

HYPE netCDF Standard

Dimensions

Order of the dimensions should be: "other" variables → time → space

Dimensions, not variables, cannot store its own data. Time for example, need its own data variable (also named "time") as we need to know which time each timestep represent.

Members for example may NOT need to also be a variable as its implied that the members are sorted from like 0 1 2. If members is a variable the variable should be a int which holder the member number for each index, therefore not sorted is ok.

The time dimension is the only one that should be unlimited and should be named "time"..

Use name "id" for both dimension and variable when storing basin subids (i.e not gridded), it must be sorted in ascending order (CF standard).

Variables

Use missing_value and _FillValue = 1.e+20f

One data variable (such as pr) per file.

All data variable must have the attribute 'units'.

The time variable should have correct calendar, units and axis for example:

```
time:units = "days since 1971-01-01" ;
time:calendar = "proleptic_gregorian" ;
time:axis = "T" ;
```

Basin coordinates should be stored as variables "geo_x" and "geo_y" with attributes:

```
units = according to CF standard (like "degree_north")
long_name (e.g "sub-basin outlet latitude (WGS84)")
```

Elevations should be stored as variable "geo_z" with attributes:

```
units = "m"
long_name (e.g "sub-basin mean elevation (m above sea level)")
```

Filenames

Ensure the filename consist of enough tags to uniquely identify it. One example is
tasmin_cordex_EUR-44_ICHEC-EC-EARTH_rcp26_r12i1p1_SMHI-RCA4_v1_day_20960101-21001231.nc

As short as possible yet unique.

Metadata

Use CF convention 1.6 or latest <http://cfconventions.org/latest.html>

Check one of your files using the CF online check at <https://pumatest.nerc.ac.uk/cgi-bin/cf-checker.pl>

Ensure all attributes in the filename such as `_day_` has a correcspoding metadata attribute in the file like frequency = "day"

Include at least global metadata parameters for:

```
title (e.g "River discharge, Arctic-HYPE v4.2")
institution (e.g "SMHI")
source (e.g "Arctic-HYPE, historical analysis data")
references (e.g "www.smhi.se")
conventions (e.g "CF-1.6")
```

Filestructure

Use NETCDF4

Use compression level 5 as default.