

Program for the 35th Annual Climate Diagnostics and Prediction Workshop

Sheraton Raleigh Hotel
Raleigh, NC, October 4-7, 2010

Monday, October 4, 2010

07:00-08:00 Registration

08:00-08:10 **Welcoming Remarks**

Wayne Higgins, Director - Climate Prediction Center
Otis Brown, Director - CICS-NC

Session 1: **Recent Climate Events** **Chair: Wayne Higgins, CPC**

08:10-08:30 *An overview of the 2009-10 El Nino and transition to La Nina - INVITED*
Michelle L'Heureux, CPC

08:30-08:50 *State of the Climate for 2009-2010 - INVITED*
Deke Arndt, NCDC

08:50-09:10 *The Rise and Fall of "Drought David": A Review of Recent Droughts Across the United States - INVITED*
Mike Hayes, NDMC

09:10-09:30 *Application of Long-Term Monitoring and Data archiving to deepwater horizon- INVITED*
Margarita Gregg, Tim Boyer, Hernan Garcia, NODC

09:30-09:50 *Delivering Policy-Relevant Information from Long-Term Observations - INVITED*
Jim Butler, ESRL

09:50-10:10 *Extremely Negative Arctic Oscillation persisting during the winter 2009/2010 and the spring 2010*
Shingo Ushida, JMA

10:10-10:30 **Morning Break**

10:30-10:50 *2009-10 Snow Siege: Role of El Niño, NAO, and Global Change*
Klaus Wolter, CIRES

10:50-11:10 *The 2009-2010 El Nino and Florida Dry Season Severe Weather – A Reality Check for the Limits of Predictability*
Bart Hagemeyer, NWS

11:10-11:30 *An Analysis of Extreme Precipitation Events in the US During Spring 2010*

Wayne Higgins, CPC

11:30-11:50 *Climate Perspective on the 2010 Atlantic Hurricane Season- INVITED*
Gerry Bell, CPC

11:50-12:30 **Keynote Talk**
Tom Karl, Acting Director - NOAA Climate Service

12:30-13:50 **Lunch**

Session 2: **Climate Data Records** **Chair: John Bates, NCDC**

13:50-14:10 *New Developments in NOAA's New Climate Data Record Program- INVITED*
David Markham (on behalf of Jeff Privette), Scientific Research Corporation

14:10-14:30 *The Climate Data Record Program and the Research-to-Operations Transition Process for CDRs*
David Markham, Scientific Research Corporation

14:30-14:50 *High-Resolution Global Precipitation Analyses for Improved Monitoring, Assessments and Diagnostics of Global Climate*
Pingping Xie, Soo-Hyun Yoo, Robert Joyce, and Yelena Yarosh, CPC

14:50-15:10 *An updated Rainfall Analysis for Hawaii and the US-affiliated Islands-a supplement to the Pacific Rainfall Atlas*
Luke He and Co-authors, CPC

15:10-15:30 **Afternoon Break**

15:30-15:50 *The inhomogeneities caused by changes of the observing system in MERRA reanalysis*
Junye Chen, NASA/GSFC, ESSIC

15:50-16:10 *Satellite Observations of Atypically-Thick Low Marine Clouds*
Matthew Miller, NCSU

16:10-16:30 *Converting NASA Observational Datasets for the CMIP5/IPCC Assessment*
Robert Ferraro, NASA/JPL

16:30-16:50 *Regional Downscaling of IPCC Sea Surface Wind Predictions Based on Long-term Satellite Data Statistics*
Ruoying He, Zuo Xue, and Zhigang Yao, NCSU

