ACCESS-NRI Scientific Advisory Committee

Thursday 7 December 2023 2.00pm - 3.30pm

Attendance

Chair: Andy Hogg
Rapporteur: Lauren Vieira
Attended: Rachel Law, Tilo Ziehn, Claire Vincent, Laurie Menviel, Charmaine Franklin, Oscar Alves, Paul Spence, Ed Doddridge, Simon Alexander
Observers: Martin Dix, Kelsey Druken, Heidi Nettlebeck, Natalia Batemen
Apologies: Adele Morrison, Ben Galton-Fenzi, Victoria Allen

New SAC Members: Ariaan Purich from Monash University, Simon Alexander from UTas.

Item 1 – Welcome and Acknowledgement of Country

Item 2 – Previous Minutes

The previous minutes of the meeting have been approved and uploaded on the ACCESS-NRI website.

Item 3 – Matters Arising

A1: ACCESS-NRI to enable anonymous post settings on HIVE.
Complete – has been enabled for help topics.

A2: ACCESS-NRI to liaise with BoM regarding 2024 Workshop dates.
The Bureau has advised that their RMD/UM Partnership workshop will be held on 9-13 September, and ACCESS-NRI Workshop will be held 2-6 September.
We will be seeking volunteers for the program committee shortly, with a view to start planning in the New Year. SAC to think if they'd like to be on the program committee.

A3: Working Groups to start organising proposals for data storage allocation.
In progress.

A4: ACCESS-NRI to review merit guidelines and formalise within a few weeks.
Merit guidelines and current storage allocations can be found in the ACCESStory Newsletter on the ACCESS-NRI website. The proposals on compute and storage over Quarter 2 are due 15 March and Quarters 3 and 4 are due 15 June.
Quarter 1 remains at Working Group co-chairs judgements.

A5: SAC Members to provide feedback on 2024 meeting dates by the next SAC meeting.
28 March SAC Meeting moved to 21 March

Item 4 – ACCESS-NRI Updates

Milestones

- It has taken 12 months to modernise CABLE. Last week CABLE moved to a Git repository on GitHub.
- Rereleased ACCESS-OM2, we now have more control and understanding on building, continuous integration and deployment. ACCESS-OM2 is the first flagship model configuration, we aim to release a suite of supported models through this pipeline. -

4.1 CMIP7 update

- CMIP7 submitted a second version of the Resourcing Document to the Department of Education in October. DE has recently responded - they will do what's possible to support the project and are currently in talks with Commonwealth colleagues regarding possible sources of funding.
- Fast-Track proposal is a set of experiments that will identify where modelling groups should direct their resources. Full details can be found here: CMIP7 Announce - CMIP7 - ACCESS Hive Community Forum (access-hive.org.au)
  For comments, please go here https://forum.access-hive.org.au/t/fast-track-proposal-v1/1625
- Model development is progressing well
- Evaluation Hackathon will be held 12 – 14 March 2024 in Aspendale – EOI out next week.
- CMPI7 "Announce Topic" can be found on the ACCESS-HIVE

4.2 ACCESS-NRI Work Plan

This is the first attempt at a public summary of major areas ACCESS-NRI are working on. It has been helpful for internal planning, providing transparency, and engaging feedback within the community. We plan to share publicly through the ACCESS-NRI website and ACCESS-HIVE.

Taking place over the next 6 months are four focus areas;

1. Model Development
   - CABLE maintainability and improvements
   - ACCESS-AM3 development
   - ACCESS-OM3 development
   - ACCESS-ESM3 development
   - Model optimisation
   - Ancillary suites and tools
   - UM/JULES maintenance
   - Ice-Sheet modelling and Coastal modelling commons

2. Model Software & Infrastructure
   - Support for legacy configurations
   - Model release pipeline
   - Flagship releases
   - Impact tracking

3. Software & Data
    - Model evaluation and diagnostic tools
    - Data visualisation
    - MED portal
    - Data releases and data management
    - Improved observational constraint and testing facility for ACCESS-NRI Land models
    - Software Transformation

4. Training & Engagement
    - 2024 ACCESS Community Workshop
    - Supporting Community Working Groups
    - Communication and outreach engagement
    - ACCESS training
    - ACCESS-HIVE training catalogue
    - Graduate-style program for PhD students (1 – 2 students)

Questions

Will the Model Release pipeline cause any difficulty for users who want to change the source code?

No, OM2 targets two types of user groups – standard configurations, and offering guidelines to make changes. More instructions are being released in January.

Is the AUS2200 an Australian domain or relocatable?

The initial idea was guided by the SAC on releasing "something" which supported modelling - this has evolved rapidly. Using AUS2200 as a base model, we will introduce users to a regional model suite using different types of examples as well as tutorials.

Why are the proposed internship numbers so low?

