

The Seventh Workshop on Decadal Climate Variability

Venue: The Hilton Waikoloa Village, Waikoloa (near Kona), Hawaii

Dates: 30 April to 3 May 2007

Scientific Program Committee:

Vikram Mehta (The Center for Research on the Changing Earth System)

Jim Carton (Univ. of Maryland)

Tom Delworth (NOAA-Geophysical Fluid Dynamics Laboratory)

Lisa Goddard (International Research Institute for Climate & Society, Columbia Univ.)

John Marshall (Massachusetts Institute of Technology)

Jay McCreary (International Pacific Research Center, Univ. of Hawaii)

Jerry Meehl (National Center for Atmospheric Research)

Co-sponsors:

The NASA-Ocean Physics Program

The NSF-Climate and Large-scale Dynamics Program

The NOAA-Climate Office/Climate Variability and Predictability Program

The US-CLIVAR Office

Workshop Objectives:

1. To review progress in all aspects of decadal climate variability and predictability; and
2. To identify special physics of decadal climate variability and predictability.

Workshop Program*

Sunday, 29 April 2007

5:00-7:00 PM Registration on Kona Promenade

Monday, 30 April 2007

7:30 AM Breakfast and Registration on Kona Promenade

8:30 AM Welcome and Purpose of the Workshop

Vikram M. Mehta

The Center for Research on the Changing Earth System, Columbia, Maryland, USA

9:00 AM Decadal Outlook for Satellite Observations for Climate

Eric Lindstrom

Ocean Physics Program, NASA Headquarters, Washington, DC, USA

Session 1: Continental Climate

9:30 AM Plans and Progress on a Coordinated Research Effort on Long-Term Drought: The US CLIVAR Working Group on Drought

Siegfried Schubert and David Gutzler

NASA-Goddard Space Flight Center, Greenbelt, Maryland, USA

10:00 AM Decadal And Multidecadal Variability In The West African Sahel Since The 17th Century

Sharon Nicholson

Florida State University, Tallahassee, Florida, USA

10:30-11:00 AM Break

11:00 AM Climatic Changes in the American Cordillera Region in the Past 50 Years

Henry F. Diaz

NOAA Earth System Research Laboratory, Boulder, Colorado, USA

11:30 AM Trends in Maximum and Minimum Temperature Extremes in Select Regions of the United States

Rebecca Smith, James O'Brien, Melissa Griffin

Center for Ocean Atmospheric Prediction Studies, Florida State University, Tallahassee, Florida, USA

12:00 PM Impacts of Ocean Basin Scale, Decadal Climate Variability Patterns on Hydro-meteorology in the Missouri River Basin in Boreal Spring and Summer

Katherin Kullgren, Vikram Mehta, Norman Rosenberg, and Hui Wang

The Center for Research on the Changing Earth System, Columbia, Maryland, USA

12:30 PM Understanding Seasonality And Regionality Of Climate Trends Over The U.S. During 1950-2000

Hailan Wang, Siegfried Schubert, Max Suarez, Martin Hoerling, Arun Kumar

NASA-Goddard Space Flight Center, Greenbelt, Maryland, USA

1:00-1:45 PM Lunch (provided)

1:45 PM Testing A Retrospective Simulation Strategy Of Typhoon Seasons In SE Asia

Hans von Storch and Frauke Feser

Institute for Coastal Research, GKSS Research Center, Germany

2:15 PM Climate Variability of Monthly Extremes and Associated Teleconnections

Justin Brolley and James O'Brien

Center for Ocean-Atmosphere Prediction Studies, Florida State University, Tallahassee, Florida, USA

2:45 PM Large-Scale Summer Monsoon Variability Over India Reconstructed From a Network of Tree-Ring Chronologies Along the Himalayan 'Hinge Line'

Edward R. Cook

Lamont-Doherty Earth Observatory of Columbia University, New York, USA

3:15 PM Decadal variability of Indian summer monsoon rainfall over different homogeneous regions in relation to AMO

S. S. Dugam and S. B. Kakade

Indian Institute of Tropical Meteorology, Pune, India

* Last updated on 22 February 2007

3:45 – 4:15 PM **Break**

4:15 PM **Subseasonal-decadal linkage in Indian monsoon rainfall**

Arthur M. Greene, Andrew W. Robertson

International Research Institute for Climate and Society, Palisades, New York, USA

4:45 PM **Seasonality and Interdecadal Changes in Variability of European Climate and its Links to Atmospheric Circulation**

