Program for the 28th Annual Climate Diagnostics and Prediction Workshop

Monday October 20, 2003

7:15-8:15 Registration
8:15-8:30 Welcome and Opening Remarks

National Centers for Environmental Prediction
Dr. Arun Kumar, Deputy Director, Climate Prediction Center/NCEP/NWS/NOAA

Desert Research Institute
Dr. Kent Hoekman, Director, Atmospheric Sciences Division, Desert Research Institute

SESSION 1: REVIEW AND ASSESSMENT OF RECENT CLIMATE VARIABILITY
Chairperson: Wayne Higgins

8:30-9:00 EVOLUTION OF THE RECENT ENSO CYCLE
V. Kousky

9:00-9:30 Did the El Niño of 2002-03 break the drought in Colorado or elsewhere in the West?
Klaus Wolter

9:30-10:00 Climate Anomalies and the 2003 wildfire season
Tim Brown

10:00-10:30 Atmospheric conditions associated with the 2003 Atlantic hurricane season
G. Bell and M. Chelliah

10:30-11:00 **BREAK**

SESSION 2: DROUGHT
Chairperson: Kelly Redmond

11:00-11:30 On the causes of the 1930s dust bowl
Siegfried Schubert, Max Suarez, and Philip Pegion

11:30-12:00 The recent 4-year drought: Global warming or La Nina?
Prashant Sardeshmukh and Gilbert Compo

12:00-12:30 Global characteristics of the life cycles of tropical droughts
Bradfield Lyon

12:30-1:30 **LUNCH**

1:30-3:00 **POSTER SESSION 1**
Chairperson: Michael Halpert

SESSION 3: SKILL OF CLIMATE PREDICTIONS
Chairperson: Cecile Penland

3:00-3:30 RECENT SKILL OF OPERATIONAL SEASONAL FORECASTS
Ed O'lenic

3:30-4:00 Verification of NCEP SFM seasonal climate prediction during 2001-2003
Jae Schemm

4:00-4:30 Hind-cast skill in SST prediction in the new NCEP coupled atmosphere-ocean model
Suranjana Saha, Wanqiu Wang, Hua-Lu Pan, Dave Behringer, Sudhir Nadiga, Shrinivas Moorthi, and Scott Harper

4:30-5:00 A Superior Alternative to the Modified Heidke Skill for Verification of Categorical Versions of CPC Outlooks
Robert Livezey

6:00 - 8:00 **WORKSHOP ICEBREAKER RECEPTION**

Tuesday October 21, 2003

SESSION 4: Weather, Water, and Climate in the Western U. S.
Chairperson: Chet Ropelewski

8:00-8:30 Land surface memory and water budget over the U. S. West Coast states and monsoon regions
Yun Fan and Huug van den Dool

8:30-9:00 WESTMAP: The western climate mapping initiative
Andrew Comrie, Kelly Redmond, and Christopher Daly

9:00-9:30 Fluctuations in rain vs. snow in the mountainous West
Dan Cayan, Michael Dettinger, Noah Knowles, and Iris Stewart

9:30-10:00 **BREAK**

10:00-10:30 Satellite-derived precipitation estimates over the western U. S.: Fact or Fiction
John Janowiak, Robert Joyce, Pingping Xie, Mingyue Chen, Yelena Yarosh, and Phil Arkin

10:30-11:00 Winter orographic-precipitation patterns in the Sierra Nevada – Climatic underpinnings and hydrologic consequences
Michael Dettinger, Kelly Redmond, and Daniel Cayan

11:00-11:30 Climatic modulation of water demand in the city of Albuquerque
David Gutzler and Joshua Nims

11:30-12:30 **LUNCH**

POSTER SESSION 2 12:30-2:00
Chairperson: Muthu Chelliah

SESSION 5: Monsoon Systems
Chairperson: Jae Schemm

2:00-2:30 Variability in daily rainfall over the NAME Tier 1 domain and associated relationships with transient synoptic features
Art Douglas and Phillip Englehart

2:30-3:00 Relationships between Gulf of California Moisture Surges and Precipitation in the Southwestern United States
Wayne Higgins, Wei Shi, and Chris Hain

3:00-3:30 Circulation Regimes Associated with the Southwestern Monsoon and Impact on Forecast Skill
Kingste Mo

