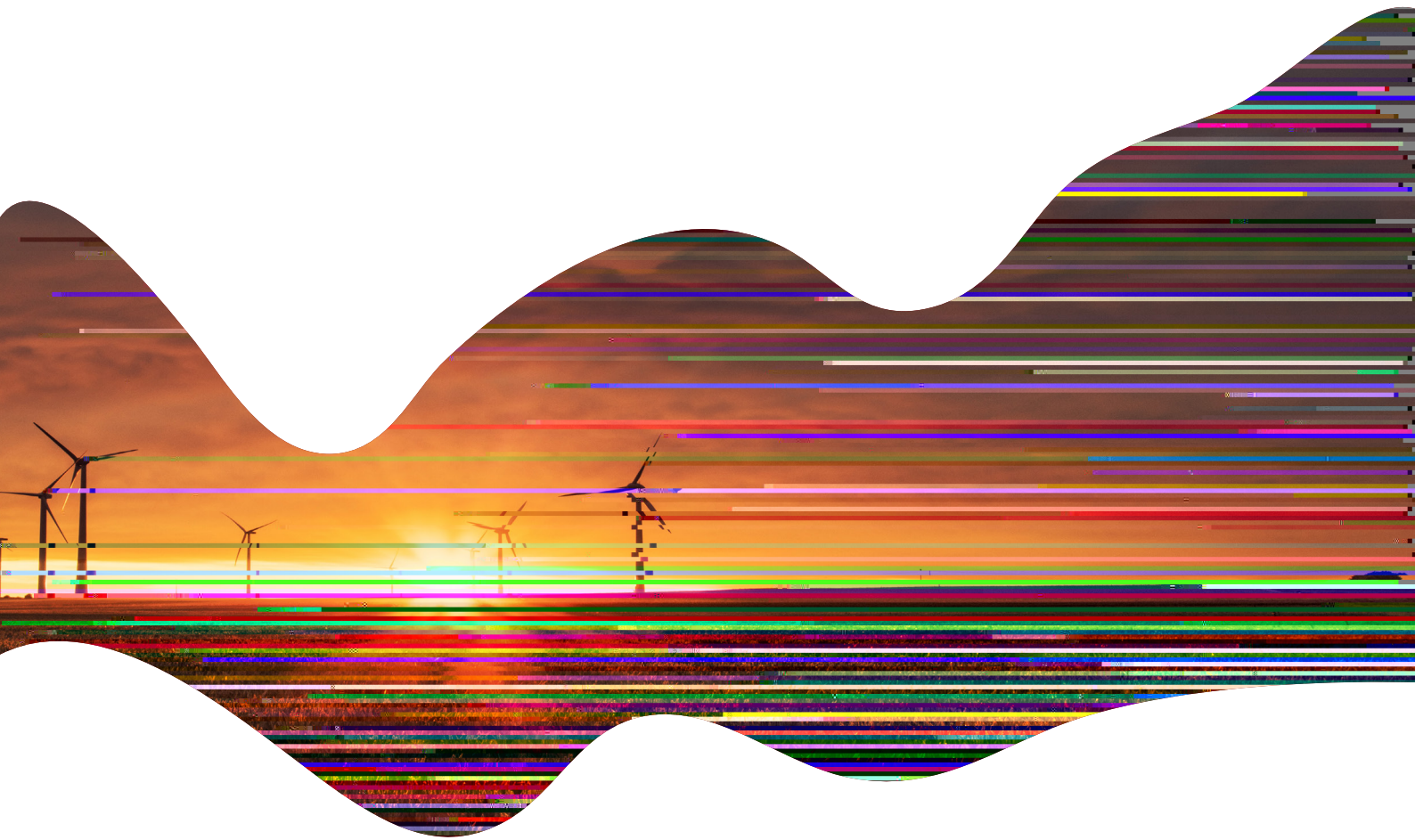


CLIMATE CHANGE RESEARCH CENTRE
ANNUAL REPORT

2018



www.ccrcc.unsw.edu.au



OUR MISSION

THE CCRC ACTIVELY ENGAGES IN WORLD-CLASS RESEARCH FOCUSED ON CLIMATE SYSTEM SCIENCE TO HELP BETTER UNDERSTAND, PREDICT, AND ADAPT TO CLIMATE VARIABILITY AND CLIMATE CHANGE. WE ALSO EDUCATE UNSW STUDENTS, SUPPORT STEM, ENGAGE IN PUBLIC OUTREACH, AND ADVISE THE GOVERNMENT AND PRIVATE SECTORS ON CLIMATE-RELATED SCIENCE AND THE CAUSES AND CONSEQUENCES OF GLOBAL WARMING. WE ARE THE FOUNDATION FOR THE ARC CENTRE OF EXCELLENCE FOR CLIMATE EXTREMES.