Igor Zveryaev and Sergey Gulev

P.P. Shirshov Institute of Oceanology, RAS, Moscow, Russia

5:15 PM **End of the Day's Play**

6:30 PM **Icebreaker on Lagoon Lanai**

Tuesday, 1 May 2007

- 7:30 AM **Breakfast on Kona Promenade**
- Session 2: Global, Arctic, and Atlantic Variability**
- 8:30 AM **Decadal Variability and Sea Level Rise**
Gary Mitchum and R. Steven Nerem
College of Marine Science, University of South Florida, USA
- 9:00 AM **Variability of the Oceanic Mixed Layer 1960-2004**
Semyon A. Grodsky, James A. Carton, Hailong Liu
University of Maryland, College Park, Maryland, USA
- 9:30 AM **Diagnosis of Decadal Variability of SST in a CGCM and in Nature**
Edwin Schneider and Meizhu Fan
George Mason University/COLA, USA
- 10:00 AM **Time Scale Interaction Between Decadal Time Scales and the Annual Cycle**
Jens Moeller and Dietmar Dommenges
IFM-GEOMAR, Kiel, Germany
- 10:30-11:00 AM **Break**
- 11:00 AM **Mean & Variable Properties of Oceanic Diurnal Precipitation over Decadal Period from TRMM Observations**
Eric A. Smith, Amita Mehta, and Song Yang
NASA-Goddard Space Flight Center, Greenbelt, Maryland, USA
- 11:30 AM **Decadal Variability Of The Arctic Ocean Circulation And Freshwater Content**
Andrey Proshutinsky
Woods Hole Oceanographic Institution, Woods Hole, Massachusetts, USA
- 12:00 PM **Decadal Variability And Predictability In The Atlantic As Simulated By The GFDL CM2.1 Coupled Climate Model**
Thomas Delworth, Rong Zhang, and Keith Dixon
NOAA-Geophysical Fluid Dynamics Laboratory, Princeton, New Jersey, USA
- 12:30 PM **Applications Of 3d EOFs To Multi-Decadal Variability And Predictability Of The Atlantic Thermohaline Circulation**
Ed Hawkins and Rowan Sutton
Walker Institute, Department of Meteorology, University of Reading, Reading, UK
- 1:00-1:45 PM **Lunch (provided)**
- 1:45 PM **Evidence For The Atlantic Multidecadal Oscillation As An Internal Climate Mode From Coupled GCM Simulations**
Jeff Knight and David Fereday
Hadley Centre for Climate Change, Exeter, UK
- 2:15 PM **North Atlantic Decadal Variability of Ocean Surface Fluxes**
Mark A. Bourassa, Paul J. Jughes, Jeremy Rolph, Shawn R. Smith
Florida State University, Tallahassee, Florida, USA
- 2:45 PM **Multidecadal Variability In The Winter And Summer NAO**
David Fereday, Jeff Knight, Adam Scaife, and Chris Folland
Hadley Centre for Climate Change, Met Office, Exeter, UK
- 3:15 PM **Decadal Variations In Climate Extremes And The North Atlantic Oscillation**
Adam Scaife, Chris Folland, Lisa Alexander, Anders Moberg, and Jeff Knight
Hadley Centre for Climate Prediction and Research, Met Office, UK
- 3:45-4:15 PM **Break**
- 4:15 PM **Variability of Apalachicola River Discharge and Impacts on the Regional Oceanography**
Steven L. Morey, Dmitry S. Dukhovskoy
Center for Ocean-Atmosphere Prediction Studies, Florida State University, Tallahassee, Florida, USA
- 4:45 PM **Ocean Circulation, Eddies, Basin Oscillations, And Decadal Variability Of The Argentine Basin**
Lee-Lueng Fu
Jet Propulsion Laboratory, California Institute of Technology, Pasadena, California, USA

5:15 – 6:30 PM **Discussion: Causes and Mechanisms**

Proposed Causes and Mechanisms of Decadal Climate Variability

Vikram M. Mehta

The Center for Research on the Changing Earth System, Columbia, Maryland, USA

1. Which intrinsic causes and mechanisms have been tested conclusively?
2. Which are promising candidates to test and how can they be tested?