18:00-20:00 **Icebreaker**

Tuesday, October 5, 2010

Session 3: **Climate Variability 1** **Chair: Mike Halpert, CPC**

- 08:00-08:20 **Report:** *Assessment of Intraseasonal and Interannual Climate Prediction and Predictability*
Joseph Casola, National Academy of Science
- 08:20-08:40 *Variability of the MJO in the NCEP CFSR and coupled climate model simulations*
Scott Weaver, CPC
- 08:40-09:00 *A synoptic-climatology of episodic, sub-seasonal retractions of the Pacific jet*
Sharon Jaffee
- 09:00-09:20 *Surface Water and Energy Budgets in CFSR and NARR and GR2 Reanalyses for the Mississippi River Basin*
Rongqian Yang, Michael Ek, and Jesse Meng, EMC
- 09:20-09:40 *Effects of river routing processes on simulated climatology in the Air-sea coupled model*
Suryun Ham, Yousei University
- 09:40-10:00 *Moisture sources of dry and wet spells of the Indian Monsoon*
Peter Pantina and V. Misra, FSU
- 10:00-10:20 **Morning Break**
- 10:20-10:40 *Separating weather and climate: The cold and snow of winter 2009/10 as test case*
Huug van den Dool, CPC
- 10:40-11:00 *Aqua-planet simulations of the role of cold fronts in the onset of the South Atlantic Convergence Zone*
Rosana Nieto Ferreira and Winston Chao, East Carolina University
- 11:00-11:20 *Specification of surface temperature from multiple model fields; determining which model fields produce the best forecast of surface conditions*
Dan Collins and David Unger, CPC
- 11:20-11:40 *Atlantic Tropical Cyclones in the 20th Century: Natural Variability and Secular Change in Cyclone Count*
Sumant Nigam, University of Maryland
- 11:40-12:00 *Diurnal Cycle of Precipitation in Observations and the CFS Reanalysis*
Soo-Hyun Yoo, Pingping Xie, and Wanqiu Wang, CPC
- 12:00-13:30 **Lunch**
- Session 4:** **Climate Products and Services** **Chair: Shari Dixon, CSD**
- 13:30-13:50 *Using Climate Products in Making Agricultural Assessments*

Brian Morris, USDA

- 13:50-14:10 *Assessing the value of climate information in agriculture using the Stochastic Production Frontier approach*
Daniel Solis and David Letson, University of Miami
- 14:10-14:30 *Predictions of meningitis epidemics in West Africa using climate indicators*
Pascal Yaka, Benjamin Sultan, and Wassila Thiaw, CPC
- 14:30-14:50 *User Engagement and Applied Research Activities at NOAA's Southeast Regional Climate Center*
Chris Fuhrmann and Co-authors, SERCC
- 14:50-15:10 *Engaging stakeholders for conducting regional climate assessments*
Greg Dobson, Jim Fox, Karin Lichtenstein, and Matt Hutchins, UNC-Asheville
- 15:10-15:30 **Afternoon Break**
- 15:30-17:30 **Panel Discussion** **Moderator: Fiona Horsfall, CSD**
- 15:30-15:45:** Art DeGaetano, NERCC
15:45-16:00: Keith Ingram, SECC
16:00-16:15: Andrew Freedman, Climate Central
16:15-16:25: Marina Timofeyeva, CSD
16:25-16:35: Ed O'Lenic, CPC
- 16:35-17:30:** Interactive Discussion
- 17:30-17:35 **Poster Event Introduction** **Jon Gottschalck and Sky Yang, CPC**
- 18:00-21:00 **Poster Event – All sessions**

Wednesday, October 6, 2010

Session 5: **DYNAMO/IASCLIP** **Chair: Jin Huang, CPO**

- 08:20-08:40 *DYNAMO: A Research Program on MJO Initiation- INVITED*
Chidong Zhang, University of Miami
- 08:40-09:00 *Intraseasonal Mixed Layer Process Variability in the ECCO Ocean Data Assimilation Product: Preliminary Analyses Relevant to DYNAMO*
D.J. Halkides, D. Waliser, T. Lee, R. Murtugudde and S. Lucas, UCLA
- 09:00-09:20 *Factors affecting the forecast skill of the Madden-Julian-Oscillation in the CFS*
Augustin Vintzileos and Jon Gottschalck, CPC/ESSIC
- 09:20-09:40 *Better Initial Conditions Significantly Improve Intraseasonal Prediction*
Joshua Fu, IPRC/University of Hawaii

