Open call for membership of the Task Team on Strategic Ensemble Design for CMIP7

This task team will focus on ensemble design and interpretation to aid scoping of the next phase of the Coupled Model Intercomparison Project (CMIP7). Robust assessments of mitigation policy effectiveness, and of adaptation strategy in the face of climate change require a climate modelling strategy which represents a balance of state of art process understanding, tractability and utility on a policy timescale. The climate simulations represented within CMIP provide the primary source of coordinated modelling data from process-based Earth System models, including simulations of historical and future climate change together with a range of idealised experiments to improve basic understanding of Earth system components.

Successive generations of CMIP have seen the project grow in scope - with increasing process-specific subprojects to better address specific scientific questions, while the political and societal landscape surrounding the wider topic of climate change have developed dramatically in the aftermath of the Paris Agreement. Meanwhile, questions remain on how to best sample and calibrate models in order to produce simulations which are relevant for assessment.

Desired experience

We are looking to assemble a multidisciplinary group of (8-10) experts representing technical aspects of Earth System Model development, Earth System Model experimental design and multi-model analysis and operational use, together with impacts and mitigation experts to improve relevance of CMIP ensembles to a broad user base.

Task Team Objectives

The overarching goal of this task team is to consider how future best strategy for CMIP should address those evolving societal demands which can be met only by process-resolving computational Earth System Modelling. To this end, the TT will consider how to better represent both detailed climate impact and mitigation processes, given expectations of computational (and human) capacity over the timescale of CMIP7.

Early TT objectives will be:

1. Review existing CMIP6 core and satellite protocols. Identify critical linkages and evident knowledge gaps.

2. Consider how ad-hoc model calibration and sampling strategies in CMIP could be improved to better inform projected impacts in multi-model distributions of future climate change.
3. Review model development axes which could improve utility and added value of future CMIP-class models for climate assessment (emissions driven capacity, calibration frameworks, process representation, resolution, timescale of simulations), and assess urgency and scope for addressing issues in coming CMIP cycles.
4. Consider revision of DECK protocol to provide better calibration targets (and tests) for simple climate model architectures and scenarios representing key policy-relevant climate system uncertainties in achieving the goals of the Paris agreement.
5. Coordinate a workshop to showcase perspectives and multi-model analysis needs for CMIP7.

Coordination with other CMIP TT, WCRP activities and wider stakeholders

This Task Team will be coordinating closely with the other CMIP task teams, CMIP modelling centres, MIP Chairs (particularly ScenarioMIP) together with relevant WCRP core projects and Lighthouse Activities.

Time commitment

Meetings are expected to take place regularly, every 2-3 months, and more frequently as required and at the discretion of the TT Leads. There may be times when there is more or less work depending on the activities undertaken (e.g., a peak period may be associated with a workshop or paper published by the TT). TT members are expected to commit appropriate time to this activity, at around 5-10% FTE. Most meetings will be online, with some out-of-hours working required to the challenges of time zone coordination. It is envisioned that the initial commitment to this TT will be around 18 months.

Remuneration

These are not paid roles.

How to apply

Applications should be submitted via this form before 18:00 UTC on 14th October 2022.

Contact and further information

The point of contact for this TT are Ben Sanderson, CICERO, Norway (benjamin.sanderson@cicero.oslo.no). Please contact the CMIP-IPO (cmip-ipo@esa.int) if you have any questions or require further information.