6:30 PM **End of the Day's Play**

Wednesday, 2 May 2007

- 7:30 AM **Breakfast on Kona Promenade**
- Session 3: Pacific Variability**
- 8:30 AM **Coral Records Of Late 20th Century Warming And Freshening Trends In The Central Tropical Pacific**
Intan Nurhati, K.M. Cobb, and C.D. Charles
Georgia Institute of Technology & Scripps Institution of Oceanography, USA
- 9:00 AM **The Mid-1970s Climate Shift In The Pacific And The Relative Roles Of Forced Versus Inherent Decadal Variability**
Gerald A. Meehl and Aixue Hu
National Center for Atmospheric Research, Boulder, Colorado, USA
- 9:30 AM **Decadal Variability in the North Pacific: An Observationally-Constrained Idealized Model**
Bo Qiu, Niklas Schneider, Shuiming Chen
University of Hawaii at Manoa, Hawaii, USA
- 10:00 AM **North Pacific Decadal Variability in Community Climate System Model Version 2**
Young-Oh Kwon and Clara Deser
[1] Woods Hole Oceanographic Institution; [2] National Center for Atmospheric Research, USA
- 10:30-11:00 AM **Break**
- 11:00 AM **Multi Decadal Climate Variability in Observations, IPCC-Models and a Simple Zero Order Ocean model**
Dietmar Dommenges
IFM-GEOMAR, Kiel, Germany
- 11:30 AM **The North and South Pacific Decadal Variability in Response to Perfectly Periodic ENSO**
Daeho Jin and Ben P. Kirtman
George Mason University & COLA, USA
- 12:00 PM **Seasonal And Long Term Atmospheric Response To Reemerging North Pacific Oceanic Temperature Variability: The Combined Statistical And Dynamical Assessment**
Zhengyu Liu, Yun Liu, Lixin Wu, and R. Jacob
Center for Climatic Research, University of Wisconsin-Madison, USA
- 12:30 PM **The Role Of The Ocean In Decadal Climate Variability In The North Pacific: What It Takes To Model It Properly**
LuAnne Thompson and Jordan Dawe
University of Washington, Seattle, Washington, USA
- 1:00-1:45 PM **Lunch (provided)**
- 1:45 PM **Kuroshio Large Meander Evolution in an Eddy-Resolving Global General Circulation Model**
Niklas Schneider, Bo Qiu, and Hideharu Sasaki
International Pacific Research Center, University of Hawaii, USA
- 2:15 PM **Intrinsic Oceanic Decadal Variability In The North Pacific Generated In The Eastern Boundary Current System**
Emanuele Di Lorenzo and Niklas Schneider
Georgia Institute of Technology, Atlanta and IPRC, University of Hawaii at Manoa, USA
- 2:45 PM **The Influence of North Pacific Decadal Variability on the Source of Upwelled Waters in the California Current System**
Kettyah C. Chhak and Emanuele Di Lorenzo
Georgia Institute of Technology, Atlanta, Georgia, USA
- 3:15 PM **Decadal Variability In The Indo-Pacific Ocean Inferred From Satellite Data, Modeling, And Data Assimilation**
Tong Lee
NASA- Jet Propulsion Laboratory, Pasadena, California, USA
- 3:45-4:15 PM **Break**
- 4:15 PM **Modulation of the Madden-Julian Oscillation by the Indo-Pacific Warm Pool Decadal Variability**
Vikram M. Mehta and Hui Wang
The Center for Research on the Changing Earth System, Columbia, Maryland, USA

4:45 PM **Multi-Decadal Climate Oscillation In The Southern Hemisphere Simulated By A Climate Model**

Hyungmoh Yih, T. Motoi, W.-L. Chan, I. S. Oh
Research Institute of Oceanography, Seoul National University, Korea

5:15 – 6:30 PM **Discussion: Mechanisms
On The Nature Of The Interannual And Interdecadal Climatic Variations**

Sonechkin Dmitry
P.P. Shirshov Oceanology Institute, RAS, Moscow, Russia

1. Are solar, lunar, and volcanic forcings playing roles? How important are they?
2. Which external causes and mechanisms have been tested conclusively?
3. Which are promising candidates to test and how can they be tested?

6:30 PM **End of the Day's Play**

Thursday, 3 May 2007

7:30 AM **Breakfast on Kona Promenade**

Session 4: Variability of ENSO

8:30 AM **Analyses Of The Decadal Variability Of ENSO And The PDO**

Nate Mantua

JISAO, University of Washington, Seattle, Washington, USA

9:00 AM **ENSO/Tropical “Weather” Interaction and Extreme El Nino Events**

Fei-Fei Jin

Department of Meteorology, University of Hawaii at Manoa, Hawaii, USA

9:30AM **A Two-Oscillator View of Decadal ENSO Modulation**

Jin-Yi Yu, Fengpeng Sun, and Hsun-Ying Kao

University of California, Irvine, California, USA

10:00 AM **Net Effects of Atmospheric and Oceanic Changes on Decadal ENSO Variability Associated with the Climate Shift in the Late 1970s**

Rong-Hua Zhang, Antonio Busalacchi, and Dave DeWitt

ESSIC, University of Maryland, College Park, Maryland, USA

10:30-11:00 AM **Break**

11:00 AM **The Role of El Niño-Southern Oscillation in Regulating its Background State**

De-Zheng Sun

CU/CIRES/Climate Diagnostics Center & NOAA/Earth System Research Laboratory, Boulder, Colorado, USA

11:30 AM **The Influence Of A Weakening Of The Atlantic Meridional Overturning Circulation On ENSO**

Axel Timmermann, Yuko Okumura, Shang-Ping Xie, and Jianjun Yin

University of Hawaii at Manoa, Honolulu, USA

12:00 PM **Impact of the Indian Ocean on ENSO Variability in a Hybrid Coupled Model**

Sang-Wook Yeh, Renguang Wu, and Ben P. Kirtman

Korea Ocean Research & Development Institute, Korea

12:30-1:15 PM **Lunch (provided)**

1:15 – 2:45 PM **Discussion: Predictability and Prediction**

Predicting Near-Term Climate Change

Arthur M. Greene and Lisa Goddard

International Research Institute for Climate and Society, The Earth Institute at Columbia University, Palisades, New York, USA

What is important to predict at decadal time scales?

Is climate predictable at decadal time scales? Why?

2:45 – 3:30 PM **Concluding Session**

End of the Workshop