

CLIVAR AAMP and YOTC MJO Task Force

Monsoon Intraseasonal Variability Modelling Workshop

15-17th June 2010

APEC Climate Center

1463 U-dong, Haeundae-gu, Busan, 612020, KOREA

Lotus Room

**** Tuesday June 15 ****

Introductory Remarks

8:15-8:40am: Gather, Get Name Badges, Be Seated

8:40-8:45am: APCC Director's Welcome: Dr. Chung

8:45-8:50am: Logistics Information

8:50-8:55am: YOTC MJO Task Force Introduction: D. Waliser

8:55-9:00am: CLIVAR AAMP Introduction: H. Hendon

Session 1. MJO/ISO Modelling

(Session Moderators & Discussion leaders: *Chidong Zhang* and *Eric Maloney*)

9:00-10:30am (30 minutes each, including questions):

- a. *Daehyun Kim* - Progress and Issues in Simulating the MJO in GCMs
- b. *Tomoe Nasuno* - MJO Simulations/Hindcasts with NICAM
- c. *Jim Benedict* - The MJO in Uncoupled and Coupled Versions of the Superparameterized CAM/CCSM

10:30-11:30am: Posters and morning break

11:30-12:30am: Discussion: Transferring successes across models. Critical aspects of ocean coupling. Biggest challenges remaining.

12:30-2:00pm: Lunch

Session 2. Process-Oriented Diagnostics/Metrics Relevant to the MJO

(Session Moderators & Discussion leaders: *Harry Hendon* and *Duane Waliser*)

2:00-3:30pm (30 minutes each, including questions):

- a. *In-Sik Kang* - Progress with Convective Parameterization for Improved Simulation of the MJO
- b. *Peter Bechtold* - Progress with Convective Parameterization for Improved Simulation of the MJO at ECMWF
- c. *Xianan Jiang* - Vertical Structure of the Intraseasonal Variability from Contemporary Satellite Data: TRMM, AIRS, and CloudSat

3:30-4:30pm: Posters and afternoon break

4:30-4:40pm: Student/postdoc introductions

4:40-5:40pm: Discussion: Design of process-oriented diagnostics for the improvement of MJO/ISV simulation. What next with convective parameterization?

6:00pm: Welcome Reception courtesy of APCC

**** *Wednesday June 16* ****

Session 3. Simplified Models and Theory

(Session Moderators & Discussion leaders: *Bin Wang* and *Peter Webster*)

9:00-10:30am (30 minutes each, including questions):

- a. *Dave Raymond* - Theory-Based MJO Diagnostics
- b. *Sam Stechmann* - Models for the Skeleton and Muscle of the MJO
- c. *Adam Sobel* - Northward and Eastward WISHE Modes in Mean Westerlies

10:30-11:30am: Posters and morning break

11:30-12:30am: Discussion: Applying insights from theory and simple models to GCMs.

12:30-2:00pm: Lunch

Session 4. Diagnostics/Metrics for Boreal Summer ISV

(Session Moderators & Discussion leaders: *Xiouhua (Joshua) Fu* and *Andy Turner*)

2:00-3:30pm (30 minutes each, including questions):

- a. *Ken Sperber* - Progress and Issues in Simulating Boreal Summer ISV
- b. *Charlotte Demott* - Evaluating the Asian Summer Monsoon System in the Super-Parameterized CCSM
- c. *Xubin Zeng* - The Role of Land Surface Processes in the Boreal Summer Intraseasonal Variability

3:30-4:30pm: Posters and afternoon break

4:30-5:30pm: Discussion: Design of diagnostics for boreal summer ISV. What elements and characteristics need to be captured? Simplicity versus comprehensiveness.

