

# Coupled Modelling and Prediction :

## FROM WEATHER TO CLIMATE

CAWCR 9<sup>th</sup> Annual Workshop  
19-22 OCTOBER 2015



Venue: Bureau of Meteorology, Melbourne, Australia  
<http://cawcr.gov.au/events/AWS9/>

<b>Monday 19<sup>th</sup> October</b>		
<b>9:00</b>	<b>INTRODUCTION AND HOUSEKEEPING</b> WELCOME: Dr Peter Craig	
9:15	<b>Keynote: Kamal Puri (BoM)</b>	Modelling across scales: towards seamless prediction and projection
<b>Short to medium range coupled modelling</b> <b>Session 1 Chairs: Tim Johns and Hendrik Tolman</b>		
9:45	<b>Keynote: Hendrik Tolman (NOAA)</b>	Short to medium range coupled modeling at the US National Weather Service; moving toward unified modeling approaches
10:15	Chris Chambers (BoM)	The effect of East Australian Current eddies on weather in east coast lows
<b>10:30-11:00 Morning Tea</b>		
11:00	<b>Keynote: Tim Johns (UKMO)</b>	Global coupled NWP: recent research progress at the Met Office
11:30	Paul Sandery (BoM)	An ocean perspective of coupled short range prediction
11:45	Claire Vincent (U Melbourne)	Modelling the composite mesoscale signature of the MJO over the Maritime Continent
12:00	Alex Babanin (Swinburne Univ)	Wave-Coupled Processes in Air-Sea Modelling: from Turbulence to Climate
<b>12:30 – 14:00 Lunch</b>		
14:00	Gary Dietachmayer (BoM)	Towards NWP at convection-permitting resolution at the BoM
14:15	Michael Naughton (BoM)	ACCESS Ensemble NWP status and plans
<b>Land-atmosphere interactions (Part 1)</b> <b>Session 2 Chairs: Gab Abramowitz and Ruth Lorenz</b>		
14:30	<b>Keynote: L. Ruby Leung (PNL)</b>	From diurnal variability to land-atmosphere interactions: Implications for high resolution modeling
15:00	Rachel Law (CSIRO)	Interactions between land carbon, climate, and aerosols in ACCESS-ESM1 historical simulations
15:20	Prasanth Divakaran (BoM)	Lightning Talk
15:25	Haifeng Zhang (UNSW)	Lightning Talk
<b>15:30- 16:00 Afternoon Tea</b>		
16:00	Gab Abramowitz (UNSW)	Evaluation of land surface models against Fluxnet observations
16:30	Vanessa Haverd (CSIRO)	Exploring and attributing Australian carbon cycle responses to water availability
16:50	Xingjie Lu (CSIRO)	Lightning Talk
16:55	Ruth Lorenz (UNSW)	Lightning Talk
<b>17:30 ICEBREAKER</b>		



Australian Government  
Bureau of Meteorology

## Collaboration for Australian Weather and Climate Research

A research partnership between CSIRO and the Australian Bureau of Meteorology



# Coupled Modelling and Prediction :

## FROM WEATHER TO CLIMATE

CAWCR 9<sup>th</sup> Annual Workshop  
19-22 OCTOBER 2015



Venue: Bureau of Meteorology, Melbourne, Australia  
<http://cawcr.gov.au/events/AWS9/>

<b>Tuesday 20 October, 2015</b> Ocean-Atmosphere Coupled Processes Session 3 Chairs: Debra Hudson and Matt Wheeler		
09:00	<b>Keynote: Matthew England (UNSW)</b>	Pacific wind-driven circulation variability and its role in hiatus / accelerated warming decades
09:30	Julie Arblaster (BoM)	Decadal variability in global temperatures and Antarctic sea ice
09:45	Richard Matear (CSIRO)	Modelling the Earth System with ACCESS to assess the potential carbon climate feedbacks on climate change
10:00	Chaojiao Sun (CSIRO)	Long-term poleward trend of the Pacific South Equatorial Current bifurcation from high-resolution ocean hindcast using OFAM3
10:15	Andrew Marshall (BoM)	Initiation and amplification of the Ningaloo Niño
<b>10:30-11:00 Morning Tea</b>		
11:00	<b>Keynote: Wenju Cai (CSIRO)</b>	A cross-time scale coupling and impact on frequency of extreme El Niño events.
11:30	Harun Rashid (CSIRO)	ENSO variability and change in the ACCESS coupled models
11:45	Dietmar Dommenges (Monash)	The seasonally changing cloud feedbacks contribution to the ENSO seasonal phase locking
12:00	Eunpa Lim (BoM)	Understanding and predicting the contrast of Australian springtime rainfall of 1997 and 2002
12:15	Kevin Walsh (U Melbourne)	Coupled ocean-atmosphere processes in tropical cyclones on short and long timescales
<b>12:30 – 14:00 Lunch</b>		
<b>High Impact Weather</b> Session 4 Chairs: Adrian Lock and Beth Ebert		
14:00	<b>Keynote: Adrian Lock (UKMO)</b>	Recent fog forecasting research at the Met Office
14:30	<b>Keynote: Hendrik Tolman (NOAA)</b>	Prediction High Impact Weather: The Weather Ready Nation approach
15:00	John Nairn (BoM)	Australia's new heatwave service: recent performance
15:15	Valentijn Pauwels (Monash)	Improving flood forecasting skill using remote sensing data
<b>15:30-16:00 Afternoon Tea</b>		
16:00	Michael Rumsewicz (Bushfire CRC)	Coupled Systems: From physical science to community safety
16:20	Justin Robinson (BoM)	Developing and improving the flood forecasting service
16:35	Vinodkumar (BoM)	More accurate fire danger warnings through the use of NWP systems
16:45	Xingbao Wang (BoM)	Tropical cyclone forecasting using the high resolution ACCESS model
16:55	Ghyslaine Bosch (U Melbourne)	Lightning Talk



