

**Monday 23 November 2020****Fire, floods, and storms: high impact weather and climate****Introduction**Session chair: Bertrand Timbal (Bertrand.Timbal@bom.gov.au)

9:00	Bertrand Timbal	Acknowledgement of Country
9:05	Andrew Johnson	Workshop opening
9:15	Gilbert Brunet	Toward Weather and Climate Earth-system Prediction and Insight (keynote)
9:55	Mika Peace	Coupled fire-atmosphere modelling of extreme fire events

10:15-10:30 Morning Tea

BushfiresSession chair: Graham Hawke (Graham.Hawke@bom.gov.au)

10:30	Jeff Keper	A fast, physically based scheme for predicting long-range ember transport in bushfire plumes
10:45	Paul Fox-Hughes	The Australian Fire Danger Rating System: Achievements and Challenges
11:00	Agnes Lane	The Bureau's engagement in national and international satellite activities to support planning, response, and recovery for bushfires.
11:15	Andrew Dowdy	Multi-week to seasonal fire weather prediction and customer applications for the 2020/21 summer
11:30	Pep Canadell	Multi-decadal increase of forest burned area in Australia linked to climate change (keynote)

12:10-13:30 Lunch Break

Tropical CyclonesSession chair: Jeff Keper (Jeff.Keper@bom.gov.au)

13:30	Kevin Tory	Tropical cyclone formation regions in CMIP5 models: A global performance assessment and projected changes
13:45	Joe Courtney	(Non-)intervention strategies for tropical cyclone forecasting
14:00	Rabi Rivett	Tropical Cyclone Track Forecasting Using Super Ensembles

14:15-14:30 afternoon tea

High Impact Weather and ClimateSession chair: Rob Warren (Rob.Warren@bom.gov.au)

14:30	Chris Lucas	Ensemble Modelling of Volcanic Ash in the VAAC
14:45	Francois Delage	Impact of global warming and ENSO on seasonal rainfall extremes
15:00	Surendra Rauniyar	Victorian rainfall past, present and future
15:15	Lisa Alexander	Intercomparison of rainfall extremes in global in situ, space-based and reanalysis products
15:30	Cat de Burgh-Day	Introduction to Gather Town (15min)

15:45-17:20 Social break and poster session

17:20	Joanne Robbins	Progress in impact-based forecasting across timescales: from impact data to risk forecasts (keynote talk chaired by Debbie Hudson (Debbie.Hudson@bom.gov.au))
--------------	-----------------------	--

18:00-20:00

Ice breaker at Gather Town

**Tuesday 24 November 2020****Bringing extremes into focus: Enhanced assimilation and observation****Data assimilation**Session chair: Chris Tingwell (Chris.Tingwell@bom.gov.au)

9:00	Peter Bauer	The role of data assimilation for creating Digital Twins of the Earth system (keynote)
9:40	Peter Steinle	Data Assimilation for the Bureau's Operational Systems: Aims and Challenges
9:55	Fiona Smith	Status and recent advances in assimilation of satellite data in Bureau weather prediction models
10:10	Pavel Sakov	Development of AOM2/EnKF ocean forecasting system

10:25-10:40 Morning Tea

10:40	Thomas Auligne	The Joint Effort for Data assimilation Integration (JEDI) (keynote talk chaired by Peter Steinle (Peter.Steinle@bom.gov.au))
--------------	-----------------------	---

Convective HazardsSession Chair: Harald Richter (Harald.Richter@bom.gov.au)

11:20	Alain Protat	Radar rainfall, wind, and hail analysis and nowcasting developments at BoM
11:35	Claire Vincent	Variability, clouds, and extreme rain in the Maritime Continent
11:50	Joshua Soderholm	Conventional and experimental analysis of the 19 Jan 2020 Melbourne hailstorm - what can we learn for future nowcasting services

12:05-13:00 Lunch Break

13:00	Jason Lee Kai Wei	Heat on human health and work productivity – heat strain over heat stress (keynote talk chaired by Harald Richter)
--------------	--------------------------	---

ObservationsSession Chair: Diana Greenslade (Diana.Greenslade@bom.gov.au)

13:40	Shane Keating	The Surface Water Ocean Topography (SWOT) satellite mission: Challenges and opportunities
13:55	Ryan Lowe	Enhancing Australia's network of coastal wave observations using low cost wave buoys
14:10	Leon Majewski	Himawari for detecting and predicting severe weather
14:25	David Gooding	Opportunities from Non-traditional Observations
14:40	Michelle Heupel	The role of Australia's Integrated Marine Observing System in understanding our future oceans

15:20-16:00 Social break and poster session

Supporting InfrastructureSession chair: Tim Pugh (Tim.Pugh@bom.gov.au)

16:00	Justin Freeman	Cloud HPC
16:15	Steve Gillard	Scaling research on the cloud with AWS HPC and data sharing
16:30	Gregory Ayers	ACCESS-NRI: what it is, what was proposed, and why
16:45	Ilene Carpenter	TBD

17:00-17:20 Break

17:20	Sonia Seneviratne	Climate change and extreme events: Why every year matters (Keynote talk chaired by Beth Ebert)
--------------	--------------------------	--



