

New professor in environmental physics reports on plans of the World Climate Research Programme (WCRP) in the area of climate modeling

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As part of the Coupled Model Intercomparison Project (CMIP) organized under the auspices of the World Climate Research Programme's (WCRP) Working Group on Coupled Modelling (WGCM) many hundreds of climate researchers, working with modeling centres around the world, will share, compare and analyze the latest outcomes of global climate models. These model products will fuel climate research for the next 5 to 10 years, while its careful analysis will form the basis for future climate assessments and negotiations. The sixth phase of CMIP (CMIP6) is now underway with the WCRP Grand Science Challenges as its scientific backdrop.

The DLR Institute of Atmospheric Physics (IPA) in collaboration with the new department of Climate Modelling in Faculty 1 of the University of Bremen provides contributions to CMIP6 by running the Earth System Model Evaluation Tool (ESMValTool) routinely on model output submitted to the CMIP archive for a more systematic, open and rapid performance assessment of the large and diverse number of models. This will also expose whether long-standing model errors remain evident in newer models and will assist modelling groups in improving their models. The results are expected to make a significant contribution to CMIP6 and the Intergovernmental Panel on Climate Change (IPCC) Sixth Assessment Report.

CMIP started twenty years ago as a comparison of a handful of early global coupled climate models. In response to a growing need to systematically analyze coupled ocean and atmosphere model outputs from multiple climate modeling centres, it has subsequently grown into a large program to advance model development and scientific understanding of the Earth system. To meet these new goals, CMIP has developed well-defined climate model experiment protocols, formats, standards, and distribution mechanisms to ensure model output availability to a wide research community.

Related links:

- ESMValTool: <http://www.esmvaltool.org/>
- CMIP video: (shorter version): <https://youtu.be/wTBkq9nWNEE>
- CMIP6 video (longer version): <https://youtu.be/WdRiYPJLt4o>
- WCRP website News: <https://www.wcrp-climate.org/wgcm-cmip/cmip-video>
- EGU Highlight Article: <http://www.egu.eu/news/highlight-articles/586/wcrps-coupled-model-intercomparison-project-a-remarkable-contribution-to-climate-science/>

Related publications:

- Eyring, V., Bony, S., Meehl, G.A., Senior, C.A., Stevens, B., Stouffer, R.J. and Taylor, K.E., [Overview of the Coupled Model Intercomparison Project Phase 6 \(CMIP6\) experimental design and organization](#). Geosci. Model Dev., 9(5): 1937-1958, 2016.
- Eyring, V. et al., [ESMValTool \(v1.0\) – a community diagnostic and performance metrics tool for routine evaluation of Earth system models in CMIP](#), Geosci. Model Dev., 9, 1747-1802, doi:10.5194/gmd-9-1747-2016, 2016.
- IPCC, [Climate Change 2013: The Physical Science Basis](#). Contribution of Working Group I to the Fifth Assessment Report of the Intergovernmental Panel on Climate Change. Cambridge University Press, Cambridge, United Kingdom and New York, NY, USA, 1535 pp, 2013.
- WCRP, 2016. [WCRP Grand Challenges](#). Hp. Online. World Climate Research Programme, 2012.

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