

RONALD AND MAXINE LINDE CENTER FOR GLOBAL ENVIRONMENTAL SCIENCE

Monsoons: Past, Present and Future

**May 18-22, 2015
Overview Schedule**

Monday, May 18, 2015

Short Course

Sharp Lecture Hall - Arms Building, California Institute of Technology

Time	Event	Speaker
8:15 - 8:45	Coffee and Refreshments	
8:45 - 9:00	Linde Center Welcome	Paul Wennberg, Simona Bordoni
9:00 - 9:45	A Review of Energetic and Dynamic Theories of Monsoons	William Boos
9:45 - 10:30	The Growth of the Tibetan Plateau and its Possible Effects on Evolving Asian Climate Over the Past 15 Million Years	Peter Molnar
10:30 - 11:00	Break	
11:00 - 11:45	Paleoclimate Perspectives on the Afro-Asian Monsoon During the Late Quaternary	Jessica Tierney
11:45 - 12:30	Anthropogenic Changes to Tropical and Subtropical Precipitation and Circulation	David Neelin
12:30	Short Course Ends	

**Invitation Only Workshop Begins
Keck Center - Think Tank, Room 155**

Past and Future Precipitation Changes

12:30 - 1:00	Walk to Keck Center /Registration	
1:00 -2:00	Lunch (provided for meeting attendees)	
2:00 - 3:00	Introductions, Meeting Overview, Plenary Discussion	Michele Judd, Simona Bordoni, Tim Merlis
3:00 - 3:25	Tracing Tropical Precipitation Changes in Past Climates: from Individual Lake Basins to the Zonal Mean	David McGee
3:25 - 3:50	Orbital to Millennial Scale Variability in the Southeast Asian Monsoon Since the Last Glacial Period	Kathleen Johnson
3:50 - 4:10	Coffee and Refreshments	
4:10 - 4:35	Future Changes in the Annual Cycle of Monsoons and the ITCZ	Michela Biasutti
4:35 - 5:00	Robust Patterns and Uncertainties of Tropical Rainfall and Circulation Projections	Shang-Ping Xie
5:00 - 5:30	Plenary Discussion: Key Open Science Questions at the Paleo/Dynamic Interface	
5:30	Walk to the Athenaeum for a 6:00 PM dinner	

Tuesday, May 19, 2015
Keck Center - Think Tank, Room 155

Paleoclimate

Time	Event	Speaker
8:15 - 8:45	Coffee and Refreshments	
8:45 - 9:00	Logistics, Goals for the Day	Michele Judd, Simona Bordoni, Tim Merlis
9:00 - 9:25	Neogene Monsoons: Leaf Wax Insights into Precipitation and Vegetation Change	Sarah Feakins
9:25 - 9:50	High and Low-Latitude Influences on Deglacial Shifts of the Atlantic ITCZ	Peter deMenocal
9:50 - 10:15	The Record of Precipitation Variability in the Western Pacific Warm Pool over Glacial Cycles as Measure in Stalagmites from Borneo	Jess Adkins
10:15 - 10:45	Break	
10:45 - 11:10	Spatiotemporal Evolution of the African Monsoon	Jessica Tierney
11:10 - 11:35	Glacier Fluctuations in the Monsoonal Himalaya During the Pre-Industrial Holocene: Identifying Roles for the Asian Monsoon and Tropical Atmospheric Temperature in Himalayan Mass Balance	Aaron Putnam
11:35 - 12:00	Role of Seasonal Transitions and Westerly Jets in the East Asian Paleoclimate	John Chiang
12:00 - 12:30	Plenary Discussion: Glacial/Interglacial vs Precession	
12:30 - 2:00	Lunch (Atheneum)	
<i>Aerosols</i>		
2:00 - 2:25	Tropical Circulation Changes Across Forcing Agents	Tim Merlis
2:25 - 2:50	Modeling Aerosol Effects on Monsoon Circulation and Precipitation: from Cloud Resolving to Global Simulations	Ruby Leung
2:50 - 3:15	Global Precipitation Changes Shaped by Natural and Anthropogenic Forcing	Mark Cane
3:15 - 3:40	AMOC Changes, Past, Present and Future, with Comments on Monsoon Responses	Ka Kit Tung
4:00 - 6:00	Break & Poster Session	
6:30	Optional No-Host Dinner in Pasadena	

