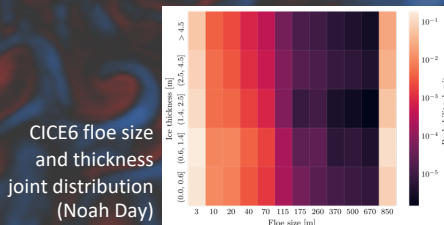


What is ACCESS-OM3?

- Australia's next-generation ocean – sea ice – wave model suite
- Part of **ACCESS-CM3** and **ACCESS-ESM3** climate and Earth system models being built for **CMIP7**
- Upgrades ACCESS-OM2 to state of the art (latest **MOM6**, **CICE6**) plus surface waves (**WW3**)
- Open development underway github.com/COSIMA/access-om3
- Regional and global configurations
- Multiple resolutions planned

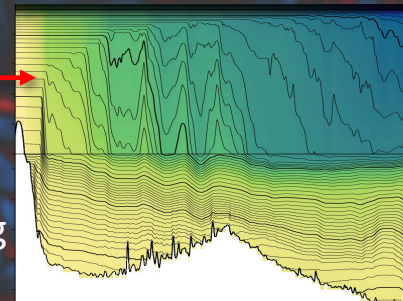


Sea ice: upgraded to CICE6

- **Joint floe size / thickness distribution: wave-ice breakup**
- Landfast ice
- Depth-resolved ice BGC

Ocean: upgraded to MOM6

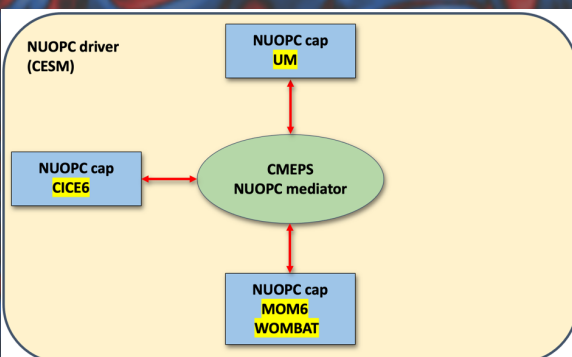
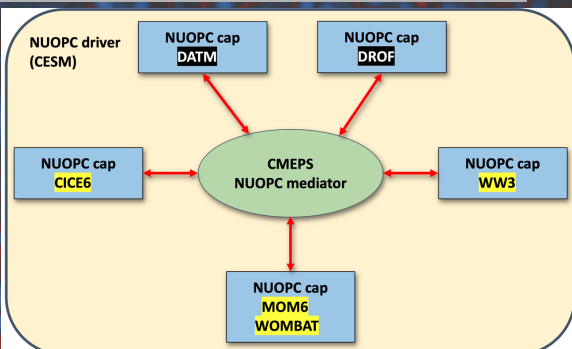
- **Arbitrary vertical coordinate**
 - Reduced numerical mixing
 - Ice shelf cavity circulation
 - **Wetting/drying; grounding line retreat**
- **C-grid: narrower straits**
- **Fast BGC: long tracer timestep**
- **Improved tides**



Surface waves: WW3 added

- 2-way coupling with both ocean and sea ice

Flexible coupling



Using NUOPC coupler and components from CESM

- Modular plug-and-play design

ACCESS-OM3 uses prescribed atmospheric data (DATM) and runoff data (DROF)

ACCESS-CM3 & ACCESS-ESM3 use UM GAL9 atmosphere and no surface waves

NUOPC cap for UM written by Kieran Ricardo and Martin Dix

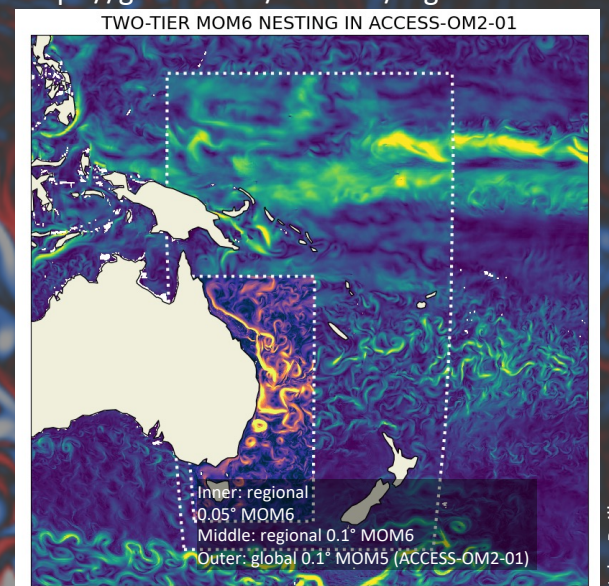
Regional modelling

Ashley Barnes



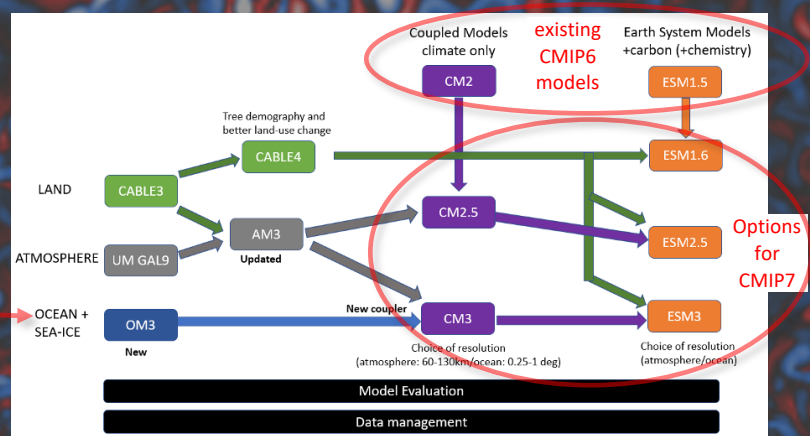
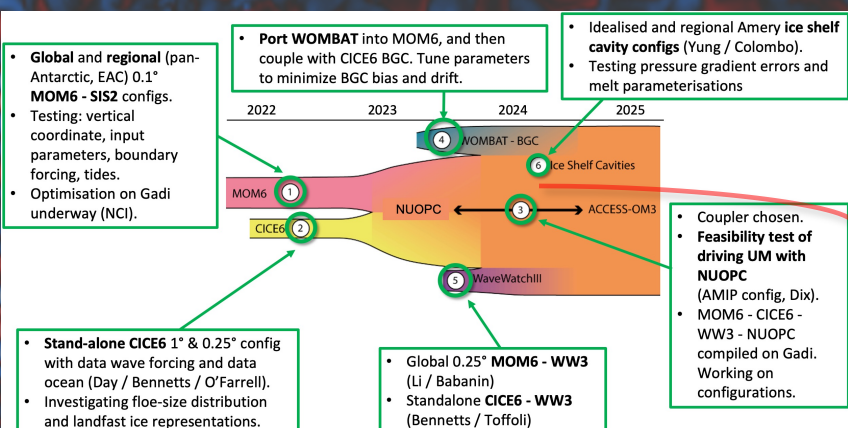
Easily set up regional MOM6 configurations anywhere you like

<https://github.com/COSIMA/regional-mom6>



John Reilly

Development plans



Andy Hogg, Rachel Law

Climate model options for CMIP7:

- Physics-only (ACCESS-CM2.5, ACCESS-CM3)
- Earth system (ACCESS-ESM1.6, 2.5, ACCESS-ESM3)
- ACCESS-CM3 and ACCESS-ESM3 will use ACCESS-OM3 (without waves)

ACCESS-OM3 development
github.com/COSIMA/access-om3

