

climada module dem

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https://github.com/davidnbresch/climada_module_etopo
https://github.com/davidnbresch/climada_module_dem
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Commented [LM1]: Should be renamed to
https://github.com/davidnbresch/climada_module_dem

This module implements a global digital elevation model (DEM), based on ETOPO, a global bathymetry (and topography) dataset¹ or based on SRTM, a global digital elevation data². It's a separate module, since topographic (and bathymetry) information can be used in various contexts – and since the dataset is quite large (ETOPO1 is 933 MB, ETOPO2 still 233 MB).

There are two relevant codes, `etopo_get` and `climada_srtm_get`.

For ETOPO, there are two datasets, ETOPO1 in high-res and ETOPO2 in mid-res. See <http://www.ngdc.noaa.gov/mgg/global/global.html> and the readme files in `.../dem/data`. Since ETOPO1 is globally consistent, its use is highly recommended (use ETOPO2 only if e.g. running into memory issues)

If there is no ETOPO data file, means no file `.../dem/data/ETOPO1.nc`, proceed as follows:

1. Download the file
http://www.ngdc.noaa.gov/mgg/global/relief/ETOPO1/data/ice_surface/grid_registered/netcdf/ETOPO1_lce_g_gmt4.grd.gz
2. Move it to `.../dem/data/`
3. Unzip it (it might do so automatically, e.g. on a Mac)
4. Rename it to `ETOPO1.nc`
5. Test it using `etopo_get` without any argument

For SRTM, there are different tiles across the globe. See <http://srtm.csi.cgiar.org/SELECTION/inputCoord.asp>.

1. Type `climada_srtm_get('El Salvador')` or any other country name into the command line.
2. The command line will tell you what tiles you need to download from <http://srtm.csi.cgiar.org/SELECTION/inputCoord.asp>
3. Move it to `.../dem/data/`
4. Unzip it (it might do so automatically, e.g. on a Mac)
5. Do not rename the file
6. Test it using `climada_srtm_get('El Salvador')` or any other country name

¹ It uses ETOPO dataset, see <http://www.ngdc.noaa.gov/mgg/global/global.html> and the readme files in `.../dem/data/`

² SRTM dataset consists of global digital elevation data on a 90 m resolution, it stands for Shuttle Radar Topographic Mission and is provided by NASA, see <http://srtm.csi.cgiar.org/Index.asp>