3:30-4:00 Predicting the Onset of the North American Monsoon and progress toward a mechanistic understanding
David Mitchell, Beth Hall, Miguel Lavin, Dorothea, and Kelly Redmond

4:00-4:30 Predictability of summertime North American precipitation
Gilbert Compo and Prashant Sardeshmukh

4:30-5:00 Diurnal, Intraseasonal, and interannual Variability of Precipitation Associated with the North American Monsoon System
Phil Arkin and Pingping Xie

Wednesday October 22, 2003

SESSION 6: DIAGNOSING AND PREDICTING INTRASEASONAL VARIABILITY
Chairperson: Lisa Goddard

8:00-8:30 Synoptic View of the North Atlantic Oscillation/Is the North Atlantic Oscillation a breaking wave
Steven Feldstein, Sukyoung Lee, Christian Franzke, and James J. Benedict

8:30-9:00 On the time scales of atmospheric indices
Roland Madden

9:00-9:30 A study of North American stormtracks: Climatology, variability, and trends
Tim Eichler and Wayne Higgins

9:30-10:00 The influence of the Madden-Julian Oscillation (MJO) on Northern Hemisphere high latitude wintertime surface air temperatures
Gabriel Vecchi and Nicholas Bond

10:00-10:30 **BREAK**

SESSION 7: DIAGNOSING AND PREDICTING INTERANNUAL VARIABILITY
Chairperson: Kingtse Mo

10:30-11:00 Rainfall in western South America: The traditional "El Nino" versus "Global ENSO"
Chet Ropelewski and Lisa Goddard

11:00-11:30 Global patterns of the risk of seasonal extremes related to ENSO
Robert Webb, John Eischeid, Henry Diaz, Klaus Wolter, Catherine Smith, and Randall Dole

11:30-12:00 El Niño: Catastrophe or Opportunity
Lisa Goddard

12:00-1:00 **LUNCH**

1:00-2:30 **POSTER SESSION 3**
Chairperson: Song Yang

SESSION 7: DIAGNOSING AND PREDICTING INTERANNUAL VARIABILITY continued
Chairperson: Kingtse Mo

2:30-3:00 Opposite phases of the Antarctic Oscillation and relationships with intraseasonal to interannual activity in the Tropics during the Austral summer
Leila Carvalho, Charles Jones, and Tércio Ambrizzi

3:00-3:30 ENSO-less tropical SSTs that still have interannual variability
Cecile Penland and Ludmila Matrosova

3:30-4:00 Persistence of marine tropical climate and its implications for El Nino historical reconstructions
Alexey Kaplan and Daniel Gombos

4:00-4:30 Trends Revisited
Huug van den Dool

4:30-5:00 Seasonal and interannual variations of global large-scale precipitation as observed by the TRMM precipitation radar (PR) and the merged analyses
Pingping Xie, John Janowiak, Phillip Arkin, and Mingyue Chen

6:00-9:00 **WORKSHOP BANQUET**

Thursday October 23, 2003

SESSION 8: DIAGNOSING DECADAL VARIABILITY AND TRENDS
Chairperson: Vern Kousky

8:00-8:30 ENSO-forced decadal variability in the North Pacific
Matthew Newman

8:30-9:00 Vascillations of the tropical and North Pacific Co-Relation diagnosed in observations, proxy reconstruction, and in a coupled model
Alexander Gershunov, Michael Evans, Malcolm Hughes, and Hervé Douville

9:00-9:30 Interdecadal anomaly correlation change in an ensemble AGCM experiment
Tosiyuki Nakaegawa and Masao Kanamitsu

9:30-10:00 **BREAK**

SESSION 9: MODEL DIAGNOSTICS AND PREDICTION
Chairperson: Klaus Wolter

10:00-10:30 Physical initialization for the regional spectral model
Ana Nunes, John Roads, and Masao Kanamitsu

10:30-11:00 Diagnosing the ENSO and MJO signal in the new NCEP coupled atmosphere-ocean model
Wanqiu Wang , Hua-Lu Pan, Suranjana Saha, Dave Behringer, Sudhir Nadiga, Shrinivas Moorthi, and Scott Harper

11:00-11:30 An Overview of NCEP's North American regional reanalysis
W. Ebisuzaki, F. Mesinger, G. DiMego, E. Kalnay, K. Mitchell, M. Ek, R. Grumbine, D. Jovic, P. Shafram, and J. Woolen

