

Preparation for Climate Modeling Exercises No. 1 and No. 2

In the climate modeling exercises we'll have a closer look at global and regional climate model output. For this purpose, we need the **CDO** postprocessing package and the **Panoply** visualization tool. Please try to install these two programs on your local computer, following the instructions given below. **Please give a preference to Panoply, i.e. try to install Panoply first.** Panoply is essential for the exercises. If the CDOs don't work, we'll switch to another option that does not require the CDOs.

1) Installation of Panoply (on Windows 32bit or 64bit)

- Download Panoply from http://www.giss.nasa.gov/tools/panoply/download_win.html (choose the 32bit Windows version or the 64bit version, according to your operating system)
- Alternatively: get the zip-file from <https://polybox.ethz.ch/public.php?service=files&t=5a59eaf8f717d2fb7feb397944ca0271> (32bit) or <https://polybox.ethz.ch/public.php?service=files&t=c4ea76668de6bd0e1830650512db1fc5> (64bit)
- Unzip the file (instructions on the GISS website mentioned above)
- Try to run `Panoply.exe`
- Get the tutorial from: <https://polybox.ethz.ch/public.php?service=files&t=b19f92edb352098a725837eeb194269d> and have a brief look at it

2) Installation of CDOs, Version 1.6.4 (on Windows 32bit or 64bit)

- Have a look at the CDO webpage on <https://code.zmaw.de/projects/cdo>
- Download the CDO zip file for Windows from <https://code.zmaw.de/attachments/download/8378/cdo-1.6.4-win32.zip>
- Unzip the file
- Help: <https://code.zmaw.de/projects/cdo/wiki/Win32>
 - CDO Full Documentation: <https://code.zmaw.de/projects/cdo/embedded/1.6.4/cdo.pdf>
 - CDO Introductory Slides: <https://polybox.ethz.ch/public.php?service=files&t=8f9a0134e852a5c63613ebf6214a8d48>
 - CDO Reference Card: https://code.zmaw.de/projects/cdo/embedded/1.6.4/cdo_refcard.pdf
- Place `cdo.exe` and `pthreadGC2.dll` into some newly created CDO directory on your machine
- Adjust Window's `PATH` variable: Start -> Control Panel -> System -> Edit Environment Variables for Your Account -> edit `PATH` (add a semicolon and your local CDO directory from above; NO SPACE IN BETWEEN!)
- Log off and log in again or reboot the computer
- Run `cmd.exe` (click the Start button and enter "cmd" in the search field) -> you'll get the console
- Check use of CDOs (`cdo -h`)
- In case of problems with changing directories etc., here's some help concerning Windows command line prompts: <http://ss64.com/nt/>
- In case an enlargement (full screen) of the `cmd` window is not possible, but you'd like to work with a larger screen:
 - Open a command prompt (`cmd.exe`)
 - From inside the command prompt window, run `wmic`
 - Right-Click the title bar of the command prompt window and select `Properties`
 - Check `QuickEdit Mode`
 - Exit `wmic` by typing `exit`

NOTE: The Windows CDO version might not support the netCDF4 data model. If you need to handle netCDF4 files, you'd additionally need to install the netCDF Operators available from <http://nco.sourceforge.net/src/nco-4.2.0.windows.mvs.exe>. Adjust your Windows path (see above), then convert a netCDF4 file to netCDF3 using `ncks -3 netcdf4_file.nc netcdf3_file.nc`.