- 09:40-10:00 **Morning Break**
- 10:00-10:20 *The CLIVAR-VAMOS Intra Americas Science Processes Program - INVITED*
Art Douglas, Creighton University
- 10:20-10:40 *Gauging international interest in IASCLIP*
Mike Douglas, NSSL
- 10:40-11:00 *GPS measurements in the Caribbean and surrounding regions*
Robert Kursinski, University of Arizona
- 11:00-11:20 *Caribbean Precipitation Variability in Observations and IPCC AR4 Models*
Elinor Martin and Courtney Schumacher, Texas A&M University
- 11:20-11:40 *Predicting Caribbean Basin Tropical Cyclone Activity*
Phil Klotzbach, Colorado State University
- 11:40-12:00 *Climate Change, Drought, and Jamaican Agriculture*
Scott Curtis, East Carolina University

12:00-13:30

Lunch

Session 6:

Climate Variability 2

Chair: David Levinson, NCDC

- 13:30-13:50 *A MERRA-Based Analysis of the Nature and Potential Predictability of Heat Waves and Dry Spells During Boreal Summer*
Siegfried Schubert, Hailan Wang and Max Suarez, NASA/GSFC
- 13:50-14:10 *Sea Breeze Variations in Florida*
Lauren Moeller and V. Misra, Florida State University
- 14:10-14:30 *2010 Hurricane Season Prediction with the NCEP T382 CFS CGCM*
Jae Schemm and Lindsey Long, CPC
- 14:30-14:50 *Sensitivity of Tropical Climate to Low-Level Clouds in the NCEP CFS*
Zeng-Zhen Hu and Co-authors, CPC
- 14:50-15:10 *Regional downscaling of NCEP CFS seasonal forecasts by NCEP RSM*
Yunfei Zhang and Hann-Ming Henry Juang, EMC
- 15:10-15:30 **Afternoon Break**
- 15:30-15:50 *CFS Prediction of Winter Persistent Inversions in the Intermountain Region*
Rob Gillies, S Wang, J. Yoon, and S. Weaver, Utah State University
- 15:50-16:10 *Drought Prediction based on the Standardized Precipitation Index*
Jin Ho Yoon and Kingtse Mo, CPC

- 16:10-16:30 *Seasonal Predictability of the Atlantic Warm Pool in the NCEP CFS*
Vasu Misra, Florida State University
- 16:30-16:50 *Prediction of Tropical Cyclone Formations at Weekly to Monthly Lead Times: A Statistical-Dynamical Approach*
Tom Murphree and David Meyer, NPS
- 16:50-17:10 *Assessment of the hydroclimate predictability under global warming*
Jung-Eun Kim, Yonsei University Korea
- 18:30-21:30 **Dinner Banquet** **Speaker: Tony Busalacchi “Climate and Wine”**

Thursday, October 7, 2010

Session 7: **Climate for Coastal Applications** **Chair: Dave Eslinger**

- 08:30-08:50 *NOAA Coastal Services Center -- Linking People, Information, and Technology to support the environmental, social, and economic well-being of the coast*
Dave Eslinger, CSC
- 08:50-09:10 *Overview of the pacific storms climatology products*
David Levinson, M. Kruk, J. Marra, and E. Gibney, NCDC
- 09:10-09:30 *CoCoRaHS: Volunteer Precipitation Monitoring in Coastal Communities . . .*
“When it Pours, We Measure!”
Henry Reges, Colorado State University
- 09:30-09:50 *Climate signals derived from historical coastal observations off the U. S. West Coast*
Sung Yong Kim, Bruce Cornuelle, and Eric Terrill, Scripps
- 09:50-10:10 **Morning Break**
- 10:10-10:30 *Trajectory study on the origin of moisture associated with Atmospheric Rivers in the west coast of United States*
Ju-Mee Ryoo, NASA/JPL
- 10:30-10:50 *The Impact of Climate Change on Storm Surges over the U.S. East Coastal Waters*
Zhigang Yao, Zuo Xue, and Ruoying He, NCSU
- 10:50-11:10 *Potential Future Effects of Sea Level Rise in Northeastern North Carolina*
Thomas Shay, Brian Blanton, and Richard Luettich, Univ. of North Carolina
- 11:10-11:30 *Multi-level model downscaling of Coastal Ocean Responses in face of a Warming Climate: Carolinas Perspective*
Zuo Xue, Zhigang Yao, and Ruoying He, NCSU

