# Workshop on Tropical Dynamics and the MJO
# January 17-19, East-West Center,
# University of Hawaii, Honolulu Hawaii

## *Day 1, Tuesday January 17, 2012*

**MJO Modeling: Understanding fundamental physics (Chair: Eric Maloney)**

**9:00-9:15** ***Introduction and Logistics, Eric Maloney***

**9:15-9:45** ***Zhiming Kuang, Joseph Andersen,*** Harvard, MJO-like disturbances in aquaplanet simulations with varying ITCZ width

**9:45-10:15** ***Patrick Haertel*** Yale University, LO and behold the Madden Julian Oscillation

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

**10:30- 11:00** ***Bin Wang*****,** U Hawaii/IPRC**,** A Multi-Scale Interaction Model for the Madden–Julian Oscillation

**11:00-11:30** ***Bill Stern, M. Zhao, D. Kim and G. Vecchi*** , GFDL, Columbia, Impact of resolution, physical parameterization and coupling on the representation of tropical intra-seasonal activity in GCMs at GFDL

**11:30-12:00** ***Marcela Ulate,*** U. Miami, An intraseasonal moisture nudging experiment in a tropical channel version of the WRF model: The model biases and the moisture nudging scale dependencies

**12:00 – 12:30** ***Charlotte A. DeMott, Cristiana Stan, and David A. Randall,*** CSU, George Mason, Northward Propagation Mechanisms of the Boreal Summer Intraseasonal Oscillation in ERA-Interim Reanalysis and SP-CCSM

**12:30-1:30** ***Lunch***

**MJO Initiation (Chair: Stefan Tulich)**

**1:30-2:00** ***In-Sik Kang , Min-Seop Ahn*** , Seoul National University, Simulation of the MJO in an Idealized GCM: Initiation and slow eastward propagation

**2:00-2:30** ***Kunio Yoneyama*** , JAMSTEC/U Tokyo,Early results from CINDY2011/DYNAMO field experiment in the view point of observations.

**2:30-3:00** ***Tomoe Nasuno, Masaki Satoh, and Kunio Yoneyama,*** JAMSTEC, U. Tokyo , Forecasts and hindcasts of MJO events during CINDY/DYNAMO field campaign using a global nonhydrostatic model NICAM

**3:00-3:30** ***Break***

**3:30-4:00** ***Pallav Ray, Tim Li*** IPRC/U. Hawaii, On the Relative Roles of Circumnavigating Waves and Extratropics on the MJO

**4:00-4:30** ***Chongbo Zhao , Tim Li*** IAP, Chinese Academy of Sciences, IPRC/Hawaii, Precursor Signals and Processes Associated with MJO Initiation over the Tropical Indian Ocean

**4:30–5:00** ***Kazuyoshi Kikuchi*** IPRC/U. Hawaii, Initiation of the Madden-Julian oscillation

**5:00-5:30** ***Discussion***

## ***Day 2, Wednesday January 18, 2012***

**MJO Modeling: Model process-oriented diagnosis (Chair: In-Sik Kang)**

**9:00 – 9:30** ***Duane Waliser*** , JPL/Cal Tech, Vertical Structure and Diabatic Processes of the MJO: A Global Model Evaluation Project

**9:30-10:00** ***Traute Crueger , Bjorn Stevens,*** Max Planck Inst, The Madden-Julian oscillation in ECHAM6: Multivariate quantitative assessment of AMIP and coupled experiments as a function of model resolution

**10:00–10:30** ***Break (and posters)***

**10:30-11:00** ***Hiroaki Miura, Takafumi Maeda (Lead Author), and Masahide Kimoto,*** University of Tokyo**,** Comparisons of the Madden-Julian Oscillation in different versions of MIROC climate model

**11:00- 11:30** ***Yen-Ting Hwang , Dargan Frierson,*** U. Washington**,** How Does Tokioka Parameter Influence Mean State Climate and Climate Sensitivity? - An Aqua-planet GCMs Comparison Study

**11:30-12:00** ***H. Annamalai,*** *IPRC/U. Hawaii****,*** Role of internal processes in maintaining boreal summer intraseasonal variability

**12:00-1:15** ***Lunch***

**MJO Multiscale interactions (Chair: Dave Randall)**

**1:15-1:45** ***Masaki Satoh, Kazuyoshi Oouchi, Akira T. Noda, Hiroshi Taniguchi, Hiroaki Miura, Tomoe Nasuno, Hirofumi Tomita,*** U. Tokyo, JAMSTEC, IPRC, AICS, Multi-scale structure of the Madden Julian Oscillations simulated by NICAM

**1:45-2:15** ***Tomoki Miyakawa, Yukari N. Takayabu, Mitchell W. Moncrieff, Tomoe Nasuno, Hiroaki Miura, and Masaki Satoh,*** U Tokyo, JAMSTEC, NCAR ,Diagnosis of convective momentum transport by rainbands within a Madden-Julian oscillation in a global nonhydrostatic model NICAM

