

The purpose of the remapping tool is to have a common framework for mapping information from native Euro-CORDEX domains (EUR-44 and EUR-11 defined in Table 1 of the “CORDEX archive design” paper by O.B. Christensen et al.) onto regular CORDEX grids (EUR-44i and EUR-11i defined in Table 2 of the same document).

The constraints of the remapping tool include the following:

1. Executable commands within the tool are constrained to CDO and NCO
2. The basic remapping operand is conservative remapping as defined in CDO
3. Variables exposing a large sensitivity to land-sea contrast are remapped with reference to land-sea mask in the native grid and the regular grid. This includes virtually all (near-) surface variables. A list of parameter names is included in the remapping tool.
4. Near-surface temperature parameters (*tas*, *tasmin*, *tasmax*) are corrected with an adiabatic adjustment (6.5K/km) to account for differences in surface height between source grid points in the native domain and target grid points in the regular grids.
5. A common land-sea fraction (*sftlf*), land-sea mask (*lsm*), and surface height (*orog*) describing the basic surface characteristics of the regular CORDEX grids are employed. A NetCDF file containing such information at both resolutions, is part of the remapping tool.
6. Variables not categorized in 3) are remapped straightforwardly with disregard of land sea mask and model orography.
7. Isolated islands or lakes in the regular grid (typically sized at grid cell mesh) which are not counter-represented in the native grid will not be processed in step 3). To avoid the occurrence of missing values in the interior of the regular grid, those grid cells are filled with the outcome from the straightforward remap according to step 6)

Instructions ,requirements and conditions

1. Remapping tool requires a UNIX/LINUX environment
2. CDO must be installed
3. NCO must be installed (required are *ncdump*, *nccopy*, *ncks*, *ncatted*, *ncap2*, *ncrename*, *ncwa*)
4. A single C-shell script *doremap.sc* does the job per file
5. Sub-directories HWD and SWD must be specified in *doremap.sc*
6. The NetCDF file containing common *sftlf*, *lsm* and *orog* must reside in subdirectory HWD
7. *doremap.sc* requires a CORDEX-compliant NetCDF file containing as input-argument on the command line (input file can reside in a directory different from HWD and SWD)
8. on output a CORDEX-compliant NetCDF file *target.nc* will be produced in HWD
9. provided the input file is CORDEX format compliant, the output file will be CORDEX format compliant. General attributes including the domain name are adjusted, the creation date attribute is refreshed, and a unique tracking ID attribute is supplied
10. the first time a set of time- and variable-independent files with weight and conversion information will be assembled requiring more time

Disclaimer

1. the tool can only be applied for EUR-11→EUR-11i and EUR-44→EUR-44i remapping
2. native grids employing Lambert Conformal Conical(LCC) projection are not processed because cdo remapping is not prepared for handling LCC-grids