Wednesday 25 November 2020		
Integrated environmental prediction system		
9:00	Andy Brown	Integrated environmental prediction: ECMWF progress and plans (keynote talk chaired by Gilbert Brunet (<i>Gilbert.Brunet@bom.gov.au</i>))
High resolution modelling		
Session Chair: Eric Schulz (<i>Eric.Schulz@bom.gov.au</i>)		
9:40	Charmaine Franklin	Towards improving weather prediction through high resolution modelling systems
9:55	Hongyan Zhu	A case study of a tropical low over northern Australia using high resolution model
10:10	Dean Sgarbossa	Using high resolution NWP in forecasting impacts of severe weather
10:25-10:40 Morning Tea		
10:40	Mike Flannigan	Global Fire Weather Trends (keynote talk chaired by Paul Fox-Hughes (<i>Paul.fox-hughes@bom.gov.au</i>))
coupled seasonal modelling		
Session Chair: Cat de Burgh-Day (<i>Catherine.deburgh-day@bom.gov.au</i>)		
11:20	Oscar Alves	Indo-Pacific PEG
11:35	Chen Li	The importance of model mean state biases - a perspective on tropical teleconnections
11:50	Tim Cowan	Forecasting northern Australian wet season bursts in ACCESS-S1
12:05-13:30 Lunch Break		
13:30	Talei Parker	Balancing the value of integrated data and privacy in today's data economy (keynote talk chaired by Carla Mooney (<i>Carla.Mooney@bom.gov.au</i>))
Ensemble forecasts		
Session Chair: Hongyan Zhu (<i>Hongyan.zhu@bom.gov.au</i>)		
14:10	Shaun Cooper	City Ensemble: Uncertainty information in high resolution NWP
14:25	Tom Gale	IMPROVER post-processing of NWP ensembles
14:40	Alberto Meucci	Projected 21st century changes in extreme wind-wave events predicted by an ensemble of global ocean wave climate models
14:55-15:10 Afternoon Tea		
Water and climate		
Chair: Tony Hirst (<i>Tony.Hirst@bom.gov.au</i>)		
15:10	Andrew Frost	Work underway in the R2O water modelling team
15:25	Q J Wang	Forecasting water availability and demand to inform water use and management
15:40	Simon Marsland	The ACCESS contributions to CMIP6
15:55	Paul Sandery	Coupled data assimilation in the CSIRO CAFE system
16:10-17:20		
Social break and poster session		
17:20	Humphrey Lean	Progress with km scale and sub-km scale modelling for high impact weather and climate at the Met Office (keynote talk chaired by Charmaine Franklin (<i>Charmaine.Franklin@bom.gov.au</i>))



Thursday 26 November 2020		
The future of services		
Weather and climate impacts		
Session chair: Matt Wheeler (matthew.wheeler@bom.gov.au)		
9:00	Tim Palmer	A vision for numerical weather prediction in 2030 (keynote)
9:40	Harry Hendon	Long Lead Prediction of the 2019 Climate Extremes
9:55	Pandora Hope	Event Attribution with S2S systems
10:10	Chelsea Jarvis	Climate Mates: Connecting the BOM and Graziers in northern Australia
10:25-10:40 Morning Tea		
Weather and climate impacts		
Session chair: Carla Mooney (Carla.Mooney@bom.gov.au)		
10:40	Julia Chasco	Placing the user at the heart of innovative early warning services (keynote)
11:20	Mitchell Black	Using extreme/compound events in risk assessments – an example from the Electricity Sector Climate Information (ESCI) project
11:35	Steve Siems	Observations of Precipitation over the Southern Ocean
11:50	Robert Taggart	Forecasting the extremes: automation or manual intervention for high end rainfall event
12:05 -13:30 Lunch Break		
Weather and climate impacts		
Session chair: Andrew Dowdy (Andrew.Dowdy@bom.gov.au)		
13:30	Nerilie Abram	Connections of climate change and variability to large and extreme forest fires in southeast Australia (keynote)
14:10	Neelesh Rampal	Machine Learning for Imbalanced Data – Lightning and Drought Forecasting
14:25	Mandi Thran	Developing a multi-scale early warning system for Australia's coastal flooding and erosion hazards
14:40	Hanh Nguyen	Understanding flash droughts and their predictability
14:55-15:10 Afternoon Tea		
Future Services		
Session chair: Deryn Griffiths (Deryn.Griffiths@bom.gov.au)		
15:10	Michael Foley	New capability for forecast verification
15:25	Narendra Tuteja	Hydrology Science Plan of the Bureau of Meteorology – prioritization process and potential future directions
15:40	John Sharples	National GFE: how Research is supporting the move to national production
15:55	Baden Hall	Enabling Better Decisions
16:10-17:10		
Social break and poster session		
17:10	Paul Davies	impact forecasting and warnings - what are the next steps (keynote talk chaired by Beth Ebert (Beth.Ebert@bom.gov.au))

Bureau of Meteorology

Annual R&D Workshop

Online | 23–26 November 2020

A Land of Storms, Floods and Bushfires:
Seamless and Integrated Forecasting



17:50- 18:00	Bertrand Timbal	Closing remark
-----------------	-----------------	----------------