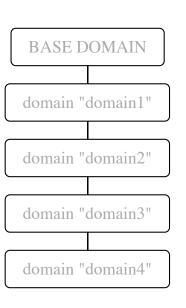
ICON Grid Generator + ExtPar Web Frontend

Welcome! Please fill out the following form and press the submit button.

| Requested operation: |
|-------------------------------------------------------------------------------------------------------------------------------------------------------|
| run grid generator + ExtPar tool generate script for ExtPar subset extraction re-run ExtPar tool for input file |
| Your e-mail address (required for download): |
| |
| input file: |
| create new base grid RxxByy (no input file) = Domain #0 |
| Grid resolution RxxByy: |
| $xx = \begin{bmatrix} 2 \end{bmatrix}$, $yy = \begin{bmatrix} 7 \end{bmatrix}$ approx. 19.7 km |
| rotation pole (degrees): longitude: 0.0 , latitude: 90.0 |
| "ASTER" orography |
| turn off high-resolution "ASTER" orography (using "GLOBE" dataset instead despite the grid resolution being finer than 3 km) |



Global parameters:

centre: 78
subcentre: 255

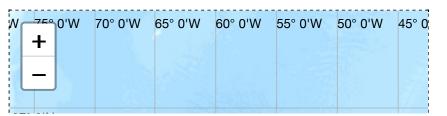
✓ spring dynamics optimization (recommended)

detailed optimization settings (change this if necessary):

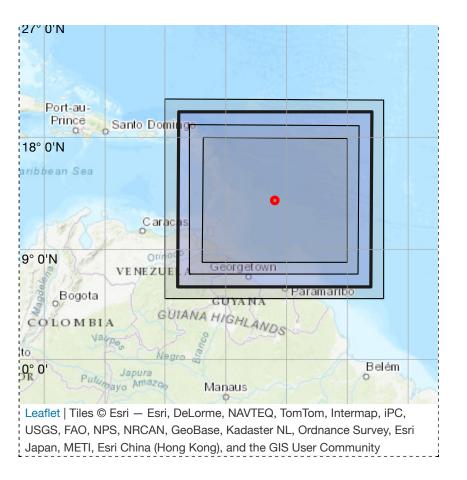
| max. number of iteration beta factor: fixed lateral boundary | 0.9 | |
|-------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| initial refinement deactivate to simply e | xtract first domain from base grid rather than refining. N | eeds to be activated in order to write a parent grid. |
| include base grid (don | nain #0) in result dataset. | |
| efine all cells of parent doma | spect to the ellipsoidal reference system WGS84. | W 75° 0'W 70° 0'W 65° 0'W 60° 0'W 55° 0'W 50° 0'W 45° 0 + - 27° 0'N |
| omain name: umber of grid used: | domain1 | |
| write parent grid: arent grid ID: | Enable this checkbox to generate a separate coarse (parent) grid. This coarse grid file can be used as a reduced radiation grid. Do not use this option for nests. | Port-au- Prince Santo Dominge |
| enter: | longitude (degrees) -56 | aribbean Sea |
| latitude (degrees) | 13 | Caricas |
| alf height: otate: | 8 | 9° 0'N VE NE ZUEL A Georgetown |
| orth pole: latitude (degrees) | longitude (degrees) 0.0 | Bogota GUIANA HIGHLANOS to Negro |
| Estimated resolution: Estimated no. of triangle cell | 9.863 km s: 35625 (R2B8) | O° O' Putunayo Amazo, Manaus |
| estimated 110. Of triangle cent estimate, does not take into account to note the limit of 3 000 000 cells for the | he cut-out by other domains; | Leaflet Tiles © Esri — Esri, DeLorme, NAVTEQ, TomTom, Intermap, iPC, USGS, FAO, NPS, NRCAN, GeoBase, Kadaster NL, Ordnance Survey, Esri Japan, METI, Esri China (Hong Kong), and the GIS User Community |

(Sub-) Domain #2 • rectangular • circular • refine all cells of parent domain

Note: Coordinate data is given with respect to the ellipsoidal reference system WGS84. ExtPar re-interprets coordinates without transformation.

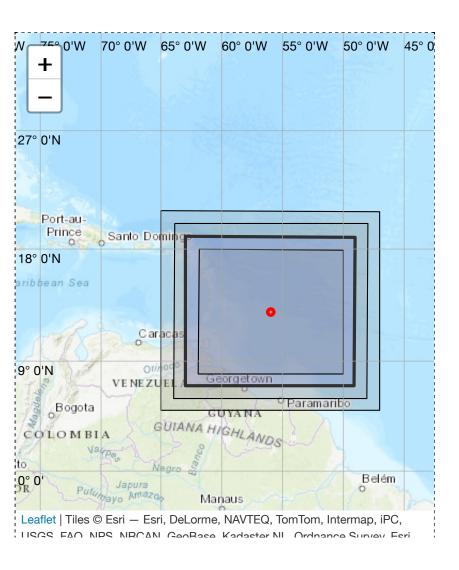


domain name: domain2 number of grid used: 99 Enable this checkbox to generate a separate coarse write parent grid: (parent) grid. This coarse grid file can be used as a reduced radiation grid. Do not use this option for nests. parent grid ID: longitude (degrees) center: -56 latitude (degrees) 13 half width: 8 half height: rotate: north pole: longitude (degrees) 0.0 latitude (degrees) 90.0 4.932 km Estimated resolution: Estimated no. of triangle cells: 110919 (R2B9) (estimate, does not take into account the cut-out by other domains; note the limit of 3 000 000 cells for the web interface)



