

## CDO - Bug #8144

### CDO remapeta does not find orography information

2017-12-12 12:09 - Paul Gierz

|  |                 |                        |            |
|--|-----------------|------------------------|------------|
| <b>Status:</b>   | Feedback        | <b>Start date:</b>     | 2017-12-12 |
| <b>Priority:</b>   | Normal          | <b>Due date:</b>       |            |
| <b>Assignee:</b>   | Oliver Heidmann | <b>% Done:</b>         | 0%         |
| <b>Category:</b>   |                 | <b>Estimated time:</b> | 0.00 hour  |
| <b>Target version:</b>   |                 | <b>Support Level:</b>  | 1          |
| <b>Program version:</b>  | cdo 1.8.2       |                        |            |
| <b>Description</b>   |                 |                        |            |
| Dear CDO developers,   |                 |                        |            |
| I'm having some trouble using the remapeta operator. When trying to vertically regrid humidity and temperature, I understand that I also should pass the geopotential height as an additional parameter to the operator. I run the command as follows, |                 |                        |            |
| <pre>ifile=regrid_file_T63L19.nc ofile=regrid_file_T63L47.nc cdo -s remapeta,vct,geosp_for_vertical_interpolation.nc \${ifile} \${ofile}</pre>   |                 |                        |            |
| I still get the following warning:   |                 |                        |            |
| cdo remapeta (Warning): surface_geopotential not found - set to zero!  |                 |                        |            |
| I've attached vct, geosp_for_vertical_interpolation, my input file, the output of cdo --version:   |                 |                        |            |
| Using cdo Version:   |                 |                        |            |
| Climate Data Operators version 1.8.2 ( <a href="http://mpimet.mpg.de/cdo">http://mpimet.mpg.de/cdo</a> )   |                 |                        |            |
| Compiled: by dbarbi on ollie1 (x86_64-unknown-linux-gnu) Jun 15 2017 13:52:57  |                 |                        |            |
| Compiler: gcc -std=gnu99 -fpic -fopenmp  |                 |                        |            |
| version: gcc (GCC) 4.8.5 20150623 (Red Hat 4.8.5-11)   |                 |                        |            |
| Features: DATA PTHREADS OpenMP3 HDF5 NC4/HDF5 OPeNDAP UDUNITS2 PROJ.4 FFTW3 SSE2   |                 |                        |            |
| Libraries: HDF5/1.8.12 proj/4.8  |                 |                        |            |
| Filetypes: srv ext ieg grb1 grb2 nc1 nc2 nc4 nc4c  |                 |                        |            |
| CDI library version : 1.8.2 of Jun 15 2017 13:52:18  |                 |                        |            |
| CGRIBEX library version : 1.7.6 of Dec 20 2016 19:55:24  |                 |                        |            |
| GRIB_API library version : 1.20.0  |                 |                        |            |
| NetCDF library version : 4.4.1.1 of Feb 15 2017 06:31:08 \$  |                 |                        |            |
| HDF5 library version : 1.8.12  |                 |                        |            |
| SERVICE library version : 1.4.0 of Jun 15 2017 13:52:14  |                 |                        |            |
| EXTRA library version : 1.4.0 of Jun 15 2017 13:52:12  |                 |                        |            |
| IEG library version : 1.4.0 of Jun 15 2017 13:52:13  |                 |                        |            |
| FILE library version : 1.8.3 of Jun 15 2017 13:52:12   |                 |                        |            |
| Would an update to the newer cdo 1.9.2 solve this problem?   |                 |                        |            |

#### History

#1 - 2017-12-14 16:04 - Ralf Mueller

- File ttt.nc added
- Status changed from New to Assigned
- Assignee set to Ralf Mueller
- Target version set to cdo-1.9.3

Confirmed with 1.9.2. It all works, if you merge the geopotential into the input data file first

```
cdo merge geosp_for_vertical_interpolation.nc regrid_file_T63L19.nc tt.nc
cdo remapeta,vct tt.nc ttt.nc
```

I uploaded the result file.

thx for the report!  
ralf

**#2 - 2017-12-14 16:09 - Ralf Mueller**

- Assignee changed from Ralf Mueller to Oliver Heidmann

**#3 - 2017-12-15 12:40 - Ralf Mueller**

- Target version deleted (cdo-1.9.3)

After a close look into the documentation, the code and your data I am sure CDO works correctly.

You get this warning because your input file does *not* contain any orography/geopotential height variable. Hence CDO is using a ZERO field instead and gives a warning about it.

The second parameter of operator remapeta takes a file with geopotential of your *target coordinate*. It does *not* replace a missing orography in the input data. But I am not sure, if geosp\_for\_vertical\_interpolation.nc contains source or target orography.

If it's the source geopotential *or* source and target geopotential should be identical, the merge operation above should solve the problem.

hth  
ralf

**#4 - 2017-12-15 12:41 - Ralf Mueller**

- Status changed from Assigned to Feedback

**#5 - 2017-12-15 12:49 - Paul Gierz**

Hi Ralf,

thanks very much for the help so far. Just to clarify and so I can update my scripts correctly: the file geosp\_for\_vertical\_interpolation.nc should contain the *target orography*, and should be given as a second parameter to remapeta operator. Furthermore, my input file regrid\_file\_T63L19.nc should contain a variable describing the *source orography*. Is this correct?

Cheers,  
Paul

**#6 - 2017-12-15 13:56 - Ralf Mueller**

Paul Gierz wrote:

Hi Ralf,

thanks very much for the help so far. Just to clarify and so I can update my scripts correctly: the file `geosp_for_vertical_interpolation.nc` should contain the *target orography*, and should be given as a second parameter to `remapeta` operator. Furthermore, my input file `regrid_file_T63L19.nc` should contain a variable describing the *source orography*. Is this correct?

if source and target orography are identical, just leave out the second parameter to `remapeta` - it will reuse the orography from `regrid_file_T63L19.nc`. On the other hand if orographies are different, you have to put the source orography in the input file before calling `remapeta` on it *with* `geosp_for_vertical_interpolation.nc` given.

| Files                               |         |            |              |
|-------------------------------------|---------|------------|--------------|
| vct                                 | 2.77 KB | 2017-12-12 | Paul Gierz   |
| geosp_for_vertical_interpolation.nc | 150 KB  | 2017-12-12 | Paul Gierz   |
| regrid_file_T63L19.nc               | 2.75 MB | 2017-12-12 | Paul Gierz   |
| tvt.nc                              | 6.83 MB | 2017-12-14 | Ralf Mueller |