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FAIR data within the large international research project CMIP6 and the IPCC AR6

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The Coupled Model Intercomparison Project Phase 6 (CMIP6) comprises different research objectives within climate sciences in several separate MIPs. For the nearly 300 scientific experiments 44 institutions have registered their participation with more than 100 Earth System models.

Unlike many other disciplines, CMIP6 provides open access high-volume data, which is generally not connected to an article on the data. However articles on model description and evaluation as well as forcing data (CMIP6-related project input4MIPs) are available and provide important additional information on the data and its provenance. Other important related identifiers are ORCIDs for researchers or Crossref FunderIDs for funders.

For the first time in CMIP, data references for the evolving CMIP6 data are provided. The integration of Scholix services into this new Citation Service additionally enables the enrichment of data download statistics by statistics on data usage in literature. Projects like COPDESS / Enabling FAIR Data work on the integration of data references into the author guidelines of scholarly journals and thus on increasing the number of data references in articles.

CMIP6 data is an important source of information for the IPCC AR6 (6th Assessment Report of the Intergovernmental Panel on Climate Change). The collaboration between the IPCC Data Distribution Centre (DDC) and the IPCC Working Groups (WGs) aims to improve data transparency and traceability by:
• long-term archiving of the CMIP6 data subset in the IPCC DDC AR6 Reference Data Archive (source), the analysis scripts (transformation), and the data underlying key figures, tables and headline statements of the AR6; and
• cross-referencing from report to data and from WG webpage to DDC webpage.

This session contribution will introduce these different steps towards improved FAIRness of data in Earth system sciences.