11:30-12:00 130-year simulation of the period from 1872-2001 by the JMA AGCM
Shoji Kusunoki, Keiichi Matsumaru, Toshiyuki Nakaegawa, and Osamu Arakawa

12:00-1:00 **Lunch**

1:00-2:30 POSTER SESSION 4
Chairperson: John Janowiak

SESSION 10: MODEL DIAGNOSTICS AND PREDICTION AT THE ARCS
Chairperson**:** Anjuli Bamzai

2:30-3:00 Seasonal Climate Attribution Consortium: An Overview
Arun Kumar, Tony Barnston, Lisa Goddard, and Martin Hoerling

3:00-3:30 Seasonal Climate Attribution Consortium: Status. Analysis of the NDJF 2002-03 Climate Forecasts and Observations in the Northeastern U. S.
Tony Barnston, Arun Kumar, Lisa Goddard, and Martin Hoerling

3:30-4:00 IRI/ARCs Regional Applications Project
J. Roads, S. Chen, J. Chen, A. Nunes, D. Lettenmaier, E. Salathe, E. Miles, H. Juang, J. Han, J.Wang, S. Lord, S. Cocke, T. Larow, J. –H. Qian, S. Zebiak, and Andrew Robertson

4:00-4:30 CDEP consortium on ocean data assimilation for seasonal-to-interannual prediction (ODASI)
Michele Rienecker, Stephen Zebiak, James Kinter, David Behringer, Antonio Rosati, and Alexey Kaplan

4:30 ADJOURN

Monday October 20, 2003

1:30-3:00 **POSTER SESSION 1**
Chairperson**:** Michael Halpert

P1.1 Summer Drought Patterns in Canada and the Relationship to Global Sea Surface Temperatures
Amir Shabbar and Walter Skinner

P1.2 Calculating drought hazard at the country-level in Asia
Mathew Barlow, Heidi Cullen, Brad Lyon, and Olga Wilhelmi

P1.3 The 2002/2003 El Niño impact on Ethiopian Drought
Girmaw Bogale

P1.4 Analysis of Recent Atmospheric Climate Anomalies using the NSIPP-1 AGCM
Philip Pegion, Siegfried Schubert, Max Suarez, and Yehui Chang

P1.5 The Importance of Eurasian Snow cover on the Winter of 2002/03
Judah Cohen

P1.6 Updated 6-11 Month Prediction of Atlantic Basin Seasonal Hurricane Activity
Phil Klotzbach and William Gray

P1.7 Skill evaluation of JMA dynamical seasonal prediction system for operational use
Akira Itoh, Syuhei Maeda, and Yasuhiro Matsushita

P1.8 Forecasts of tropical rainfall with the constructed analog method
Peitao Peng and Huug van den Dool

P1.9 Seasonal predictability experiment by JMA AGCM
Chiaki Kobayashi and Kiyoharu Takano

P1.10 Seasonal prediction skill of zonal-mean fields during boreal summer
Shuhei Maeda, Akira Itoh, and Yasuhiro Matsushita

P1.11 IRI experimental seasonal typhoon activity forecasts
Suzana Camargo, Tony Barnston, and Stephen Zebiak

P1.12 The investigation of predictability of seasonal prediction in the simple prediction system
Jin-Ho Yoo and In-Sik Kang

P1.13 Land initialization for seasonal precipitation and temperature forecasts: Tests of a variety of techniques
Randal Koster, Ping Liu, Max Suarez, and Urszula Jambor

P1.14 Sensitivity of a 7-month global forecast to initial soil moisture
Laurel DeHaan and Masao Kanamitsu

P1.15 Long-Lead Seasonal Temperature and Precipitation Prediction Using Tropical Pacific SST Consolidation Forecasts
Wayne Higgins, Hyun-Kyung Kim, and David Unger

P1. 16 Characteristics of landfalling tropical cyclones in the United States: Climatology and interannual variability
Josh Larson, Yaping Zhou, and Wayne Higgins

P1.17 Application of CPC Method to downscale seasonal outlooks from forecast divisions to station locations
Andrea Bair, Marina Tomofeyeva, and David Unger

