



## International Network for Alpine Research Catchment Hydrology (INARCH)

### 2024 Annual INARCH Workshop

Lanzhou and Zhangye, China

October 14–18, 2024

Local Hosts: Dr. Tao Che, Dr. Shichang Kang, and Dr. Xin Li, Chinese Academy of Sciences

#### Workshop Agenda

<b>Monday, October 14</b>		<b>Arrival in Lanzhou</b>
Arrival at Lanzhou City. Workshop participants will be greeted at the airport (also if they arrive on October 13) and driven to the Starway Hotel.		
6:00 PM	Welcome dinner at 6 PM at the Starway Hotel	
<b>Tuesday, October 15</b>		<b>Meet in Lanzhou and Travel to Zhangye</b>
7:30–8:30 AM	Breakfast at the Starway Hotel	
8:30 AM	Travel to the Institute of CAS. It is about a 10-minute walk and there will be guides to take us there, meeting in the lobby. Leave your belongings in your hotel room as we will return here for lunch and to check out of rooms prior to departing for Zhangye City.	
<b>Session 1 (Chair: Tao Che)</b>		
<b>INARCH 2024 Annual Workshop Introduction</b>		
9:00 AM	Welcome and introduction on behalf of Institute of CAS, overview of science and facilities at CAS	
	Tao Che	Summary of workshop plans and activities
9:20 AM	John Pomeroy, Ignacio López Moreno	Introduction and current status of INARCH
9:50 AM	James McNamara	Hydrologic observations and modeling in the rain-snow transition zone; Dry Creek and Reynolds Creek Experimental Watershed, Idaho, USA
10:10 AM	Ethan Gutmann	Snow and the diurnal cycles of mountain valley circulation
10:30 AM	Zhongbo Yu	Challenge and adaptation in water security and sustainability on the Tibetan Plateau
10:50 AM	James McPhee	The International Year for Glacier's Preservation – description and opportunities for engagement by the INARCH community
11:10 AM	Break and short tour of CAS facilities	
11:45	Return to Starway Hotel for lunch and checkout	
1:00 PM	travelling to Zhangye City (the Heihe field station) by bus, a national park view (depends on weather). The duration of travel is about 6 hours, and we stop at some rest areas.	
8:00 PM	Arrival and dinner at Zhangye Hotel	

<b>Wednesday, October 16</b>		<b>Meeting in Zhangye</b>
7:30–9:00 AM	Breakfast at the hotel	
<b>Session 2 (Chair: Ignacio López Moreno)</b>		
<b>Topic: Observations, remote sensing, and field experiments</b>		
9:00 AM	Lei Wang	Cryosphere–hydrometeorology observations for a water tower unit on the Tibetan Plateau using the BeiDou-3 navigation satellite system
9:15 AM	Fan Zhang	Variation of riverine sediment transport in river basins on the Tibetan Plateau
9:30 AM	Rensheng Chen	Basic observation of hydrology in the Qilian Mountains
9:45 AM	Duanne White	Field investigations of snow ripening processes in a marginal snowpack, Australia
10:00 AM	Celine Anderson	Investigating hillslope hydrological processes in the Snowy Mountains, Australia using physical, chemical, and isotopic data
<b>Poster Lightning Talks (2-min summary of each poster)</b>		
10:15 AM	Jiu Chen	Glacier cover mapping by using GaoFen-1 optical imagery and a machine learning algorithm
10:17 AM	Liyun Dai	Topography effects on microwave emission transmission of snowpack and snow depth retrieval
10:19 AM	Xuemei Li	Shift of precipitation from snowfall to rainfall and its impact
10:21 AM	Guigang Wang	Mapping snow cover frequency at 30 m for studying seasonal variations and topographic controls on the Tibetan Plateau
10:23 AM	Junshui Long	Hydrological Projections in the Third Pole Using Artificial Intelligence and an Observation - Constrained Cryosphere - Hydrology Model
10:25 AM	Xinyue Zhong	Comparison of bulk snow density measurements using different methods
10:27 AM	Break and refreshments and poster viewing	
<b>Session 3 (Chair: James McPhee)</b>		
<b>Topic: Observations, remote sensing, and field experiments</b>		
11:00 AM	Ignacio López Moreno	Experiments for assessing the impact of impurities on snow on melting rates
11:15 AM	Francisco Rojas	Spatial and temporal variability of marginal snowpack over a small shrub-covered catchment in the Pyrenees
11:30 AM	Marc Oliva	Permafrost in the Pyrenees: the changing mountain
11:45 AM	Rafael Pimentel	Monitoring wet snow dynamics in Mediterranean mountains: Implication for water resources management
12:00 PM	Zhijia He	The value of water stable isotope data for improving process understanding in a central Asian high mountain basin
<b>Poster Lightning Talks (2-min summary of each poster)</b>		
12:15 PM	Ana Andreu	The Guadalfeo monitoring network: a Mediterranean mountain basin

