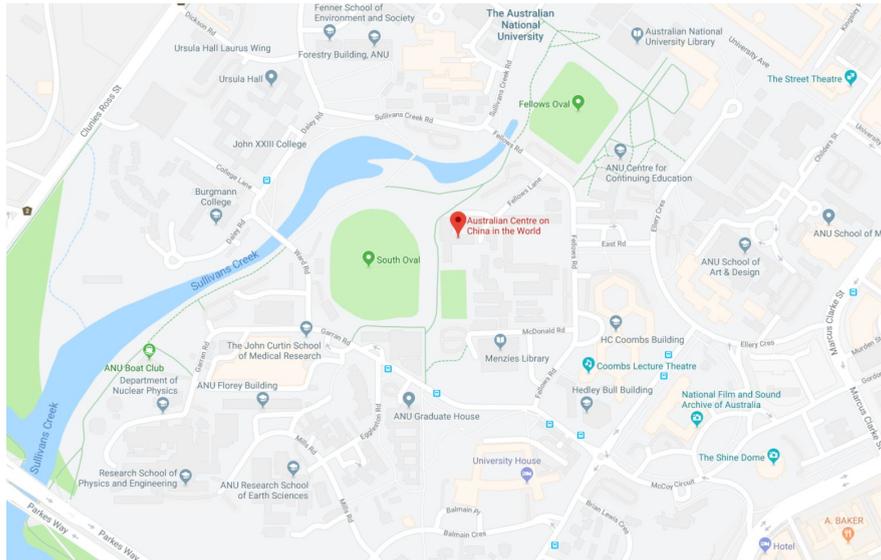


COSIMA 2018

Welcome to the 2018 edition of the annual COSIMA workshop.

This year's workshop will be held on 7 & 8 May at the "Australian Centre for China in the World" (Building 188, Fellows Lane, The Australian National University; Map link:

<https://goo.gl/maps/VEAMSi1nHw82> or see map below). We will be in the Seminar Room (not the Auditorium) and will hopefully have signage out to guide you to the right location.



For parking at ANU, our honest recommendation is: don't! If it's unavoidable, then there is some information [here](#).

Program

The workshop program includes 30 talks, a discussion/planning session and a COSIMA Cookbook tutorial. We will provide lunch and morning tea at the venue on both days, plus afternoon tea on Monday.

If you are giving a talk, please **ensure it is 10 minutes or less**. This will allow for question time and some discussion time at the end of each session. Our projector has a 16:9 aspect ratio. When your talk is prepared, give it a filename that clearly identifies you and upload it to our dropbox via [this link](#).

Monday 7 May

10:00 Arrival & Morning tea

10:30 Session 1 (Chair - Andy Hogg)

Stephen M Griffies (NOAA/GFDL): Understanding and projecting global and regional sea level: More reasons to include refined ocean resolution in global climate models

Andrew Kiss (ANU): Overview of the ACCESS-OM2 model suite

Andrew Lenton (CSIRO): Ocean Reversibility in ACCESS-ESM

Catia Domingues (UTAS): Global and spatial temporal changes in upper-ocean thermometric sea level

Fabio Dias (UTAS/CSIRO): Mean and seasonal states of the ocean heat and salt budgets in ACCESS-OM2

Adele Morrison (ANU): Circumpolar Deep Water transport towards Antarctica driven by dense water export

Jan Zika (UNSW): Getting an ocean model to obey: Prescribing and perturbing exact fluxes of heat and fresh water

12:30 Lunch

13:30 Session 2 (Chair - Clothilde Langlais)

Petra Heil (AAD & ACE CRC): ACCESS-OM2-01 sea ice

Paul Sandery (CSIRO): Sea-ice data assimilation and forecasting using an Ensemble Transform Kalman Filter

Paul Spence (UNSW): Does the Southern Ocean have sleep apnea?