P1.18 Verification of specific station forecasts based on ENSO composites and CPC Nino 3.4 forecasts
Mike Staudenmaier, Jr., Marina Tomofeyeva, David Unger, Eugene Peterscu, Andrea Bair, Wayne Higgins, and Hyun-Kyung Kim

Tuesday October 21, 2003

12:30-2:00 **POSTER SESSION 2**
Chairperson**:** Muthu Chelliah

P2.1 Warm season precipitation prediction over North America with Eta regional climate model
Rongqian Yang and Kenneth Mitchell

P2.2 Variations of the U. S. And China precipitation: Regional manifestations of large-scale patterns of climate variability
Song Yang, Qingquan Li, Wayne Higgins, Vern Kousky, K.-M. Lau, and Pingping Xie

P2.3 Potential predictability of regional monsoon climate in a multi-model specio-ensemble prediction system
June-Yi Lee, In-Sik Kang, and Chung-Kyu Park

P2.4 Geostatistical Modeling of monthly monsoon precipitation in Mexico
Franco Biondi

P2.5 Daily to Annual Meteorological Patterns at High Elevation in the North American Monsoon Region
Franco Biondi

P2.6 Sources of variability of potential evapotranspiration in California
Hugo Hidalgo, Dan Cayan, and Michael Dettinger

P2.7 Multi-decadal trends in growing season intensity across the western United States
David Brown and Kurt Kipfmueller

P2.8 Climatic changes of cloud layers parameters for dry and humid regions of the West and Central part of the U. S. for 1964-2001 years
Irina Chernykh, Oleg Alduchov, and Robert Eskridge

P2.9 Relationship between atmospheric circulation and snowpack in the western United States
Jiming Jin, Norman Miller, and Soroosh Sorooshian

P2.10 Medium-range predictability of western United States dry and wet episodes
Lee Byerle and Jan Paegle

P2.11 Extreme and subseasonal precipitation in the western United States associated with the Madden-Julian Oscillation
Yehui Chang and Siegfried Schubert

P2.12 Regional Downscaling of the 50-year NCEP/NCAR Reanalysis for the California Region
Hideki Kanamaru, Masao Kanamitsu, and John Roads

P2.13 Maintenance of recurrent teleconnection patterns linking climate variability over the U. S. And Pacific during boreal summer
Hailan Wang and William K. -M. Lau

P2.14 The role of the midlatitude air-sea coupling in Northern Hemisphere summertime climate variability and predictability
Kyu-Myong Kim, William K. –M. Lau, Kyung Jin, and In-Sik Kang

P2.15 Climate of atmospheric water budget over North American monsoon area as seen from radiosonde observations
Evgeney Yarosh, Wayne Higgins, and Wei Shi

P2.16 The North American Monsoon Experiment (NAME): Status and Plans
Wayne Higgins and the NAME Science Working Group

Wednesday October 22, 2003

1:00-2:30 **POSTER SESSION 3**
Chairperson**:** Song Yang

P3.1 A statistical model of subseasonal forecasts for North America
Charles Jones, Wayne Higgins, and Jae Schemm

P3.2 The role of Southern Indian Ocean SST on the Asian monsoon, MJO, and ENSO-Monsoon Association
Soo-Hyun Yoo, S. Yang, C. –H. Ho

P3.3 Meridional Propagation of the MJO/ISO and Prediction of off-equatorial monsoon variability
Man Li Wu, S. Schubert, M. Suarez, P. Pegion, and D. Waliser

P3.4 Forecast skill of the Madden-Julian Oscillation in NCEP GFS GCM
Kyong-Hwan Seo and Jae Schemm

P3.5 Investigating the role of air-sea coupling on the Madden-Julian Oscillation
Andrew Marshall, Oscar Alves, Harry Hendon, David Karoly, and Michael Reeder

P3.6 The impact of ENSO on extreme winter weather of the continental United States
Siegfried Schubert, Yehui Chang, Max Suarez, and Philip Pegion

P3.7 Centers of interannual variability and potential predictability associated with the ENSO events
Wilbur Chen

P3.8 On seasonal variations in the initial drift of a coupled model with implication for ENSO forecasting
Augustin Vintzileos, M. Rienecker, M. Suarez, and S. Schubert

P3.9 Interactive feedback between the Indian Ocean and ENSO
Jong-Seong Kug and In-Sik Kang

