

obs4MIPs and CMOR, broadening community support

Preparing obs4MIPs-compliant data

The [Climate Model Output Rewriter \(CMOR\)](#) helps modeling groups prepare simulations in accordance with the Coupled Model Intercomparison Project (CMIP) data conventions. Since CMIP3, many of the modeling groups contributing to CMIP have used CMOR for this purpose. CMOR is recommended for the preparation of obs4MIPs-compliant datasets for the following reasons:

- Use of the identical processing mechanism for model output and observational data helps ensure technical alignment.
- In addition to metadata handling, CMOR provides checks on data, e.g. verifying data types and the consistency of coordinates and coordinate bounds.
- Active support is available for producing obs4MIPs-compliant data with CMOR via [the obs4MIPs Github repository](#) where the inclusion of new data products is managed.
- Experience with CMIP and obs4MIPs data published on the Earth System Grid Federation (ESGF) is that subtle but important inconsistencies identified by end-users were more often found in datasets prepared without CMOR.

During the past year, in support of the Rapid Evaluation Framework (REF), obs4MIPs has begun to broaden its scope to include a variety of different data structures (e.g., site data, zonal and domain mean time series). In some situations, CMOR may not be well-suited to preparing an obs4MIPs-compliant product and for these special cases alternative approaches are being used.

As defined in the [obs4MIPs Data Specifications \(ODS2.6\)](#), for a data product to be obs4MIPs-compliant, ***all input metadata and codes used to prepare the data must be archived in the obs4MIPs repository***. This applies to data products that have been prepared with or without CMOR. The obs4MIPs Steering Panel (SP) is working to streamline how this information is included in the GitHub repository.

The SP welcomes efforts to develop alternate approaches that match CMOR's treatment of metadata and data and looks forward to recommending such alternatives when mechanisms are in place to routinely verify CMOR equivalence. It is likely that a majority of modeling groups will continue to use CMOR for CMIP7, and during this CMIP phase it is envisioned that the WCRP will leverage CMOR and alternatives to address evolving scientific needs via the establishment of internationally coordinated infrastructure.