient, Yukon, Canada
12:40 PM	Discussion	
1:00 PM	Lunch Break	
Session 3 (Chair: James McPhee)		
Observations and Modelling		
2:00 PM	Dhiraj Pradhananga	CRHM Modelling of the Nepal Himalayas
2:15 PM	Zhihua He	Quantifying contributions of runoff components to streamflow in a Central Asian mountain basin
2:30 PM	Logan Fang	Hydrological Modelling in Canadian Rockies headwater research basins
2:45 PM	Ernesto Trujillo	Precipitation Rescaling Approach to Represent Snow Distribution in the iSnobal model and its Effects on the Snowpack Mass and Energy Balances
3:00 PM	Rosemary Carroll	Groundwater destabilization and associated streamflow declines – Implications of warming in seasonally snow-dominated mountain basins of the Upper Colorado River
3:15 PM	Alejandro Flores	From Snowflake to Snowpack: Cloud Microphysical Controls on Water Storage and Retention in Alpine Watersheds
3:30 PM	Discussion	
3:50 PM	Break and Refreshments	
Session 4 (Chair: Juan Ignacio López Moreno)		
Observations and Modelling		
4:00 PM	Sebastián Krogh	Preliminary results from the Río Renegado catchment: fieldwork and modeling activities
4:15 PM	Chris Marsh	Forecasting seasonal snow with million km ² large-extent snowdrift permitting simulations
4:30 PM	Tim Link	Snow refugia in complex terrain and Snobal simulations of snow energetics in a refugium
4:45 PM	James McPhee	Updates on regional scale near-real time SWE modeling and linkages with experimental catchments

5:00 PM	Alex Cebulski	The influence of climate and forest structure on snow interception parameterization performance: insights for improved process representation in mountain forests
5:15 PM	Discussion	
6:00 PM	Dinner and Socializing	

Wednesday, October 11		
8:00 AM	Breakfast	
Session 5 (Chair: Andrew Hedrick)		
Zoom session for remote Common Observation Period Experiment (COPE) updates		
9:00 AM	James McNamara	Opening and day-2 logistics
9:05 AM	Yaoming Ma	Comprehensive study of heat and water exchange process and its climatic effects over the Third Pole
9:20 AM	Zhongbo Yu	Experimental observation of hydrological processes in the Tibetan Plateau
9:35 AM	Ulrich Strasser	News from the Rofental (Austria)
9:50 AM	Rainer Prinz	Advances in glacio-meteorological monitoring - examples from Hintereisferner, Austria
10:05 AM	Franziska Koch	Update on cryo-hydro-gravimetric measurements and other activities at Mt. Zugspitze, Germany
10:20 AM	Simon Gascoin	Update on Sentinel-2 and Pléiades processing for INARCH sites
10:35 AM	Discussion	
10:45 AM	Break	
Session 6 (Chair: John Pomeroy)		
Other COPE updates, Wrap-up, Closing Statements		
11:10 AM	Chris DeBeer	Further updates and status of COPE
11:20 AM	Stephen O’Hearn	Updates to INARCH portion of GWFNet catalogue
11:35 AM	Discussion <ul style="list-style-type: none"> • What models are we running, what questions are we addressing, what is the timeframe? • Consider a special issue or book? Refine our science questions? 	
12:00 PM	Break	
12:15 PM	Synthesis and wrap-up, workshop closing statements	
12:30 PM	Depart for lunch and recreation at Redfish Lake Lodge	
3:00 PM	Drive to Boise, return by 6:00 pm	

Thursday, October 12		
8 AM – 6 PM	Optional full-day Reynolds Creek Experimental Watershed in the Owyhee Mountains	