ACCESS-NRI support of high-resolution modelling in non-operational settings

Chermelle Engel, ACCESS-NRI

ACCESS-NRI is funded to develop and provide software to accelerate research in weather and climate. Researchers working outside of operational centres, such as the Australian Bureau of Meteorology, that wish to work on high-resolution modelling have different barriers to entry and ability to access data.

High-resolution ACCESS model runs require initial- and lateral boundary conditions. Instead of using initial- and lateral boundary conditions from the parent (ACCESS) model, researchers outside of operational centres tend to use initial- and lateral boundary conditions from reanalysis datasets such as ERA5 or ERA5-land.

ACCESS-NRI has worked to:

- Construct a rose/cylc suite to create 2.2km initial conditions using atmospheric initial conditions from ERA5 (at 31km resolution) and land/surface initial conditions (including soil moisture) from either ERA5-land or BARRA-R2 (at 10km or 11km resolution respectively).
- Provide users the option to proceed with a genuine two-level nest forecast and/or use the prepared initial condition in a single-level forecast.

The results of the ACCESS-NRI work will be shown in this talk along with the strategy to release suites that support similar work for interested researchers.