

# CMIP6 Model Analysis Workshop

Barcelona, Spain, 25–28 March 2019

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A workshop to update and exchange about the developments and progress of simulations and analysis within Phase 6 of the Coupled Model Intercomparison Project (CMIP6) was held in Barcelona from 25 to 28 March 2019. The workshop was hosted by the Barcelona Supercomputing Center (BSC), and was jointly organized by the World Climate Research Program (WCRP) Working Group on Coupled Modelling (**WGCM**) CMIP Panel and the European Commission Horizon 2020 projects **PRIMAVERA** (PRocess-based climate sIMulation: AdVances in high-resolution modelling and European climate Risk Assessment), which held simultaneously its annual general assembly, and **EUCP** (European Climate Prediction system).

The workshop gathered 249 participants (including the PRIMAVERA attendees in a joint session) from 26 different countries around the world, with a high representation of early career scientists (67). Representatives from at least 20 CMIP6-Endorsed Model Intercomparison Projects (MIPs) and 25 modelling groups were present. This high and heterogeneous international turnout stimulated the organization of several parallel scientific meetings during the week, from which we highlight the 22<sup>th</sup> session of the WGCM CMIP Panel, an EUCP-organised workshop on “Scientific knowledge gaps related to decadal climate prediction”, and a “Carbon Cycle Predictability Meeting” to foster collaboration of different modeling groups in C4MIP activities.

Following the successful format of the WCRP CMIP5 model analysis workshop held in 2012, the meeting was organised in 7 half-day poster sessions, each beginning with a round of 2-minute oral communications in which all poster presenters had the opportunity to summarize the topic and main conclusions of their posters. In addition, a selected number of plenary talks distributed throughout the week covered different topics of broad interest, from the status of CMIP6 modeling activities and infrastructure, to the latest developments from high resolution modelling and a final overview of emerging properties of the CMIP6 ensemble and the future plans for CMIP7.

Scientifically, the workshop was structured around three major cross-cutting questions:

1. How does the Earth system respond to forcing?
2. What are the origins and consequences of systematic model biases?
3. How can we assess future climate change given climate variability, predictability and uncertainty in scenarios?

These were addressed along the different sessions, devoted to a large variety of scientific interests, from CMIP6-Endorsed MIP and CMIP6 model overviews and infrastructure, to forcing and feedbacks, uncertainty, biases and constraints, high resolution, variability and extremes, future projections, and regional impacts. Special emphasis was also given to studies performing multi-model evaluations (preferably with CMIP6 models), implementing new inter-comparison methods, connecting model developments to increased realism in Earth system models or exploring climate change impacts. The workshop format making poster presentations the central part for scientific discussion, leading into the common coffee and lunch breaks, allowed lively exchanges about the scientific progress in these different topics covered by the event.

Further workshop information and relevant materials (including the abstract and the slides of the plenary and 2-minute presentations) can be found at the website: <https://cmip6workshop19.sciencesconf.org/>. Also, highlights of the first CMIP6 results presented at the workshop and the future perspectives for CMIP6/CMIP7 have been published in a recent WCRP news item: <https://www.wcrp-climate.org/news/wcrp-news/1478-cmip6-first-results>.



*Group photo of the participants to the CMIP6 Model Analysis workshop*