The Cloud Feedback Model Intercomparison Project (CFMIP) Diagnostic Codes

Catalogue

Yoko Tsushima¹, Keith D. Williams¹, Florent Brient², Stephen A. Klein¹, Dimitra Konsta⁴, Christine Nam³, Xin Qu⁶, Steven C. Sherwood⁷, Kentaroh Suzuki⁸, Mark D. Zelinka³

¹Met Office Hadley Centre, Exeter, United Kingdom
²Centre National de Recherches Météorologiques, Toulouse, France
³Program for Climate Model Diagnosis and Intercomparison, Lawrence Livermore National Laboratory, Livermore, USA
⁴National Observatory of Athens, Athens, Greece
⁵Universität Leipzig, Leipzig, Germany
⁶Department of Atmospheric and Oceanic Sciences, University of California, Los Angeles, USA
⁷Climate Change Research Centre and ARC Centre of Excellence for Climate System Science, University of New South Wales, Sydney, Australia
⁸Atmosphere and Ocean Research Institute, University of Tokyo, Kashiwa, Japan

The CFMIP Diagnostic Codes Catalogue assembles cloud metrics, diagnostics and methodologies, together with programs to diagnose them from GCM outputs written by various members of the CFMIP community. This aims to facilitate use of the diagnostics by the wider community studying climate and climate change. This paper describes the diagnostics and metrics which are currently in the catalogue, together with examples of their application to model evaluation studies. Analysis of outputs from CFMIP and CMIP6 experiments will also be facilitated by the sharing of diagnostic codes via this catalogue. Any code which implements diagnostics relevant to analysing clouds, their role in circulation and climate sensitivity in models, and which is documented in peer-reviewed studies is eligible for inclusion in the catalogue, and we very much welcome additional contributions to further support community analysis of CMIP6 outputs.