Veronique Lago (UNSW): Impact of projected amplification of Antarctic meltwater on Antarctic Bottom Water formation

Ryan Holmes (UNSW): Numerical Mixing in the COSIMA Models

Luwei Yang (IMAS, UTAS): The impacts of bottom frictional drag on the sensitivity of the Southern Ocean circulation to changing wind

Vassili Kitsios (CSIRO): Stochastic subgrid turbulence parameterisation of eddy-eddy, eddy-topographic, eddy-meanfield and meanfield-meanfield interactions

Matt Chamberlain (CSIRO): Using transport matrices to probe circulation in ocean models

15:30 Afternoon tea

16:00 Session 3 (Chair - Petra Heil)

Nicholas Hannah (COSIMA): ACCESS-OM2 Software Development

Marshall Ward (NCI): ACCESS-OM2 performance analysis

Rui Yang (NCI): Parallel IO in MOM5

Angus Gibson (ANU): Towards an adaptive vertical coordinate in MOM6

Jie Ma (CSIRO): Investigating interannual-decadal variability of Indian Ocean temperature transport in an eddy-resolving model

Paige Martin (University of Michigan): Frequency-domain analysis of energy transfer in an idealized ocean-atmosphere model

17:30 Close

19:00 Workshop dinner ([Debaque](#) - [24 Lonsdale St Braddon](#))

Tuesday 8 May

9:00 Session 4 (Chair - Andrew Kiss)

Andy Hogg (ANU): Are we Redi for 0.25° ocean-climate models?

Kial Stewart (ANU): The Repeat Year Forcing for JRA55-do

Terry O'Kane (CSIRO): Coupled data assimilation and ensemble initialization with application to multi-year ENSO prediction

Gary Brassington (Bureau of Meteorology): Ocean forecasting status and outlook

Peter Oke (CSIRO): Bluelink activities and plans

Matthew England (UNSW): A proposal for future projection simulations using COSIMA ocean-ice models

Richard Matear (CSIRO): CSIRO Decadal Climate Forecasting, update of the project's progress

Simon Marsland (CSIRO): Preparing ACCESS for CMIP6

Clothilde Langlais (CSIRO): Downscaling towards the coast - a perspective on where the coastal modelling group would like to go

11:00	Morning tea
11:30	Discussion: COSIMA planning and strategy
13:00	Lunch
14:00	Strategy and planning summary
14:30	COSIMA Cookbook tutorial
16:00	Close

Workshop Dinner

Dinner will be at 7pm at [Debacle - 24 Lonsdale St Braddon](#). The restaurant is about a 30 minute walk from ANU. We will pay for your dinner (pizza and salads) - but you should buy your own drinks at the bar.

Discussion and Planning Session

One of the goals of the workshop is to plan how we can best utilise COSIMA models to address the biggest scientific questions. In particular, we are motivated to leverage our high resolution model simulations for the use of the whole community — but this requires careful mapping of our objectives. To assist with this:

- Please give some thought, in advance, to what may be possible in your research area;
- There will be space to post provocative questions around the room on the first day of the workshop. For this exercise, we suggest that you dream big — forget constraints, and think about what could be achieved;
- On the second day we will discuss the ideas that emerge;
- We will then try to address synergies, constraints, timelines & resources.

We look forward to a productive and open discussion.

COSIMA Cookbook tutorial

The final session of the meeting will include an informal tutorial on how to use the COSIMA cookbook. The cookbook is a framework for analysing model output that is currently customised for MOM and ACCESS-OM2 output. It is particularly designed to cope with the memory requirements of large model runs, but also provides a number of standard analysis scripts.

The purpose of this tutorial is to:

- Explain the philosophy of the cookbook;
- Outline the current capacity of the cookbook, including strategies for efficiently reading data, computing derived quantities using xarray and plotting;
- Help new users to run standard functions to make use of the cookbook; and
- Entraining contributors to write new and improved cookbook functionality.

If you want to attend the tutorial, you will get the most out of the session if you can do some preparation:

1. Bring your laptop
2. Make sure you can connect to the VDI at NCI
3. Make sure you have access to read data stored on `/g/data3/hh5/tmp/cosima`
4. Check you have access to the conda/analysis3 suite on the VDI
5. Attempt to install the [COSIMA Cookbook](#) from github on your VDI account
6. Perhaps even try to run a few scripts to understand how it works
7. Think about a simple diagnostic you would like to build for the cookbook during the tutorial.

If you can't manage 4-6 then we can provide a bit of support during one of the lunch breaks to get you started. (NB. It is OK to just attend the tutorial session and observe if you don't have the inclination to do the preparation.)