P3.10 Analysis of Eastern Indian Ocean cold and warm events
Qin Zhang and Bin Wang

P3.11 The Response of AGCM Tropical Rainfall to SST Forcing
Lisa Goddard

P3.12 The Tropical West Pacific Convection and Cold Surges in Southern South America
Gabriela Müller, Simone Ferraz, and Tercio Ambrizzi

P3.13 A Synoptic Analysis of the PNA Teleconnection Pattern
Steven Feldstein

P3.14 Humidity effects on snowmelt in the Midwest and Great Plains
Patrick Neuman

P3.15 Quantifying the background flow influence upon the extratropical response to tropical forcing
Hui Wang, Robert X. Black, and Rong Fu

P3.16 Evaluation of a new PV-θ atmospheric blocking index
Natalie Gaggini, Marco Carrera, and Wayne Higgins

P3.17 Climate variability and rainfed agriculture in Ceara, Brazil
Liqiang Sun, Huilan Li, and M. Neil Ward

P3.18 ENSO composites of precipitation and moisture fluxes over Central South America during 1960-1998
Guillermo Berri and German Bertossa

P3.19 On the relationship between NAO and PNA in producing the North American winter climate
Muthuvel Chelliah and Huug van den Dool

P3.20 The skill of the ECPC coupled model
Elena Yulaeva and Masao Kanamitsu

P3.21 A study of ENSO prediction using a hybrid-coupled model and the adjoint method for data assimilation
Eli Galanti, Eli Tziperman, Matt Harrison, Antony Rosati, and Ziv Sirkes

Thursday October 23, 2003

1:00-2:30 **POSTER SESSION 4**
Chairperson: John Janowiak

P4.1 Multi-Decadal Regime Shifts in United States Streamflow, Precipitation, and Temperature at the end of the 20th Century
Steven Mauget

P4.2 The Structure of westerly winds and the climate response to global warming
Seok-Woo Son and Sukyoung Lee

P4.3 Impact of Observational Data on Climate Data Assimilation
Seung-On Hwang, Masao Kanamitsu, and Song-You Hong

P4.4 The Inhomogeneity Detection and Trend Re-Estimation in the Time Series of Upper-Air Temperatures
Alexander Sterin

P4.5 A Comparison of Noah and VIC Land Surface Models in Coupled and Forced Simulations
Ji Chen, John Roads, Masao Kanamitsu, and Ana Nunes

P4.6 Fire Danger Forecasts
John Roads

P4.7 Effects of new MODIS land cover map replacement in a regional climate model on surface temperature and heat fluxes
Ismail Yucel

P4.8 Decadal SST change in the tropical Pacific Ocean
Sang-Wook Yeh and Ben P. Kirtman

P4.9 Analysis of bias in the NSIPP coupled model
S. Miller, M. Rienecker, M. Suarez, J. Bacmeister, A. Vintzileos, and P. Pegion

P4.10 An OI-based analysis of global daily precipitation: The prototype algorithm
Pingping Xie, John Janowiak, Phil Arkin, and Yelena Yarosh

P4.11 A 56-year data set of global monthly precipitation and its application in verifying outputs from reanalyses and climate models
Mingyue Chen , Pingping Xie, John Janowiak, Phil Arkin, and Thomas Smith

P4.12 Corrections of radiosonde vertical profiles for deficient ascends
Oleg Alduchov

P4.13 Impact of proper spin-up of land-surface initial conditions on warm season predictability over Northern America simulated by the NCEP GFS coupled with the Noah LSM
Chang-Hsuan Lu and Kenneth Mitchell

P4.14 A stochastic perspective on atmospheric regime behavior
Philip Sura, Matt Newman, Cecile Penland, and Prashant Sardeshmukh

P4.15 Detectability of the changes of probability distribution of seasonal mean fields in the NCEP-SFM hindcast
Tosiyuki Nakaegawa and Masao Kanamitsu

P4.16 Trends in the NCAR/NCEP CDAS reanalysis data: Are they real?
Vern Kousky

P4.17 A variable-resolution regional climate model - Application over North and South America
Jian-Hua Qian

P4.18 The NCEP RSM for IRI/ARCS Regional Applications Project
Hann-Ming Henry Juang, Jun Want, Jongil Han, and Stephen Lord