

U.S. CLIVAR Workshop:
Analyses, Dynamics, and Modeling of Large Scale Meteorological Patterns
Associated with Extreme Temperature and Precipitation Events

Lawrence Berkeley National Laboratory, Berkeley, CA
August 20-22, 2013

AGENDA

20 August - Tuesday

8:00 Continental Breakfast

8:30 **Welcome & Introductions**

Session 1: Data Talks

8:40 **Kenneth Kunkel**, NOAA CICS-NC/North Carolina State
"Meteorological Causes of Observed Extreme Precipitation Trends in the U.S."

9:10 **Pavel Groisman**, UCAR at NOAA NCDC
"The impact of data paucity and handling techniques on intense precipitation analyses"

9:40 **Pall Pardeep**, Lawrence Berkeley National Laboratory
"Using large climate data sets for Probabilistic Weather-Event Attribution"

10:10 Coffee Break

10:30 **Data Breakout Sessions** (2 parallel)

Session 2: Statistics Talks

11:30 **Richard Grotjahn**, University of California, Davis
"The why, how, and what of large scale meteorological pattern"

12:00 **Richard Katz**, NCAR
"Statistical Methods for Relating Temperature Extremes to Large-Scale Meteorological Patterns"

12:30 Catered Lunch

Session 2: Statistics Talks cont.

- 1:30 **Francis Zwiers**, Pacific Climate Impacts Consortium
"Applications of extreme value theory in climate science"

- 2:00 **Robert Black**, Georgia Institute of Technology
"Boreal Cool Season Temperature Regimes: Recent Trends and Low Frequency Mode Modulation"

- 2:30 **Christopher Paciorek**, University of California, Berkeley
"Analyzing trends and patterns in extreme precipitation in observations and models using statistical extreme value analysis"

- 3:00 **Sahsa Gershunov**, University of California, San Diego/Scripps
"Diagnosing probability models for observed daily precipitation extremes"

- 3:30 **Poster Session (Data and Statistics)** with Coffee Break

- 4:30 **Statistics Breakout Sessions** (2 parallel)

- 5:30 End of Day 1

- 6:30 Collaborative Discussion Time at Hotel Shattuck Plaza

21 August - Wednesday

8:00 Continental Breakfast

Session 3: Synoptics/Dynamics Talks

8:30 **Steven Feldstein**, The Pennsylvania State University
"A methodology for examining the relationship between teleconnections and extreme precipitation"

9:00 **Bill Gutowski**, Iowa State University
"Understanding Synoptic Weather Yielding Extreme Daily Precipitation"

9:30 **Shawn Milrad**, Embry-Riddle Aeronautical University
"On the synoptic-scale mechanisms of extreme precipitation events: The role of the anticyclone and a dynamically based event identification method"

10:00 **Russ Schumacher**, Colorado State University
"Wet weeks in the warm season: Patterns and processes supporting widespread multi-day heavy rainfall episodes"

10:30 Coffee break

Session 3: Synoptics/Dynamics Talks cont.

10:50 **Steve Vavrus**, University of Wisconsin
"Relating Extreme Weather Events to Large-Scale Meteorological Patterns: Is the Glass Half Full or Half Empty?"

11:20 **Randall Dole**, NOAA ESRL PSD
"The Making of An Extreme Event: Putting the Pieces Together"

11:50 **Synoptics/Dynamics Breakout Sessions** (2 parallel)

12:50 Catered Lunch

Session 4: Modeling Talks

- 2:00 **Noah Diffenbaugh**, Stanford University
"Robust increases in severe thunderstorm environments in response to greenhouse forcing"
- 2:30 **Anthony Broccoli**, Rutgers University
"Observed and Model Simulated Atmospheric Circulation Patterns Associated with Extreme Temperature Days over North America"
- 3:00 **Gary Lackmann**, North Carolina State University
"Climate Change and Mesoscale and Synoptic-Scale Precipitation Events" (by phone)
- 3:30 **Poster Session** (**Synoptics/Dynamics** and **Modeling**) with Coffee Break
- 4:30 **Session 4: Modeling Breakout Sessions** (2 parallel)
- 5:30 End of Day 2
- 6:00 Extremes WG Meeting at Hotel Shattuck Plaza (by invitation)