RESEARCH HIGHLIGHTS

- Intensification of Southern Hemisphere westerlies caused early deglacial atmospheric CO₂ rise: 10.1029/2018GL078875
- Wind energy is a resilient source of electricity over most of Australia: 10.1088/1748-9326/aaa632
- Many climate models overamplify heat extremes over wet regions: 10.1029/2018GL079102
- Rain intensity increased over Australia during 1986-2013 compared to 1958-1985: 10.1029/2018GL078875
- Does predictability of fluxes vary between FLUXNET sites?: 10.5194/bg-15-4495-2018
- Total Antarctic ice shelf loss increases by 40% - 130% during twenty-first-century simulations: 10.1175/JCLI-D-17-0854.1
- How important is humidity to heat stress?: 10.1029/2018JD028969
- Future extreme precipitation intensity increases in the majority of CMIP5 models: 10.1175/JCLI-D-17-0683.1
- A new model of skipjack tuna movement in the tropical Pacific ocean: 10.1016/j.pocean.2018.04.007
- Tropical instability waves may impact ENSO irregularity and predictability: 10.1007/s00382-018-4217-0

AWARDS & HONOURS

- Lisa Alexander: Outstanding Service Award, World Meteorological Organization for Climatology
- Alex Sen Gupta: Academy of Science Frederick White Medal
- Matt England: Tinker-Muse Prize for Science and Policy in Antarctica
- Jason Evans: Australian Meteorological Oceanographic Society (AMOS) Priestley Medal
- Andy Pitman: Eureka prize finalist in the category 'Leadership in Innovation and Science'
- Markus Donat: World Climate Research Programme Climate Observing System Data Prize
- Multiple student awards:
 - Nathan Cooper, Mia Gross, Sanaa Hobeichi and Manon Sabot

RESEARCH OUTPUTS

107 journal articles:

- 33% in top 10% most cited, 90% in SJR's top 10%
- 23 publications with student first authors
- 14 publications in *Nature* family journals

INTERNATIONAL DELEGATION

- CCRC hosted Her Excellency Dang Thi Ngoc Thinh, Vice President of Vietnam

CONFERENCE

- CCRC hosted the Joint 25th AMOS National Conference and 12th International Conference for Southern Hemisphere Meteorology and Oceanography, AMOS-ICSHMO 2018

IPCC LEADERSHIP

- Jason Evans: Lead author IPCC Report on Climate and Land
- Alejandro Di Luca: Lead author, IPCC Report on Climate Change, Weather and Climate Extreme Events Chapter

INTERNATIONAL LEADERSHIP

- Gab Abramowitz: Chair, Global Land Atmosphere System Study, World Research Climate Programme (WCRP)
- Lisa Alexander: WCRP Joint Scientific Committee: Co-Chair, WCRP Grand Challenge on Weather, Climate Extremes
- Steve Sherwood: Steering Committee, WCRP Grand Challenge on Climate Sensitivity
- Katrin Meissner: Executive Committee, Past Global Changes (PAGES)
- John Church: Chair, Transient Tracer-based Investigation of Circulation and Thermal Ocean Change (TICTOC) Advisory Committee
- Jason Evans: Co-Chair, Global Energy and Water Exchanges (GEWEX) Hydroclimate Panel
- Lisa Alexander: GEWEX Steering Committee
- Alex Sen Gupta: Climate and Ocean Variability, Predictability, and Change (CLIVAR), North-western Pacific Ocean Circulation and Climate Experiment (NPOCE) Committee

EDITORIAL ROLES

- Lisa Alexander: Editor-in-Chief, *Weather and Climate Extremes*
- Jason Evans: Editor, *Journal of Climate*
- Agus Santoso: Associate Editor, *Journal of Climate*
- Donna Green, Katrin Meissner: Executive Editorial Board, *Environmental Research Letters*
- Steve Sherwood: Editorial Board, *Environmental Research Letters*
- Martin De Kauwe: Associate Editor, *Biogeosciences*
- Martin De Kauwe: Editorial Board, *Global Change Biology*
- Martin De Kauwe: Editorial Board, *New Phytologist*
- Laurie Menviel: Editor, *Climate of the Past*
- Andy Pitman: Associate Editor, *International Journal of Climatology*
- Gab Abramowitz: Associate Editor, *Journal of Hydrometeorology*
- Sarah Perkins-Kirkpatrick: Editor, *Weather and Climate Extremes*
- Sarah Perkins-Kirkpatrick: Associate Editor, *Scientific Reports*
- John Church: Guest Editor, *CLIVAR Special Issue on Sea Level*
- Andrea Taschetto: Guest Editor, *Atmosphere on Weather and Climate Extremes*

VISITORS

- Martin Best, UK Met Office
- Ian Dunlop, Centre for Policy Development
- Simone Fatichi, ETH Zurich
- Helen Fricker, SCRIPPS
- Ryo Furue, JAMSTEC
- Stephen Griffies, GFDL
- Florentin Lemonnier, Sorbonne Université
- Nicola Maher, Max Planck Institute
- Gerald Meehl, UCAR
- Nagin Nazarian, MIT
- Robert Pincus, CIRES, NOAA
- Paulo Polito, University of São Paulo, Brazil
- Robert Rind, CIRES, NOAA

