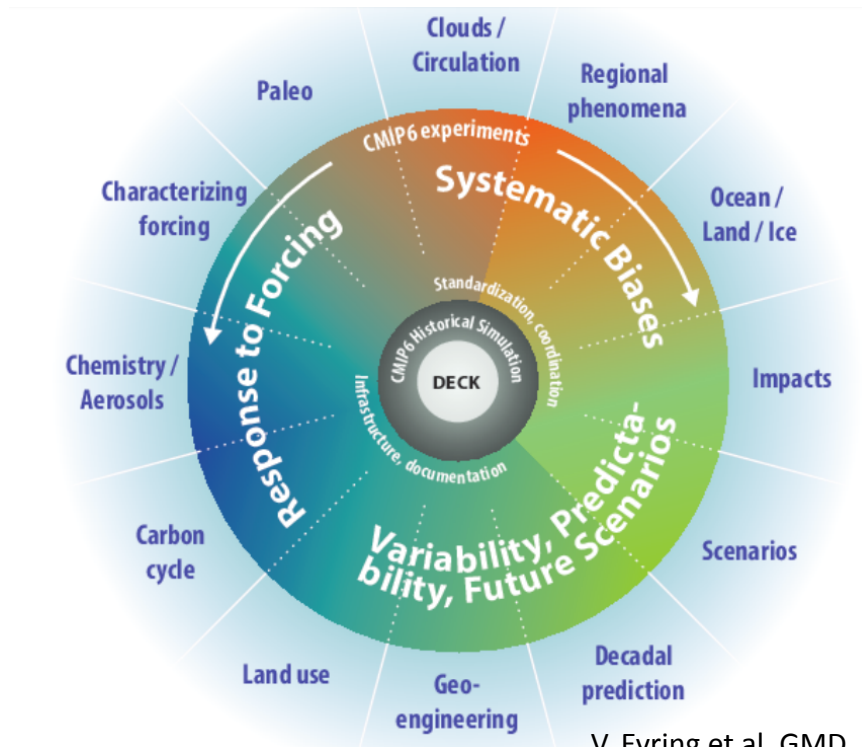# Project 2.1: Preparing ACCESS for CMIP6

Simon Marsland | Lead CI | CSIRO

CMIP6 Scope and Focus

- World Climate Research Programme - Grand Challenges
    - CLOUDS-ICE-EXTREMES-WATER-SEA-LEVEL-BIOGEOCHEMISTRY-NEAR-TERM
- Climate Model Intercomparison Project – phase 6

V. Eyring et al, GMD, 2016
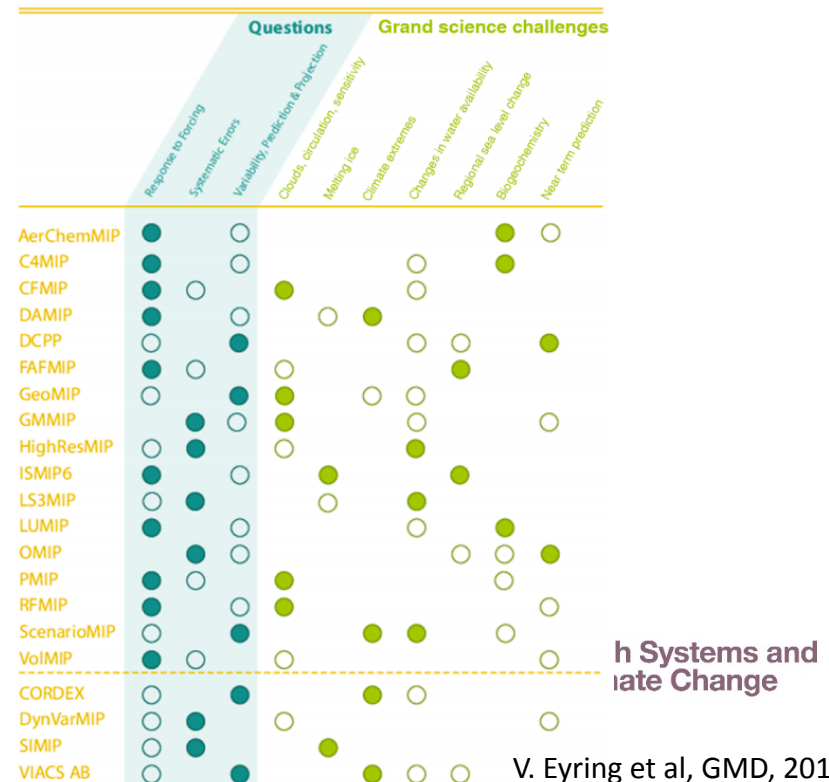
V. Eyring et al, GMD, 2016

NESP ESCC Project 2.1: Model and Team

- ## ACCESS-CM2
  - UKMO Global Atmosphere GA7.1 (Unified Model UM10.6)
  - NOAA/GFDL Modular Ocean Model MOM5
  - LANL sea-ice model CICE5.1
  - Australian community land surface model CABLE2.x
  - CERFACS OASIS-MCT Coupler

- ## Resolution
  - 1 degree tripolar ocean-ice with N96 atmosphere (same in CMIP5)

- ## Team
  - CSIRO: Simon Marsland (LCI), Dave Bi (DCI), Peter Dobrohotoff, Arnold Sullivan, Harun Rashid, Matt Chamberlain, Tilo Ziehn, Russell Fiedler, Martin Dix, Rachel Law
  - Uni of Melbourne: David Karoly (DCI), Roger Bodman
  - Universities: Nicholas Hannah (UNSW), Aidan Heerdegen (ANU)

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Current challenges

- UKMO GA6 came 2015 but aerosol issues were identified and led to serious deficiencies in climate

- UKMO GA7 2016 aerosol issues and poor climate (cold Arctic, warm Southern Ocean)

- UKMO GA7.1 - March 2017 - warm Southern Ocean requires additional tuning

- CABLE coupling - technical challenges and knock-on delays from late atmospheric component (currently testing with JULES)

- Aspirations - ACCESS-ESM with carbon cycle; higher resolution; ensembles

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ACCESS CMIP6 Experiments
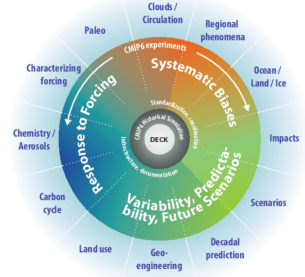
- DECK/ScenarioMIP – Simon Marsland (CSIRO/NESP ESCC)
- DAMIP (detection/attribution) – David Karoly (ARCCSS)
- C4MIP, LS3MIP, LUMIP (land/carbon) – Rachel Law (CSIRO)
- OMIP, FAFMIP (ocean) – Marsland (CSIRO)
- SIMIP (sea-ice diagnostic only)
- DCPP ?? (decadal) – (CSIRO??)

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ACCESS CMIP6 timelines
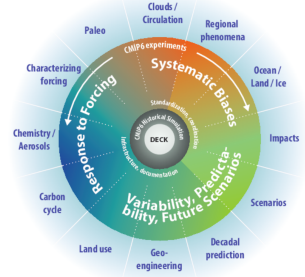
- Christmas 2017 - lock down code version with CABLE in pre-industrial control configuration for spin-up candidates

- April 2018 - commence piControl, historical, other DECK

- July 2018 - commence ScenarioMIP experiments

- In parallel over 1st half 2018 have data processing/compliance

- 2nd half 2018 commence publishing to ESG

- June 2019 - end of current NESP project

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