(Sub-) Domain #3 • rectangular () circular () refine all cells of parent domain Note: Coordinate data is given with respect to the ellipsoidal reference system WGS84. ExtPar re-interprets coordinates without transformation. domain name: domain3 number of grid used: 99 Enable this checkbox to generate a separate coarse write parent grid: (parent) grid. This coarse grid file can be used as a reduced radiation grid. Do not use this option for nests. parent grid ID: longitude (degrees) center: -56 latitude (degrees) 13 half width: half height: 6 rotate: north pole: longitude (degrees) 0.0 latitude (degrees) 90.0 Estimated resolution: 2.466 km Estimated no. of triangle cells: 332978 (R2B10)

(estimate, does not take into account the cut-out by other domains;



| ersion Info |
|--------------------------------------------------------------------|
| Web service (Python): CON Tools: v2.4.7 Web page: 24-11-2021 |
| icongridgen: Γag Version 2.4.7: July 2020 |
| Extpar: May 2020 |
| |

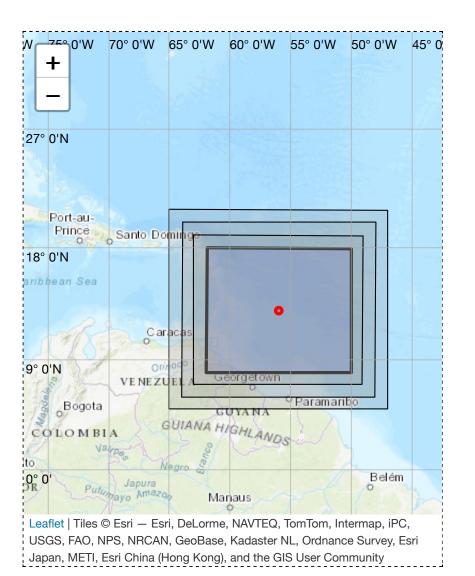
Japan, METI, Esri China (Hong Kong), and the GIS User Community

| (Sub-) Domain #4 • rectangular • circular • refine all cells of parent domain | | | |
|-------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------|--|--|
| Note: Coordinate data is given with respect to the ellipsoidal reference system WGS84. ExtPar re-interprets coordinates without transformation. | | | |
| domain name: | domain4 | | |
| number of grid used: | 99 | | |
| write parent grid: | Enable this checkbox to generate a separate coarse (parent) grid. This coarse grid file can be used as a reduced radiation grid. Do not use this option for nests. | | |
| parent grid ID: | 3 | | |
| center: | longitude (degrees) -56 | | |
| latitude (degrees) | 13 | | |
| half width: | 6 | | |
| half height: | 5 | | |
| rotate: | | | |
| north pole: | longitude (degrees) 0.0 | | |
| latitude (degrees) | 90.0 | | |

Estimated resolution: 1.233 km

Estimated no. of triangle cells: 951897 (R2B11)

(estimate, does not take into account the cut-out by other domains; note the limit of 3 000 000 cells for the web interface)



Add another domain Remove latest domain Proceed

News / Notes

- The extpar data set will be provided as NetCDF4 instead of NetCDF3 from Dezember 1st, 2020 forward.
- The base grids for the grid generation process can be downloaded from here. This download page also contains some details on the grid characteristics.
- Some information on ICON's grid structure is available in the ICON database documentation.

Quick Help

Step 1: Choose the base grid

The web-based generation of ICON grids and their corresponding ExtPar data sets starts from an "input file", which can be chosen from a pull-down menu with a predefined list of grids. It is also possible to start from a newly created base grid RxxByy by specifying xx and yy, following the algorithm by Sadourny, Arakawa et al (Sadourny, R.; Arakawa, A. & Mintz, Y.: Integration of the Non-divergent Barotropic Vorticity Equation with an Icosahedral-hexagonal Grid for the Sphere. Monthly Weather Review, 1968, 96, 351-356).

Note that when starting from an already existing file, the base grid will not be modified by the grid generator, and it will not be stored together with the generator output. The user merely chooses a subregion on the globe where the base grid is extracted. If, additionally, the subgrid is refined, it will have half of the grid size of the base grid.

Special case: "Generate script for ExtPar subset extraction".

When you'd like to use your own installation of the DWD ICON Tools grid generator, then you can use this option to prepare the grid generation. This option requires an installation of the ICON Tools version > 2.4.0.

Special case: "Re-run ExtPar".

Choose this option, if no new, finer grid shall be produced but only the ExtPar tool shall be re-run for the base grid.

This option cannot be chosen in the case of a newly created