Use Only Officially Supported Compression Filters on NetCDF-4 and NetCDF-4-Compatible HDF5 Data

Recommendation:

Only compression filters that are officially supported by a default installation of the current netCDF-4 software distribution should be used in Earth Science data products in netCDF-4 or netCDF-4-compatible HDF5 formats.

Recommendation Details: NetCDF4 has enabled access to non-default (i.e., non-DEFLATE) HDF5 compression filters starting from version 4.7.0. However, the filter identification and access are currently obscure (~five digit IDs) and non-portable (no guarantees client software will be able to decompress them). DEFLATE is currently the only compression filter that is guaranteed to work with default (non-customized) netCDF4 installations, and so DEFLATE is the only compression filter that should be used in interoperable Earth Science data products in netCDF-4 or netCDF-4-compatible HDF5 formats. Use of the shuffle filter is not prohibited since it is not a compression filter and is supported by the netCDF4 default installation. Combining the shuffle and the DEFLATE filters can noticeably improve the data compression ratio.

This recommendation may evolve as netCDF4 extends its default compression filter support to other filters. Description of netCDF-4 filter support can be found at https://docs.unidata.ucar.edu/netcdf-c/current/filters.html .

⚠ **Awaiting ESO Approval**

This recommendation has been finalized by DIWG but has not yet received final ESO approval.