Australian Government  
Bureau of Meteorology

## Collaboration for Australian Weather and Climate Research

A research partnership between CSIRO and the Australian Bureau of Meteorology

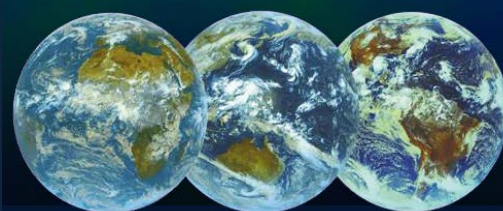


# Coupled Modelling and Prediction :

## FROM WEATHER TO CLIMATE

CAWCR 9<sup>th</sup> Annual Workshop  
19-22 OCTOBER 2015

Venue: Bureau of Meteorology, Melbourne, Australia  
<http://cawcr.gov.au/events/AWS9/>



<b>Wednesday, 21 October, 2015</b> <b>High Impact Weather (continued)</b> <b>Session 4 Chair: Adrian Lock</b>		
09:00	<b>Keynote: Beth Ebert (BoM)</b>	Emerging methods for high impact weather prediction and observation
09:30	Jeff Kepert (BoM)	High-resolution ensemble prediction of an East Coast Low
<b>Land-atmosphere interactions (Part 2)</b> <b>Session 5 Chair: Ruth Lorenz</b>		
09:45	<b>Keynote: Andy Pitman (UNSW)</b>	How well do land models handle extremes?
10:15	Huqiang Zhang (BoM)	Transpose AMIP experiments for testing the potential impacts of land-surface models on ACCESS NWP
<b>10:30-11:00 Morning Tea</b>		
11:00	Yongqiang Zhang (CSIRO)	Multi-decadal trend in terrestrial evapotranspiration and its implication on global climate models
11:20	Eva van Gorsel (CSIRO)	Impact of summer heatwaves on forest productivity in Southern Australia
<b>Coupled data assimilation and reanalysis</b> <b>Session 6 Chairs: Dale Barker and Craig Bishop</b>		
11:40	<b>Keynote: Craig Bishop (NRL)</b>	Probabilistic state estimation for coupled models
12:10	John Le Marshall (BoM)	Reanalysis Benefits from Higher Spectral Spatial and Temporal Resolution EOS
<b>12:30 – 14:00 Lunch</b>		
14:00	<b>Keynote: Dale Barker (UKMO)</b>	Towards a UM-based regional reanalysis for Europe
14:30	Yonghong Yin (BoM)	Coupled data assimilation for seasonal prediction
14:45	Maggie Zhao (BoM)	Impact of salinity assimilation on seasonal forecasts
15:00	Terry O’Kane (CSIRO)	Oceanic teleconnections as revealed in models and reanalyses with application to decadal forecast initialisation
15:15	Eng Ching (BoM)	<a href="#">Lightning Talk</a>
15:20	Jenny A. Fisher (U Wollongong)	<a href="#">Lightning Talk</a>
<b>15:25-16:00 Afternoon Tea</b>		
16:00	David Walters (UKMO)	The new Met Office Coupled Atmosphere/Land/Ocean/Sea Ice Data Assimilation System
16:20	Peter Steinle (BoM)	Performance of convective scale DA during the Sydney Forecast Demonstration Project
16:40	Paul Scott Hartlipp (UNSW)	<a href="#">Lightning Talk</a>
16:45	Andy Taylor (BoM)	<a href="#">Lightning Talk</a>

# Coupled Modelling and Prediction :

## FROM WEATHER TO CLIMATE

CAWCR 9<sup>th</sup> Annual Workshop  
19-22 OCTOBER 2015



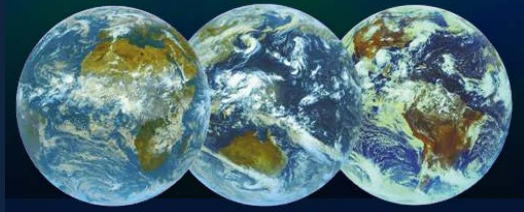
**Venue:** Bureau of Meteorology, Melbourne, Australia  
<http://cawcr.gov.au/events/AWS9/>

