



# CDO und CMIP6

## DICAD 30 Monatstreffen

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# cdo cmor

## CMIP6\_Amon.json

contains parts of the data request in a CMOR-readable format

## grid\_info.nc

contains a grid description including coordinates and bounds

```
variables:  
    double lat(lat);  
    double  
lat_bnds(lat,bnds);
```

```
cdo cmor, CMIP6_Amon.json \  
    gi=grid_info.nc, \  
    i=config.txt, \  
    mt=mapping_table.txt \  
                                infile
```

## config.txt

contains the user configuration

```
activity_id="CMIP"
```

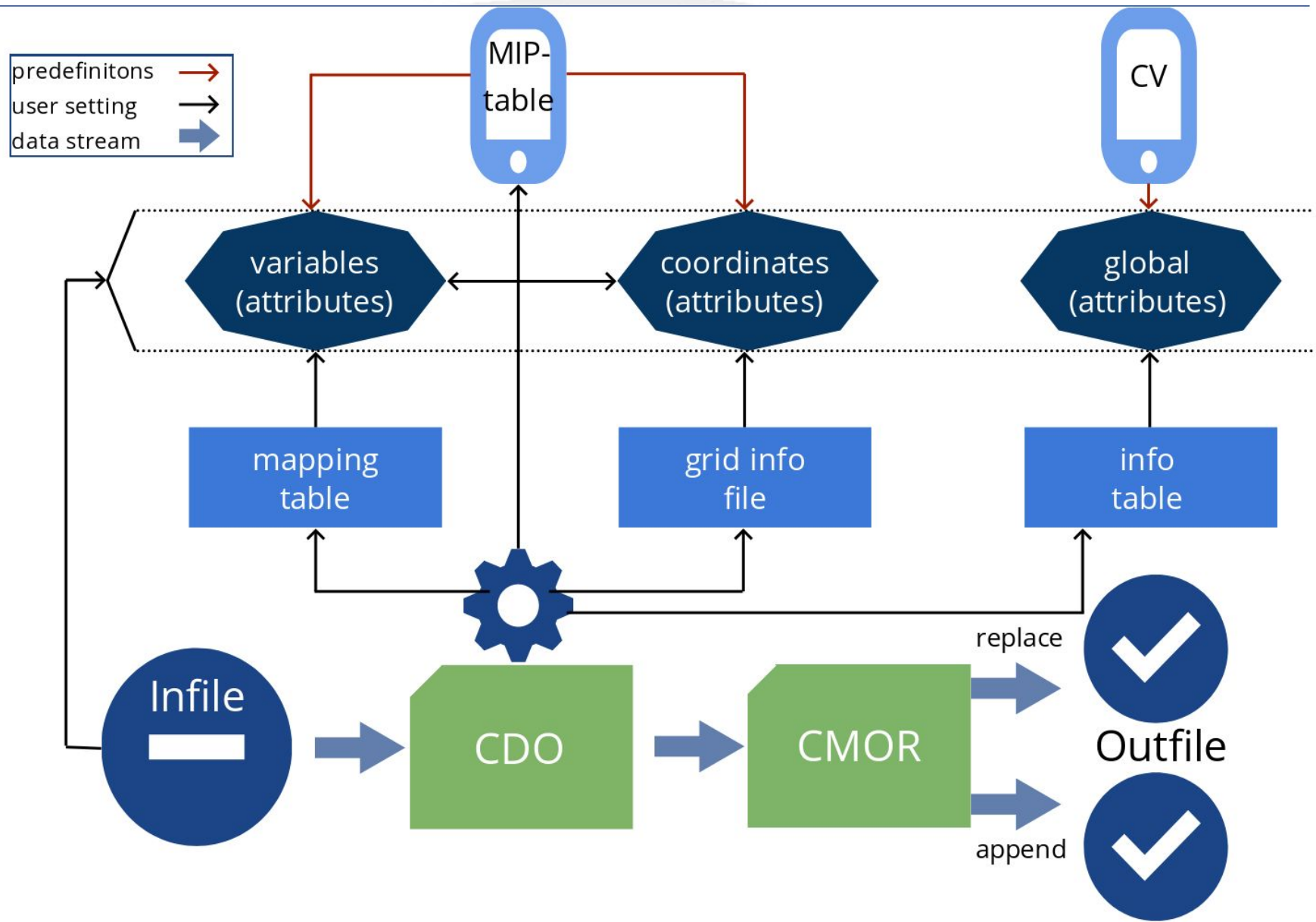
can be created with

<https://c6dreq.dkrz.de/cdocmorinfo/index.html>

## mapping\_table.txt

links model output variables with CMOR variables

```
&parameter pmt=Amon cmor_name=tasmax code=201
```



## Activities

- The operator is improved
  - No individual cmor branch in cdo dev anymore
  - Can be installed via conda
  - Compression deflate level can be set
  - Variables for decadal frequency can be created
  - Coordinate keywords can be set in the commandline
  - Stdout and Stderr are and will be improved
  - A fourth “spatial” axis can be created
- Support for cdo cmor users
  - AWI, MPI, GERICS
- Climate extremes indices operators of CDOs have been checked against ETCCDI’s definitions
  - Operators that fulfill the definition will be marked or renamed with ETCCDI
  - For other operators, at least a script will be made accessible to

## Annotations

- For an appropriate description of a **model level axes** defined by a formula including surface pressure, a surface pressure auxiliary variable have to be provided with the target CMOR variable. Surface pressure has to be available in the infile of a cdo cmor operation for standardization of variables which use these type of axes.
- Variables requested on the boundaries of a level (**halflevel**) can now be standardized with CMOR. This vertical axis type can be set via a key in GRIB files or a standard\_name in netCDF. Since this is not always possible, this half level axis type is also recognized if the correct “amount” of information is available for creating half levels *without bounds*.

## What we learned

[Modelers guide to the CMIP6 galaxy](#)

### 5. Model output requirements

CMIP6 Global Attributes, DRS, Filenames, Directory Structure, and CV's

10 September 2018 (v6.2.7)

**CMIP6 Data Request**  
**Data Request [01.00.29]**

```
tas_Amon_MPI-ESM1-2-HR_historical_r1i1p1f1_gn_185001-185012.nc
```

```
Conventions = "CF-1.7 CMIP-6.2";
```

```
data_specs_version = "01.00.29";
```

## What we learned

- Time stamps of model output is set three minutes backwards so that the record is not counted for a wrong day
- Specific time values and time bounds are requested for all subdaily frequencies.
- Setting the time values or time bounds is not yet possible for subdaily frequencies within cdo cmor
- Setting the time values or time bounds is neither comfortable nor performant at any post-processing step  
→ Create an option for

## Future

- Tag a version for DECK standardization
- cdo cmor stdout and stderr needs to be improved
- Solve the timeshift problem
- Icon Testdaten Cmorisieren
- Plans for organization of support requests on WebGUI and cdo cmor in order to make information accessible for all users
  - A redmine forum similar to the cdo users forum can be built