11:30-13:00

Lunch

Session 8:

Climate Variability 3

Chair: Ken Kunkel, NCSU

13:00-13:20

An Improved Climate Division Database for the Conterminous United States
Russell S. Vose, NCDC

13:20-13:40

The Influence of the El Niño-Southern Oscillation on the Extratropical Annular Modes
Amy Butler, M. L'Heureux, A. Kumar, B. Jha, W. Wang and David Unger, CPC

13:40-14:00

The Madden-Julian Oscillation (MJO) and probabilistic forecasts of extreme precipitation in the U.S.
Charles Jones, L.Carvalho, J.Gottschalck, W. Higgins, UCSB

14:00-14:20

Dominant intraseasonal variability modes over the eastern Pacific ITCZ and their representation in climate models
Xianan Jiang, UCLA

14:20-14:40

Atlantic temperatures as a predictor of drought in the West African Sahel
A. Dezfuli and S. E. Nicholson, Florida State University

14:40-15:00

Afternoon Break

15:00-15:20

The OCN and EOCN methods of climate forecast with yearly updated optimal averaging time
Peitao Peng, Arun Kumar and Huug van den Dool, CPC

15:20-15:40

Variability of the Great Plains Low-Level Jet in the US CLIVAR Drought Working Group Global Climate Model Experiments
Scott Weaver, CPC

15:40-16:00

New Patron of continental behavior (Brazilian basin) causes floods in Ecuador 2008
Antonio Rodriguez Bedoya

16:00-16:20

Energy budget over semi-arid agro-ecosystem using satellite data
Kailas Kamaji Dakhore, Anand Agricultural University

16:20

Workshop Adjourns

Posters

Recent Climate Events

Hydro-climate conditions over the United States for the water year 2010

Mo, Kingtse, CPC

Overview of MJO activity during 2009-2010

Jon Gottschalck, CPC

Evaluation of MRED reforecasts of severe weather outbreaks

Chris Anderson, Iowa State University

Climate Data Records

Utilizing the SBUV/2 Ozone Profile Climate Data Record to Discern Climate Change

Craig Long, CPC

Hidden values in dynamical downscaling systems for application models

Dong-Wook Shin and Steve Cocke, FSU

Data Assimilation on automatic weather stations

Nilton Sergio Castro, FUNCEME

Vertical Cloud Structures of the Boreal Summer Intraseasonal Variability Based on CloudSat Observations

Xianan Jiang, UCLA

A System for Calibration and Quality Control of Gridded Datasets

David Unger, CPC

Climate Variability

Recurrent Supersynoptic Evolution of the Great Plains Low-Level Jet

Scott Weaver, CPC

Assessment and Modelling of Malaria outbreak (case study of Arba Minch area)

Dagachew Molla

Seasonal Mean Atmospheric response to Sea Ice forcing in GFS

Bhaskar Jha and Arun Kumar, CPC

Unusual Extremes in the Negative Phase of the Arctic Oscillation during 2009

Michelle L'Heureux, CPC

What can we learn about the Northern Hemisphere circulation from the 20th Century Reanalysis?

Phil Pegion, Martin Hoerling, and Judith Perlwitz, ESRL/CIRES

Prospects for Improving Subseasonal Predictions

Kathy Pegion and Prashant Sardeshmukh, ESRL/CIRES

Sensitivity of dynamical downscaling ability to changes in model domain size

Suhee Park, Hyun-Suk Kang, and Young-Hwa Byun, KMA

An Analysis of Climate Variability to Increase of GHG Concentrations in CCSM3
Zeng-Zhen Hu, Arun Kumar, Bhaskar Jha, and Bohua Huang, CPC

Predictability and fidelity of dry season downscaled reforecasts over the tropical South American region
Adam Frumkin and V. Misra, FSU

Seasonality of the Pacific Decadal Oscillation
Hui Wang, Arun Kumar, Wanqiu Wang, and Yan Xue, CPC