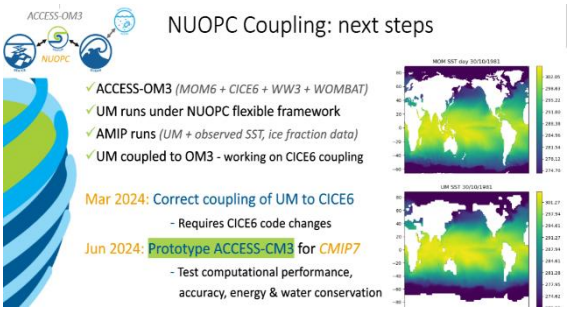
We plan to start at 1 – 2 students to understand what we can manage while balancing our own staff training. There may also be opportunity for NCRIS funding to facilitate internships in the coming years. We plan to start at 1 – 2 students to understand what we can manage while balancing our own staff training. There may also be opportunity for NCRIS funding to facilitate internships in the coming years. ANU has a program for PhD students which allows them to do a 6-month internship, and ANU will extend their scholarship for 6 months. The ANU internship can't be taken at another University, but we could send them to CSIRO, BoM, or AAD.

4.3 Presentation from Atmosphere Team

1. ACCESS HIVE Documentation
    - HIVE hosts a variety of information for ACCESS users
    - We have updated and collated existing documentation, as well as adding community links

2. Support for Aus2200 ACCESS regional suite
    - Following SACs approved of Aus2200, we ran a tutorial at ACCESS-NRI Workshop
    - Updated science (RAL3.2) in Aus2200

- Existing Aus2200 documentation to be compiled by January (identifying gaps)
- Appropriate tutorials to be set up by March on the HIVE



3. NUOPC Coupling
- Project has been worked on for over a year
- Aim to replace the OASIS with NUOPC framework
- Next-gen climate models will involve coupling the UM with NUOPC flexible framework, which will from ACCESS-CM3 configuration

3a. NUOPC Next Steps
- UM coupling to CICE6 complete by March 2024
- ACCESS-CM3 configuration to be ready for CMIP7, June 2024

4. Ancillary Suites and Tools
- Existing files are not well organised, and don't meet FAIR standards.
- Anything non–standard (e.g. paleo climate) is very difficult to manage
- Currently working on:
    - Document ancillary suites (based on ants)
    - Flexible tools for working with ancillaries
    - Scheme for provenance management

4a. AMAMI Tool
- Converts UM files to NetCDF – um2nc
- Modifies UM files based on a NetCDF – modify
- Initial release AMAMI Jan 24
- Updated release AMAMI June 24
    - Improved provenance/processing workflow for input and output files
    - Incorporating into a workflow for creation of ancillaries

5. Maintaining the ACCESS environment at NCI
- Release quality versions of ACCESS-ESM1.5 and CM2 suites
- Porting and testing Met Office GAL9 configuration at NCI
    - AM3 release early 2024 (with JULES, then CABLE)
- Maintaining/developing environment for running UM at NCI (with NCI and BoM)
    - Transition from accessdev to Gadi persistent sessions
    - Installing new releases (e.g. UM)
    - Rose stem testing of UM and JULES
    - Support for the Met Office development processes

Comments

The best way to contribute feedback through the HIVE is here: https://access-hive.org.au/about/contribute/

Item 5: Update from Working Groups

Forecasting & Prediction

No update.

Atmospheric Modelling

- Have had discussions over data sets that NCI could support – running and evaluating
- Discussed supporting flexible ways of running regional models. AUS2200 is expensive to run, therefore running smaller domains is important for the University groups

Coupled and Earth System Modelling

- Discussing how to manage data storage and prioritisation of experiments

Comments

There are plans to expand the storage availability by:

- Increase WG storage over time – dependent on NCI capabilities
- Reference data sets – which may be transferred into another bucket of storage, therefore taken out of the WG allocation
- If expanding Tape storage is of interest, we could access it more rapidly.

Ocean-Sea Ice Modelling COSIMA

- COSIMA is grateful for the support and storage provided by ACCESS-NRI and NCI
- Presently we are more compute-bound than storage
- Many experiments being run with ACCESS-OM2, with new configurations in development
- Excitement surrounding regional facilitations - the move from OM3 to MOM6
- Inclusions such as diatoms and zooplankton to be added to Wombat – the biogeochemistry model

Cryosphere

- Cryosphere Workshop was held on 1st November at Monash University, focusing on the selection process of an Ice-Sheet Model/s.
- Since then, the WG has released documents surrounding the selection criteria: https://forum.access-hive.org.au/t/access-ice-sheet-model-selection-criteria-survey/1662
- This will give the community a chance to give feedback in the process.
- The candidate assessment phase will commence in January 2024

Item 6: Any Other Business

Summary of GC Program Board meeting

- Met Office having problems with GC5 – climate sensitivity is too high, concluding it cannot be used for CMIP7
- GC5.1 has since been developed, which is targeted at weather forecasting

- Proposed configuration ideas;
    - Each GC release includes a base release, along with specific configurations
    - GC.X and GC.Y – X's being a science configuration, and Y's for fixing bugs
- The Met Office are in need of Elfric specialists and are asking the community for assistance.
- Elfric plans are currently 6 months behind schedule.
- The Momentum Partnership aims to be formalised in April 2024
    - The new approach will encourage partners to take on leadership roles in key areas on behalf of the Met Office
    - New investments for Arctic modelling

End of meeting.