

WMAC-2 report

John Mitchell and Christian Jakob
WMAC Co-Chairs

Introductory remarks

- Second meeting -> Started action after last year's existential discussions
- Still struggling to get everyone to come -> partly caused by meeting format (see later)
- Great discussions with those who did come

Grand Challenges

- Found it difficult to discuss them before hearing reports. Written input only.
- Many of the GC goals require major improvements to models -> There appears to be no strategy how to achieve this.
- Concern that an already stretched modeling community will be even more fragmented.
- More thought on coordination of activities is required. -> Topic for WMAC-3?

CMIP6

- CMIP6 planning is beginning in less than 3 months!
- The community has barely recovered from CMIP5, with results indicating little progress from CMIP3!
- Just as for the GCs, to remain credible we need more time and a strategy to significantly improve models.
- What is our strategy to achieve this?

“An endangered species is a population of organisms which is at risk of becoming [extinct](#) because it is either few in numbers, or threatened by changing environmental or predation parameters.” - Wikipedia

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Model developer

Golden Lion Tamarin

Promote model development

- Promote the establishment of several prizes for significant contributions to model development
 - Focus on early career scientists
 - Options: National Services, WMO, AMS, RMS, AGU, EGU, EMS, etc.
 - Small WMAC task team has been formed

Promote model development

- Summer Schools on model development
 - Most summer schools on modeling are either focussed on running models or on numerical methods.
 - Little to no training in details of model physics - true for all spheres
 - Proposal: Organize summer school(s) on model development that focus on parametrization (e.g., like ECMWF training course).
 - Small task team has been formed (GC4+WGOMD+GASS+GLASS)

Regional climate

- Concerns about model evaluation in CORDEX

CORDEX Phase I experiment design

Model Evaluation Framework

Climate Projection Framework

AMIP
like

Multiple regions (Initial focus on Africa)
50 km grid spacing

CMIP
like

ERA-Interim LBC
1989-2007

RCP4.5, RCP8.5
1951-2100 or 1980-2050

Decadal predictions
1980-2010, 1990-2000, 2005-2035

Regional Analysis
Regional Databanks

Multiple AOGCMs

Regional climate

- Concerns about model evaluation in CORDEX
- Proposal:
 - Include experiments forced at the boundaries with historical GCM simulations in the Model Evaluation Framework
 - Have a dedicated evaluation effort under WGRC (don't leave it to the users)

ESGF

- WMAC sees ESGF as the main mechanism for exchanging data (mod+obs+ana) in the WCRP in the next decade.
- This will have important implications not all of which are fully understood.
- Buy-in from some WCRP activities exists (e.g., CMIP, CHFP, CORDEX, OBS4MIPS, ANA4MIPS).
- Core project involvement requires some more thought

ESGF

- Recommendations:
 - JSC to endorse ESGF as data exchange mechanism and discuss core project involvement
 - Consultation with ESGF to determine details
 - Leave determination of internal structure to ESGF
 - Replace Review Board by an Advisory Board with membership drawn from relevant partners, including WCRP

Workshops

- Proposal: Workshop on model “tuning”
 - WMAC supportive of general idea
 - WGCM to lead
 - Cover all aspects of tuning - from process level to coupled system
 - discuss making documentation of tuning process a requirement for participation in CMIP6
- Dynamics-Physics coupling

Workshops

- Workshop on Dynamics-Physics coupling
 - How do dynamical and physical process couple in the general circulation and how well is this coupling represented in models? -> Key to regional climate prediction
 - Currently dealt with in separate communities -> Danger of fragmentation
 - Potential partners: GC4, GASS and SPARC
 - Recommendation: Form a small group to define workshop goals and outline led by GASS

Organization

- WMAC Membership
 - WGRC representative: Keep current arrangement for one more year, then have a WGRC rep
 - WWRP representative: Still considered desirable by the committee

Organization

- Meeting structure
- Issues:
 - struggle to attract members to attend 1-day meeting
 - unnecessary duplication of reporting with main JSC meeting
- Proposal
 - Make WMAC a “3-day” meeting with the JSC
 - Structure: Mon am WMAC P1; Mon pm - Wed am - Joint with JSC, all key reports happen there; Wed pm WMAC P2; Thu am Report to JSC

Other things

- WMAC endorses proposal that CMIP6 Decadal Prediction activities are coordinated through WGSIP+WGCM +CLIVAR
- Recommendation: WDAC to lead new effort on coordinating activities on surface fluxes -> GEWEX products, SURFA, Reanalyses