12:17 PM	Weiqliang Ma	Observational studies of water surface evaporation on inland lake over the classical Tibetan Plateau
12:19 PM	Yazhen Li	Interannual changes in snowmelt water resources of major river basins on the Tibetan Plateau
12:21 PM	Yueling Shi	Investigating the dynamics of alpine glaciers from ascending and descending satellite SAR observations
12:23 PM	Hu Liu	The importance of melting water in the Third Pole transboundary floods
12:25 PM	Lunch Break and Poster Viewing	
<b>Session 4 (Chair: James McNamara)</b>		
<b>Topic: Observations, remote sensing, and field experiments</b>		
2:00 PM	Timothy Link	Watershed hydrology changes across scales resulting from land cover and climate changes spanning the rain-snow transition zone
2:15 PM	Ethan Gutmann	Downscaled climate projections predict decreases in lee-side precipitation and decreases in rain-shadow strength
2:30 PM	John Pomeroy	Recent extremes and deglaciation at the Canadian Rockies Hydrological Observatory
2:45 PM	Tao Che	The snow survey in China
3:00 PM	James McPhee	Relative influence of wind and avalanche redistribution at the mountain range scale in the South American Andes
3:15 PM	Alex Cebulski	Snow interception relationships with meteorology and canopy structure in a subalpine forest
3:30 PM	Break and poster viewing	
4:00 PM	A national park view and tour of the Heihe field station	
7:30 PM	Dinner at the field station or the Zhangye Hotel	

<b>Thursday, October 17</b>		<b>Field Trip to Frozen Ground and Snow Observation Sites</b>
7:30–9:00 AM	Breakfast at the hotel	
Morning	Travelling to the Qilian mountain, visiting a frozen ground observation site (A'rou) and snow observation site (Yakou)	
Evening	Return to Zhangye Hotel	
	Dinner at the Zhangye Hotel	

<b>Friday, October 18</b>		<b>Workshop Closing in Zhangye and Return to Lanzhou</b>
7:30–9:00 AM	Breakfast at the hotel	
<b>Session 5 (Chair: Ethan Gutmann)</b>		
<b>Topic: Model development, applications, and prediction</b>		
9:00 AM	Yaoming Ma	The energy and water exchange and its effect on the weather and climate over the Tibetan Plateau and surrounding regions
9:15 AM	Binbin Wang	The lake-atmosphere turbulent flux simulation and its influences on the basin climate
9:30 AM	John Pomeroy	Advances in CRHM, CHM, MESH and application to diagnose changing hydrology from small to continental scales

9:45 AM	Dhiraj Pradhananga	Modelling Langtang River Basin with future climates
10:00 AM	Hongyi Li	Monitoring and modeling snowmelt water resources in complex high-mountain terrain
10:15 AM	John Pomeroy	Diagnosing the glacier hydrology of the Ala Archa Basin, Kyrgyzstan, with MESH
10:30 AM	Break and poster viewing	
<b>Session 6 (Chair: John Pomeroy)</b>		
<b>Topic: INARCH Common Observing Period Experiment (COPE)</b>		
11:00 AM	Chris DeBeer	Overview of COPE status and activities
11:10 AM	Tim Link	Introduction to the Digital Water Globe
11:15 AM	Open discussion on COPE activities and plans	
<b>Workshop Closing (Chairs: John Pomeroy, Ignacio López Moreno)</b>		
<b>Open discussion and drafting of INARCH workshop statement</b>		
11:30 AM	John Pomeroy, Ignacio López Moreno	INARCH Progress and Statement
12:00 PM	Lunch	
1:00 PM	Travelling back to Lanzhou City	
Evening	Arrive at Starway Hotel and dinner	