



Standard controlled vocabulary for climate models

Marie-Pierre Moine (1), Charlotte Pascoe (2), Eric Guilyardi (3,4), Rupert Ford (5), and the METAFOR Team (1) CERFACS, Toulouse, France (moine@cerfacs.fr), (2) STFC Rutherford Appleton Laboratory, NCAS/BADC, Didcot, United Kingdom (charlotte.pascoe@stfc.ac.uk), (3) NCAS-Climate, University of Reading, Reading, United Kingdom (e.d.a.guilyardi@reading.ac.uk), (4) IPSL/LOCEAN, Paris, France (Eric.Guilyardi@locean-ipsl.upmc.fr), (5) School of Computer Science, University of Manchester, Manchester, United Kingdom (rupert@manchester.ac.uk)

The scope of climate modeling has grown tremendously in the last 10 years, resulting in a large variety of climate models, increasing complexity with more physical or chemical components and huge volumes of data sets (simulation outputs). While significant efforts to standardise the associated metadata (i.e. data describing data and models) have already been made in recent projects (e.g. CF standard names for CMIP3), detailed standards documentation of the models and experiments that created this data is still lacking.

The EU METAFOR Project (<http://metaforclimate.eu>) is specifically addressing this issue by creating new metadata schemas in cooperation with existing standards in Earth System Modeling (Curator, GridSpec, CF convention, NumSim, etc.). Descriptions of climate simulations, of the data they produce, and of the numerical models used to perform these simulations are all within the scope of METAFOR and these descriptions are assembled in a common information model (the CIM). Of particular note is the metadata for numerical models that is found in the CIM.

This paper presents the controlled vocabulary (CV) that has been collected by METAFOR to describe (in a common manner) the components of the numerical models developed by the different modeling centres. This vocabulary is used in the model part of the web-based questionnaire that METAFOR has developed in support of the upcoming IPCC exercise (the CMIP5 questionnaire).

The methods to (1) establish standards for this vocabulary via interactions with climate scientists, (2) utilise the vocabulary in the web-based questionnaire and (3) process the vocabulary for ingestion in the Earth System Grid (ESG) portal, are described. Governance aspects of this new controlled vocabulary are also addressed.