**** Thursday June 17 ****

Session 5. MJO/ISV Forecasting

(Session Moderators & Discussion leaders: *Hai Lin* and *Emilia Jin*)

9:00-10:30am (30 minutes each, including questions):

- a. *Jon Gottschalck* - MJO Forecasting Activities at NOAA's Climate Prediction Center
- b. *Matthew Wheeler* - Forecasting Local Impacts of the MJO with the POAMA Seasonal Prediction System
- c. *Peter Webster* - Exploring the Genesis and Predictability of Intraseasonal Variability

10:30-11:30am: Posters and morning break

11:30-12:30am: Discussion: Connecting planetary-scale metrics/diagnostics to regional climate forecasts: How to develop products from metrics? Next steps of the CLIVAR/WGNE forecast metric activity. How best to utilise the ISV hindcast experiments?

12:30-2:00pm: Lunch

Session 6. MJO/ISV Interactions and Impacts

(Session Moderators & Discussion leaders: *Gabriel Vecchi* and *Holger Meinke*)

2:00-3:30pm (30 minutes each, including questions):

- a. *Adrian Matthews* - The Long Arm of the Madden-Julian Oscillation: You Can Run But You Can't Hide
- b. *Frederic Vitart* - Impact of the MJO on Tropical Cyclones and Northern Extratropical Weather in the ECMWF Forecast System
- c. *Eric Maloney* - Modeling MJO Interactions and Impacts in the America's Warm Pool During Boreal Summer

3:30-4:30pm: Posters and afternoon break

4:30-5:30pm: Discussion: Predictability of regional impacts. How can we apply our MJO/ISV forecast/simulation success to MJO/ISV impacts?

**** *END OF WORKSHOP* ****

POSTERS

Session 1. MJO/ISO Modelling

Deepthi Achuthavarier Tropical Intraseasonal Variability in High-Resolution Climate Simulations

Jiun-Dar Chern Simulations of Madden-Julian Oscillations During the YOTC Period with the Goddard Multi-scale Modeling Framework (MMF)

Hirokazu Endo Tropical Intra-seasonal Variability in a 20-km Mesh MRI/JMA AGCM Incorporating a New Convective Scheme

Chris Holloway High-resolution Modeling of YOTC MJO Cases in the Cascade Project

Emilia Jin Intraseasonal and Seasonal Predictability of Monsoon of High-Resolution Models in Project Athena

Daehyun Kim Intraseasonal Variability in the NASA GISS General Circulation Model

Nicholas Klingaman The Impact of Improved Atmosphere-Ocean Coupling on Simulations of the Intraseasonal Oscillation

Kazuyoshi Oouchi Boreal-Summer Multiscale Intra-Seasonal Variability in NICAM: Current Status and Future Strategy

B.-W. Shen Extended-Range Predictions of Madden-Julian Oscillations with a Global Multiscale Modeling System: Preliminary Results with Three Events during 2008-2009

Session 2. Process-Oriented Diagnostics/Metrics Relevant to the MJO

Stefan Liess Intraseasonal Rainfall Predictions over India and Southeast Asia with a Hierarchy of Forecast Models

Rich Neale Progress with Convective Parameterization for Improved Simulation of the MJO at NCAR

Emily Riley Clouds Associated with the MJO: A New Perspective from CloudSat

Katherine Thayer-Calder Does Tighter Coupling Between a Convection Parameterization and the Environmental Moisture Profile Result in a Better Simulation of Tropical Convection?

Duane Waliser How well can Satellite data Characterize the Water Cycle of the Madden-Julian Oscillation?

Hu Wenting Impacts of Cumulus Schemes and Interaction between Deep and Shallow Convection on Intraseasonal Oscillations Simulations over the Asian Summer Monsoon Region

Chidong Zhang Structural Evolution of Diabatic Heating Associated with the MJO

Hongyan Zhu Convection and MJO Performance in UM7.1

Session 3. Simplified Models and Theory

Emilia Jin Prediction of Monsoon on Intraseasonal and Seasonal Time Scales using “Pacemaker” Prediction System

King-Fai Li Observed Intraseasonal Variability in the Eastern Pacific

Eric Maloney Diagnosis of the MJO in an Aquaplanet General Circulation Model

Tomoki Miyakawa A Study on the Effects of Convection Momentum Transport Associated with Rain Bands within the Madden-Julian Oscillation

