



WCRP Modelling Advisory Council (WMAC)

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Progress and achievements

- WMAC coordinated the award of the WCRP/WWRP International Prize for Model Development 2019 awarded jointly to Dr Clément Albergel from Météofrance and Dr Baoqiang Xiang from the Geophysical Fluid Dynamics Laboratory in the USA and delivered at the AGU 2019.
- Lead support to the CMIP6 Model Analysis Workshop in Barcelona in March 2019
<https://cmip6workshop19.sciencesconf.org>.
- Involvement in the ongoing discussions about the operationalisation of some aspects of CMIP.

Progress and achievements

- WMAC provided feedback to the white papers prepared by the WMO Research Board from the climate modelling point of view. The documents on HPC/AI and advancing ESMs could make emphasis on the challenges climate modelling faces like (among others)
 - a) the adequacy of forcings in the historical period
 - b) sources of systematic errors
 - c) balance between resolution and length of the experiments
 - d) a bigger role for biogeochemistry
 - e) the imbalance between model developers and scientists analysing the experiment output
 - f) the optimal use of observations

Progress and achievements

- The feedback to the WMO Research Board reflects
 - a) the opportunities and challenges that come along with the synergies between the weather and climate communities
 - b) the need for weather and climate to address the exascale (and exabyte) challenge and use new AI capabilities
 - c) the recognition that the dissemination and standardization aspect is not just relevant to observations but equally to model output and needs to seriously consider the interoperability of different data sources (requiring adequate standards across existing and future data types)
 - d) the need to identify and train the required human resources with profiles that are not readily available (like software engineers) going beyond the mere collaboration between meteorology and computational science.

Future plans

- Plans for the Third WCRP Summer School on Climate Model Development almost finalised, but school to be postponed, possibly to 2021.



- Following the suggestion by the JSC of organising a modelling workshop to complement the preparation of the implementation plan, WMAC believes that the event could be a unique occasion to bring closer together the modelling and data communities and identify common challenges and opportunities.

Links to the WCRP Strategic and Implementation Plans

- WMAC provided recommendations through the task team on "Model Development and Computing Infrastructure".
- WMAC participated in the WCRP Flagship Workshop in Hamburg in February 2020.
- Coordination of modelling activities is more important than ever as we move into seamlessness, Earth system models, Research2Operations, etc.
- As mentioned during JSC40, WMAC suggests to place the WCRP model development coordination role in a clearly identifiable entity with a staff person assigned. This should reduce the scattering and promote synergies.



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Emerging issues

- A stronger integration with the data activities should be promoted.
- Note that the coordination of the WCRP modelling activities should come on top of the projected CMIP office.
- A stronger role of climate modelling is expected in the WMO Research Board documents.

Additional Slides