22 August - Thursday

- 8:00 Continental Breakfast
- 8:30 **Reports and Discussion from Breakouts Sessions** (45 min/each)
Data
Statistics
- 10:00 Coffee Break
- 10:30 **Reports and Discussion from Breakouts Sessions** cont. (45 min/each)
Synoptics/Dynamics
Modeling
- 12:00 **Meeting Wrap-up**
- 12:30 Adjourn

Poster Session (**Data** and **Statistics**) Tuesday, 8/20 @ 3:30

Data:

Rick Lader, University of Alaska Fairbanks

"Evaluating daily reanalysis temperature and precipitation for Alaska"

Michael Wehner, Lawrence Berkeley National Laboratory/University of California, Berkeley

"Extreme Event Attribution"

Statistics:

Elizabeth Cassano, Cooperative Institute for Research in Environmental Sciences

"Analysis of synoptic forcing for widespread surface temperature extremes across Alaska"

Brandon Fisel, Iowa State University

"Multi-Regime States and Extreme Behavior of Arctic Atmospheric Circulation"

Justin Glisan, Iowa State University

"A SOM-based approach for analyzing daily precipitation extremes over the North American Arctic"

Soyoung Jeon, Lawrence Berkeley National Laboratory

"Analysis of Spatial Dependence Patterns in Precipitation Extremes"

Megan Kirchmeier, University of Wisconsin-Madison, Atmospheric and Oceanic Sciences, Center for Climatic Research

"The use of probabilistic downscaling in relating local-scale extreme events to large-scale meteorological conditions"

Ken-Chung Ko, National Kaohsiung Normal University

"Circulation patterns for southern Taiwan's summer monsoon rainfall during July to September"

Yun-Young Lee, Georgia Institute of Technology

"Extreme Temperature Regimes in association with two types of El Niño"

Bo Madsen, University of Copenhagen

"Comparison of Relationship between Weather Regimes and Precipitation in Observations and Models"

Diandong Ren, Curtin University

"Extreme precipitation events in AR5 models and implications for flash floods"

Deepti Singh, Stanford University

"Precipitation extremes over the continental United States in a transient, high-resolution, ensemble climate model experiment"

Poster Session (**Synoptics/Dynamics** and **Modeling**) Wednesday, 8/21 @ 3:30

Synoptics/Dynamics:

Laurie Agel, University of Massachusetts - Lowell

"Dynamical Analysis of Extreme Precipitation Events in the Northeast"

Bradford Barrett, U.S. Naval Academy

"Intraseasonal variability of large-scale meteorological patterns and tornado activity"

Benjamin Lintner, Rutgers, The State University of New Jersey

"Impact of land-atmosphere interactions on surface temperature distributions"

Chihhua Tsou, National Taiwan Normal Univ.

"Role of Multi-scale Interaction in Tropical cyclones Eddy Kinetic Energy"

John Walsh, University of Alaska, Fairbanks

"Atmospheric circulation patterns associated with extreme events in Alaska"

Modeling:

Tereza Cavazos, Department of Physical Oceanography, CICESE

"Present and future daily precipitation extremes in the North American monsoon region"

Anthony DeAngelis, Rutgers University

"Evaluation of CMIP3 and CMIP5 Simulations of Heavy Precipitation and its Associated Physical Mechanisms over North America"

Sho Kawazoe, Iowa State University

"Regional, Very Heavy Daily Precipitation in Global and Regional Climate Simulations of North America"

Arun Kumar, NOAA / Climate Prediction Center

"Do Extreme Climate Events Require Extreme Forcings?"

Paul Loikith, Caltech/JPL

"Evaluating Extreme Temperatures and Associated Mechanisms in NARCCAP Hindcast Experiments"