<b>Thursday, 22 October, 2015</b>		
<b>Scientific Computing Futures and Challenges</b>		
<b>Session 7 Chair: Tim Pugh</b>		
09:00	<b>Keynote: Lesley Seebeck (BoM)</b>	Challenges to Strategic Innovation and Technology
09:30	Tim Pugh (BoM)	Scientific computing plans in the Bureau, opportunities and challenges
09:50	Phil Brown (Cray)	Trends in Supercomputing & Analytics and implications for Earth System Modelling
10:10	Ben Evans (NCI)	NCI enabling Earth Systems Science using High Performance Computing & Data
<b>10:30-11:00 Morning Tea</b>		
11:00	Luke Mason (Intel Parallel Computing Centre)	Optimisation of Unified Model Radiation Calculations for Xeon Phi
11:20	Rob Bell (CSIRO)	From CSIRAC to Cray (again) and onwards
11:40	Discussion : Computing future opportunities and challenges – <b>Facilitator: Tim Pugh</b>	
<b>12:30 – 14:00 Lunch</b>		
<b>Current status and future opportunities</b>		
<b>Session 8 Chairs: David Bi and Tony Hirst</b>		
14:00	Dale Barker (UKMO)	Status/Plans for NWP Upgrades Over the Next 5 Years at the Met Office
14:20	Gary Brassington (BoM)	Short to medium-range prediction: success and challenges
14:35	Oscar Alves (BoM)	Seasonal prediction : towards ACCESS-S
14:50	David Walters (UKMO)	Global coupled model development across timescales
<b>15:10-15:40 Afternoon Tea</b>		
15:40	<b>Keynote: Tongwen Wu (BCC)</b>	Beijing Climate Centre Climate System Model (BCC-CSM) development and its operational applications for sub-seasonal to seasonal prediction
16:10	Tony Hirst (CSIRO)	Towards CMIP6 – CSIRO plans
16:30	Tim Johns (UKMO)	Towards CMIP6: Met Office Modelling Plans and Expectations
<b>16:50</b>	<b>Dr Peter Craig:</b>	<b>CLOSING THOUGHTS</b> The Opportunities and the Challenges Presentation of Early Career Scientist certificate

# Coupled Modelling and Prediction :

## FROM WEATHER TO CLIMATE

CAWCR 9<sup>th</sup> Annual Workshop  
19-22 OCTOBER 2015



Venue: Bureau of Meteorology, Melbourne, Australia  
<http://cawcr.gov.au/events/AWS9/>

## Lightning Talks

Schedule	Author	Title
Mon 15:20	Prasanth Divakaran	Mesoscale quasi-zonal alignments in SST spatial correlation ellipses, its link to ocean 'striations' and nonlinear air-sea coupling
Mon 15:25	Haifeng Zhang	Investigating Sea Surface Temperature Diurnal Variation over the Tropical Warm Pool Using MTSAT-1R Data
Mon 16:50	Xingjie Lu	Global terrestrial ecosystem carbon storage dynamics projected by CABLE are traceable by a traceability framework
Mon 16:55	Ruth Lorenz	Influence of land-atmosphere feedbacks on temperature extremes in the GLACE-CMIP5 ensemble
Tue 16:55	Ghyslaine Bosch	A new 'energetic' approach into the variability and trends of the Hadley circulation and energy transports to the high southern latitudes
Wed 15:15	Eng Ching	Modelling the Fire Weather of the Blue Mountains Fires of 17 October 2013
Wed 15:20	Jenny A. Fisher	Future Opportunities in Atmospheric Chemistry-Climate Coupled Modelling
Wed 16:40	Paul Scott Hartlipp	Estimation of acoustic properties of the East Australian Waters
Wed 16:45	Andy Taylor	Impact of NWP spatial resolution on ocean barotropic surge response



Australian Government  
Bureau of Meteorology

Collaboration for Australian  
Weather and Climate Research

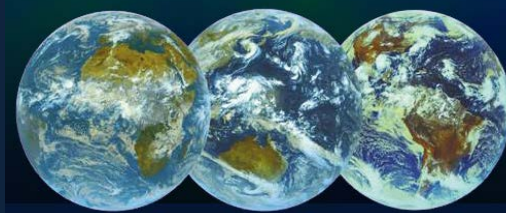
A research partnership between CSIRO and the Australian Bureau of Meteorology



# Coupled Modelling and Prediction : FROM WEATHER TO CLIMATE

CAWCR 9<sup>th</sup> Annual Workshop  
19-22 OCTOBER 2015

Venue: Bureau of Meteorology, Melbourne, Australia  
<http://cawcr.gov.au/events/AWS9/>



## Workshop Sponsors



## Workshop Organisers



**Australian Government**  

---

**Bureau of Meteorology**