Pallav Ray On the Initiation of the Madden-Julian Oscillation (MJO)

David Raymond Convective Quasi-Equilibrium, Kelvin Waves, and the MJO

Sam Stechmann Gravity Waves in Shear and Implications for Organized Convection

Lei Zhou The influence of Background State on the Organization of Madden-Julian Oscillations

Session 4. Diagnostics/Metrics for Boreal Summer ISV

H. Annamalai Role of Internal Processes in Maintaining Boreal Summer intraseasonal Variability

H. Hendon and M.C. Wheeler Eastward and Northward Propagation of Tropical Intraseasonal Convection: MJO and Non-MJO Components

A. Jayakumar Surface Temperature Variability in the Northern Indian Ocean During Boreal Summer

June-Yi Lee A Statistical Model for Prediction of Monsoon Intraseasonal Oscillation

Young-Kwon Lim A New Perspective on the Climate Prediction of Asian Summer Monsoon ISV

M. Rajeevan Active and Break Spells of the Indian Summer Monsoon

A.K. Sahai Probabilistic Real Time Prediction of Monsoon intraseasonal Oscillation

Kenneth Sperber A New Method for Identification of Madden-Julian Events

Andy Turner Is There Regime Behaviour of Monsoon Convection in the Late 20th Century?

Bin Wang Development of Monsoon ISO diagnostics and Evaluation Metrics and Application to the CliPAS ISO Hindcast Experiment

Session 5. MJO/ISV Forecasting

Andrea Alessandri Tropical Intraseasonal Predictability Using CMCC-INGV Dynamical Seasonal Forecasts

Arindam Chakraborty Prediction of Active and break Cycles of Indian Summer Monsoon by the ECMWF Model During YOTC

Jean-Philippe Duvel Tropical Intraseasonal Variability in Seasonal Hindcasts

Xiouhua Fu Biases in Global Reanalysis Datasets Undermine the Forecasting Skill of Tropical Intraseasonal Variability

Hye-Mi Kim Assessment of MJO Predictability with Various Statistical and Dynamical Models

Hai Lin Forecast Skill of the Madden-Julian Oscillation in the CMC ensemble Prediction System

Ian Lloyd Submonthly Indian Ocean Cooling Events and their Interaction with Large-Scale Conditions

Adrian Matthews Real-time Localised Forecasting of the Madden-Julian Oscillation Using Neural Network Models

Harun Rashid Prediction of the Madden-Julian Oscillation with the POAMA dynamical Prediction System

Ann Shelly Predictability and Systematic Error Growth in Met Office MJO Predictions

Augustin Vintzileos The Maritime Continent Prediction Barrier: Traversing versus Collapsing Observed MJO events

Session 6. MJO/ISV Interactions and Impacts

Ahmad Fairudz Jamaluddin Impacts of the Madden-Julian Oscillation on Rainfall, Atmospheric Moisture, and Circulation in Maritime Continent

Kyung-Ja Ha Sub-Seasonal Variabilities and Their Interdecadal Change

Huang-Hsiung Hsu intraseasonal Oscillation in the Western North Pacific – An Inseparable Component of the Multiscale System

Xianan Jiang Dominant Intraseasonal Variability Modes over the Eastern Pacific ITCZ and their Representation in Climate Models

Ping Liang Intraseasonal Oscillation of Meiyu Rainy Season over East Asia

Ji-Hyun Oh Impact of the MJO on the Dirunal Cycle of the Precipitation over the Western Maritime Continent during Northern Hemisphere Winter

Eric Oliver The Madden-Julian Oscillation and the Global Ocean: Local and Remote Forcing

Yanjun Qi Interactions Between the Summer Mean Monsoon and the Intraseasonal Oscillation in the Indian Monsoon Region

Kyong-Hwan Seo The Global Circulation Response to Diabatic Heating Associated with the Madden-Julian Oscillation

Matthew Wheeler Using the MJO for Predictions of Weekly TC Probabilities: An Improved Statistical Model and Comparisons with ECMWF