Impacts of the El Niño-Southern Oscillation and the Quasi-Biennial Oscillation in the CFSR reanalysis
Amy Butler and Craig Long, CPC

Statistical indices of the northward rainfall progression over eastern Africa
Emily Riddle, CPC

Summer Season Precipitation Prediction over America with the NCEP Climate Forecast System Using Different Land Components and Different Sea Surface Temperatures
Rongqian Yang, Michael Ek, Jesse Meng and Ken Mitchell, EMC

Circumglobal teleconnection and early summer rainfall in the US Intermountain West
S. Wang, L. Hipps, R. Gillies, X. Jiang, L. Moller, Utah State University

Simulations of precipitation over the North-American Monsoon region and Intra-Americas Sea during 2008/2009 summer with NCEP models
Wanqiu Wang, Pingping Xie, and Soo-Hyun Yoo, CPC

Tropical Storm Detection in the CFSR
Lindsey Long and Jae Schemm, CPC

Monitoring of Key Indices and Prediction Uncertainty on ASM Onset Process
Bing Zhou

Trends and variability of rainfall in Tripoli
Younis Al-Fenadi, Libyan National Meteorological Centre

Evaluating and Classifying the Phase Cycles of Madden-Julian Oscillation
Tom Walsh, Northern Illinois University

Variability in the impacts of teleconnections on precipitation patterns in the western US
Erika Wise, UNC-Chapel Hill

Predictability of near-surface climate extreme events
Emily J. Becker, Huug van den Dool, and Malaquias Peña, CPC

Regional atmospheric reanalysis at high resolution: sub-seasonal and diurnal variability in the Southeast United States

Lydia Stefanova, FSU

Computing Agricultural Indices using the NCEP Global Analysis Systems

Wesley Ebisuzaki and Li Zhang, CPC

A climatology of infrared-based tropical cyclone wind radii, integrated kinetic energy, and damage potential

Paula Hennon and K. Knapp, STG Inc.

Preliminary results from the Multi-RCM Ensemble Downscaling (MRED) project

Raymond Arritt, Laurel DeHaan, and Masao Kanamitsu, Iowa State University

Climate Analysis and Long Range Forecasting of Radar Performance in the Western North Pacific

David Ramsaur, Tom Murphree and Paul Frederickson, FNMOC

Long Range Prediction of Sea Ice Concentration in the Beaufort Sea

Megan Stone, FNMOC

Climate Products and Services

Use of the early warning information in the field of agriculture

Sjoji Notsuhara and Shingo Ushida, JMA

Introduction to seasonal forecast systems at NIMR/KMA and its evaluation for 2009/10 wintertime prediction

Moon-Hyun Kim, Hyun-Suk Kang, Young-Hwa Byun, Suhee Park, Won-Tae Kwon, KMA

Application of North-American Land Data System in Support of National Integrated Drought Information System

Youlong Xia and Co-authors, EMC

Climate Prediction Application Science Priorities and Issues - Contribution from 2010 CPAS Workshop

Jiayu Zhou, M. Hawkins, and M. Timofeyeva, NWS/OST

Improving Local Climate Services by Fostering Local Climate Studies

Annette Hollingshead and Co-authors, CSD

Development Plan and Status for Earth System Model in KMA

Johan Lee, Young-Hwa Byun, Hyunsuk Kang, Suhee Park, Won-Tae Kwon, KMA

Dependence of Midwest Rainfall Anomalies on Gulf of Mexico SST Anomalies

Chris Anderson and Craig Clark, Iowa State University

Customer Satisfaction with NOAA's National Weather Service Climate Products and Services

Jenna Meyers, Michelle Hawkins, Marina Timofeyeva and Shari Dixon, CSD

DYNAMO/IASCLIP

The Rendition of the Atlantic Warm Pool in Reanalyses
Ashley Stroman and V. Misra, FSU

Operational forecast support of DYNAMO by NCEP
Augustin Vintzileos and Jon Gottschalck, CPC

Western Hemisphere Warm Water Pool Response to Placement of ENSO Warming
Art Douglas and Phillip J. Englehart, Creighton University

The midsummer strengthening of the NASH: A zonal mean perspective
Patrick Kelly