**2:15-2:45** ***Hiroshi Taniguchi, Bin Wang, Kazuyoshi Kikuchi,*** IPRC/U. Hawaii, Multi-scale interaction of organized tropical convection by NICAM Aqua-planet Experiment

**2:45-4:15** ***Poster viewing***

**4:15-4:45** ***Tim Li, Pang-chi Hsu,*** IPRC/U. Hawaii, Upscale Feedback of Synoptic-scale Disturbances to the Madden-Julian Oscillation

**4:45 – 5:15** ***Xiouhua (Joshua) Fu, Pang-chi Hsu*** , IPRC/U. Hawaii, Extended-range Ensemble Forecasting of the Genesis of Tropical Cyclone Nargis (2008): Modulation of Madden-Julian Oscillation

**5:15-5:30** ***Discussion***

## ***Day 3, Thursday January 19, 2012***

**Tropical Mean State and Variability under Climate Change (Chair: Duane Waliser)**

**9:00 – 9:30** ***Dargan Frierson , Y.-T. Hwang, D. Kim,*** U Washington, Columbia**,** Changes in Tropical Variability with Global Warming in Aquaplanet GCMs

**9:30 -10:00** ***Shang-Ping Xie, Nat Johnson, and Jian Ma,*** IPRC/U. Hawaii, Dynamics of tropical rainfall and circulation change under global warming

**10:00-10:15** ***Break***

**10:15 – 10:45** ***Eric Maloney, Shang-Ping Xie*** CSU, IPRC/U Hawaii, Impact of global warming SST patterns on MJO activity in an aquaplanet GCM

**10:45-11:15** ***Monika Esch , Kevin Hodges,*** Max Planck Inst, Tropical cyclones in the MPI Earth System Model

**11:15 – 11:45** ***Benjamin Möbis , Bjorn Stevens,*** Max Planck Inst, Exploring the double ITCZ phenomenon with the ECHAM6 aqua-planet

**11:45 – 12:15** ***Wrap-up and discussion***

**Posters**

***Pedro N. DiNezio, Ben P. Kirtman, Amy C. Clement, Sang-Ki Lee, Gabriel A. Vecchi, and Andrew Wittenberg,*** IPRC/U. Hawaii , U. Miami, GFDL. Opposing Changes in Mean Climate Diminish the Sensitivity of ENSO Simulations to Increasing Greenhouse Gases (poster)

***Pallav Ray, Chidong Zhang, Mitch Moncrieff and Jim Dudhia,*** IPRC, Miami, NCAR , Role of the Mean State on the MJO Initiation in a Tropical Channel Model (poster)

***Min-Seop Ahn , In-Sik Kang***, Seoul National Univ, Simulation of the MJO in an Idealized GCM: Analysis of equatorial wave structure (poster)

***Patrick Haertel, Kathy Straub (Lead Author),*** Sussquehanna, Yale**,** Assessing the MJO in observations and model output (poster)

***Walter Hannah, Eric Maloney, Myong-In Lee*** , CSU, Ulstan/Korea, Impacts of Enhanced Low-Level Cumulus Entrainment on the MJO (poster)

***Pang-chi Hsu , Tim Li,*** IPRC/U. Hawaii, Role of the Boundary Layer Moisture Asymmetry in Causing the Eastward Propagation of the Madden-Julian Oscillation (poster)

***James J. Benedict, Adam H. Sobel, Eric D. Maloney, Dargan M. Frierson,*** CSU, Columbia, UW, Gross Moist Stability as a Diagnostic of Intraseasonal Convection in the CAM, SP-CAM, and GFDL AM (poster)

***Kate Thayer-Calder and D. A. Randall***, CSU, Improvement of Downdrafts in Convective Parameterizations (poster)

***Kazuaki Yasunaga***, ***Masanori Yoshizaki, Shin-ichi Iga, Tomoe Nasuno, and Masaki Satoh***, JAMSTEC/U Tokyo, RIKEN, MJO-like precipitation systems simulated in an aquaplanet NICAM

***Stefan Tulich***, NOAA CIRES, Simulations of an aquaplanet using the WRF model

***Karl Stein***, U. Hawaii/IPRC, Phase synchronization of ENSO with the Annual Cycle

***Aaron Levine and Fei-Fei Jin***, U. Hawaii/IPRC The relationship of ENSO with the tropical mean state and the influence of external forcing

***June-Yi Lee and Bin Wang***, U. Hawaii/IPRC, Multi-model ensemble prediction for the MJO.

***Pyonghwa Jang and In-Sik Kang***, Seoul National University, Hindcast experiments of ISO using successive manifold scheme