Understanding and Prediction of Monsoon Weather and Climate

The Centre for Australian Weather and Climate Research (CAWCR), a partnership between CSIRO and the Australian Bureau of Meteorology, will hold its sixth annual workshop, from 12-15 November 2012. The workshop will be held at the Bureau of Meteorology, 700 Collins Street, Melbourne.

The main focus of this year's workshop is on modelling (simulation and prediction) but will include observational studies of physical processes and variability that are pertinent to improving modelling capability (including improved understanding so as to guide model development).

Key themes for the workshop:
- Observed monsoon variability from Weather to Climate
- Physical Processes
- Monsoon NWP
- Intra-seasonal/Seasonal Prediction of the Monsoon
- Monsoon Decadal Prediction and Climate Change

Keynote Presenters:
A number of prominent scientists and experts from overseas, Australian research agencies and universities will present at the meeting. Keynote presentations will be given by the following international experts:

- Gill Martin (MetOffice, UK)
- Akio Kitoh (MRI, Japan)
- Ken Sperber (PCMDI, LLNL, USA)
- Eric Maloney (Colorado State University, USA)
- William Boos (Yale, USA)
- Sean Milton (MetOffice, UK)
- Masayuki Nakagawa (JMA, Japan)
- Chidong Zhang (University of Miami, USA)
Understanding and Prediction of Monsoon Weather and Climate - abstracts of the sixth CAWCR Workshop
12 November - 15 November 2012, Melbourne, Australia

CAWCR Technical Report No. 056

Keith A. Day (editor)

November 2012
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FOREWORD

The Centre for Australian Weather and Climate Research (CAWCR) is a partnership between Australia’s leading atmosphere and ocean research agencies – CSIRO) and the Bureau of Meteorology. CAWCR, established in 2007, jointly manages the science capability within the Bureau and CMAR providing a single centre of research excellence. This year’s CAWCR Workshop, “Understanding and Prediction of Monsoon Weather and Climate” is the sixth Annual Workshop under the auspices of the Centre, continuing the series originating within the Bureau of Meteorology Research Centre.

The focus of the workshop on monsoons is motivated by the primary role that the Australian-Asian monsoon plays in the climate of Australia and the need to better predict and simulate monsoon weather and climate in order to provide more useful advice on weather and climate variability and change to society. However, monsoons are fundamental to many other regions of the world; hence the focus of the workshop is not limited to the Australian-Asian monsoon.

The aims of the meeting are to:
1) Review and assess the current understanding of the processes involved in monsoon climate (especially for Australia) on time scales from weather to seasonal to climate;
2) Identify major challenges in simulating the monsoon in the Australasian region and globally at these time scales; and
3) Provide a forum for monsoon researchers from different disciplines (weather, seasonal prediction, climate and climate change) to share ideas, enhance collaboration and develop a coordinated approach to address challenges in monsoon prediction and simulation in Australasia.

The key themes covered in this year’s workshop are:

(i) Observed monsoon Variability from Weather to Climate;
(ii) Prediction of monsoon weather;
(iii) Representing monsoons in weather and climate models;
(iv) Intra-seasonal/Seasonal Prediction of the Monsoon;
(v) Monsoon Decadal Prediction and Climate Change

A number of prominent scientists and experts from overseas, Australian research agencies and universities have been invited to give presentations. Keynote speakers include Dr Gareth Berry (Monash University, Australia), Dr William Boos (Yale University, USA), Dr Akio Kitoh (Climate Research Department, Meteorological Research Institute, Tsukuba, Japan), Dr Eric Maloney (Department of Atmospheric Science, Colorado State University, USA), Dr Gill Martin (Met Office, Exeter, UK), Dr Peter May (CAWCR, Bureau of Meteorology, Australia), Dr Sean Milton (Global Model Evaluation and Development, Met Office, Exeter, UK), Dr Masayuki Nakagawa (Numerical Prediction Division, Japan Meteorological Agency, Tokyo, Japan), Dr Leon Rotstayn (CAWCR, CSIRO Marine and Atmospheric Research, Australia), Dr Kenneth Sperber (Program for Climate Model Diagnosis and Intercomparison, Lawrence Livermore National Laboratory, USA), Dr Matt Wheeler (CAWCR, Bureau of Meteorology, Australia), and Dr Chidong Zhang (Division of Meteorology and Physical Oceanography, University of Miami, Miami, USA),

The Workshop also includes two panel session aimed to address important questions in the field of seasonal prediction of monsoon and monsoon under climate change. We are grateful for these expert contributions and to all the participants’ contributions to the debate and discussions.

This workshop is sponsored by the Bureau of Meteorology, the Australian Climate Change Science Program (ACCSP), the Pacific-Australian Climate Change Science and Adaptation Planning Program (PACCSAP), and CSIRO (Climate Adaptation Flagship, CMAR and the Climate and Atmosphere
Theme). We are also particularly grateful to Fujitsu and Intel for their generous support of this workshop.

Finally, we would like to thank the members of the organising committee for their efforts, comprising: Aurel Moise (Chair), Harry Hendon, Christian Jakob, Shoni Maguire, Leon Rotstayn, and John McBride. Meryl Wiseman, Val Jemmeson, Mark Bervanakis, Anu Arora and Julie Sortino provided excellent administrative support.

**Tom Keenan**

Director  
Centre for Australian Weather and Climate Research:  
A partnership between the Australian Bureau of Meteorology and CSIRO  

November 2012
The Centre for Australian Weather and Climate Research is a partnership between CSIRO and the Bureau of Meteorology.