Wednesday, May 20, 2015 Keck Center - Think Tank, Room 155		
<i>ITCZ</i>		
Time	Event	Speaker
8:15 - 8:45	Coffee and Refreshments	
8:45 - 9:00	Logistics, Goals for the Day	Michele Judd, Simona Bordoni, Tim Merlis
9:00 - 9:25	The Impact of Vertical Motion Structure on the Amplification of Tropical Convection	Larissa Back
9:25 - 9:50	How far can the ITCZ go? Lessons from Earth, Titan and everything in-between	Jonathan Mitchell
9:50 - 10:15	Hadley Circulation, Cloud Feedback and Climate Sensitivity	Hui Su
10:15 - 10:45	Break	
10:45 - 11:10	Isentropic Flows and Monsoonal Circulations	Olivier Pauluis
11:10 - 11:35	Dynamics and Thermodynamic Controls on the Hadley Circulation	Martin Singh
11:35 - 12:30	Breakout groups: Frontiers in Dynamics, Simulation, Observations	
12:30 - 2:00	Lunch at Keck Center	
2:00 - 2:45	Report out from breakout groups	
<i>Convection/monsoon variability on shorter time scales</i>		
2:45 - 3:10	Modeling Interactions Between the Quasi-Geostrophic Vertical Motion and Convection in a Single Column	Ji Nie
3:10 - 3:35	Towards a New Understanding of Monsoon Depressions	Bill Boos
3:35 - 4:00	Walk to Sharp Lecture Hall	
Environmental Science and Engineering Lecture Sharp Lecture Hall - Arms Building		
4:00 - 5:00	Climate and Conflict (ESE Lecture)	Mark Cane
5:15 - 6:00	ESE Reception	
6:30	Dinner at the Athenaeum	

Thursday, May 21, 2015
Keck Center - Think Tank, Room 155

Land and Land-Sea Contrast

Time	Event	Speaker
8:15 - 8:45	Coffee and Refreshments	
8:45 - 9:00	Logistics, Goals for the Day	Michele Judd, Simona Bordoni, Tim Merlis
9:00 - 9:25	Dynamical and Radiative Influences on the Sahell Rainfall Response to Uniform Ocean Warming	Spencer Hill
9:25 - 9:50	Radiative-Convective Equilibrium over Islands	Tim Cronin
9:50 - 10:15	Monsoons on Idealized Continents	Simona Bordoni
10:15 - 10:45	Break	
10:45 - 11:10	And Now for Something Completely Different: Causes of the California Drought with an Aside on the Paleo-North American Monsoon	Richard Seager
11:10 - 12:30	Discussion: Where Do We Go from Here? Collaborations needed to make progress	
12:30 - 2:00	Lunch on your own	
<i>Land and Land-Sea Contrast</i>		
2:00 - 2:25	The Role of Land-Sea Contrast in the Circulation Response to Solar Insolation and Global Warming	Tiffany Shaw
2:25 - 2:50	The Role of Soil Moisture in the West African Monsoon	Ben Lintner
2:50 - 3:15	Will Forests Grow Back After Deforestation?	Jung-Eun Lee
3:15 - 3:40	Status on Satellite Remote Sensing of Water Vapor Isotopologues	Christian Frankenberg
3:40 - 4:10	Break	
4:10 - 5:30	Discussion: Isotope Measurements and Isotope Enabled Modeling	
6:00	Dinner	

Friday, May 22, 2015 Keck Center - Think Tank, Room 155		
<i>Summarize Workshop Outcomes</i>		
Time	Event	Speaker
8:15 - 8:45	Coffee and Refreshments	
8:45 - 9:00	Logistics, Goals for the Day	Michele Judd, Simona Bordini, Tim Merlis
9:00 - 10:30	Summarize Main Workshop Outcomes	All
10:30 - 11:00	Break	
11:00 - 12:00	Outline Final Report/Paper and Determine Writing Assignments	All
12:00 - 12:30	Discussion: Advocacy Plan for Ideas Generated in this Workshop	
12:30 - 2:00	End of Formal Workshop - Lunch in Institute	
<i>Optional Writing Session</i>		
2:00 - 4:00	Optional Writing Session	All
4:00	Close of Workshop	