Need technical data ? Then access the grid node numbers first !

Grid node numbers are possibly required to download Technical Data (scatter diagrams, weather windows, probability distribution functions, etc.), or mapped parameters.

What is the node_number variable ?

Technical data are delivered at geographic points "randomly distributed". The node_number is the index of the geographic points in this "random distribution".

How to use the node_number value ?

The node_number value is very often required to download technical data, typically using the OPENDAP protocol. Technical data are mostly represented by a n-dimension table or a series of n-dimension tables with n = 3 or 4. One of these dimensions has 110804 elements. Each element corresponds to one geographic point. To download technical data, first collect the node_number of the geographic point you are interested in (see next), then proceed to the downloading procedure.

How do I get the node_number value(s) for my geographic point/area ?

Step1
From the http://tds.webservice-energy.org/ catalog, select Marine Energy -> IREMARE -> Technical Data -> unstructured_grid_maps.nc. Then scroll down to the "Access:" part and choose "5. **NetcdfSubset:** /thredds/ncss/grid/technical-data/unstructured_grid_maps.nc

Step 2 – For one single geopoint
Collect the node_number in CSV format
1 - On the headline, select the "Grid as Point Dataset"
2 – Tick the variable(s) you want to collect (distance_to_node, node_number, node_lat, node_lon)
3 – Inform the Latitude/Longitude values of your geopoint (Right panel)
4 – Select CSV as output format
5 – Submit
6 – Repeat if you need multiple points
7 – Use the node_number variable to download technical data

Step 2 – For an area
Collect the node_number(s) in netCDF format
1 – Tick the variables you want to collect (distance_to_node, node_number, node_lat, node_lon)
2 – Untick the "Disable horizontal subsetting" box
3 – Inform the bounding box of your area
4 – Submit
5 – Use the node_number variable to download technical data
Note that it is very likely that the node_number, node_lat and node_lon matrices you may be collecting will show many repeated values. This is normal and is due to the way the node_number, node_lon and node_lat values are ascribed. See our note below about this.
http://tds.webservice-energy.org/thredds/catalog/technical-data/catalog.html

Note : Unstructured Grid points VS Regular Grid cells

All the information that is being generated and disseminated is based on the processing of Homere database. Homere delivers sea-state parameters at geographic points that are "randomly" distributed along the western coast of France. This "random" distribution is called Unstructured Grid (UG). For data/information dissemination purposes, these points are re-distributed on a 0.002° x 0.002° (~ 200m x 200m) regular grid (RG). The RG resolution was taken as the minimum distance between 2 UG points. In consequence, there is at most 1 UG point per RG cell and many more RG cells than UG points.
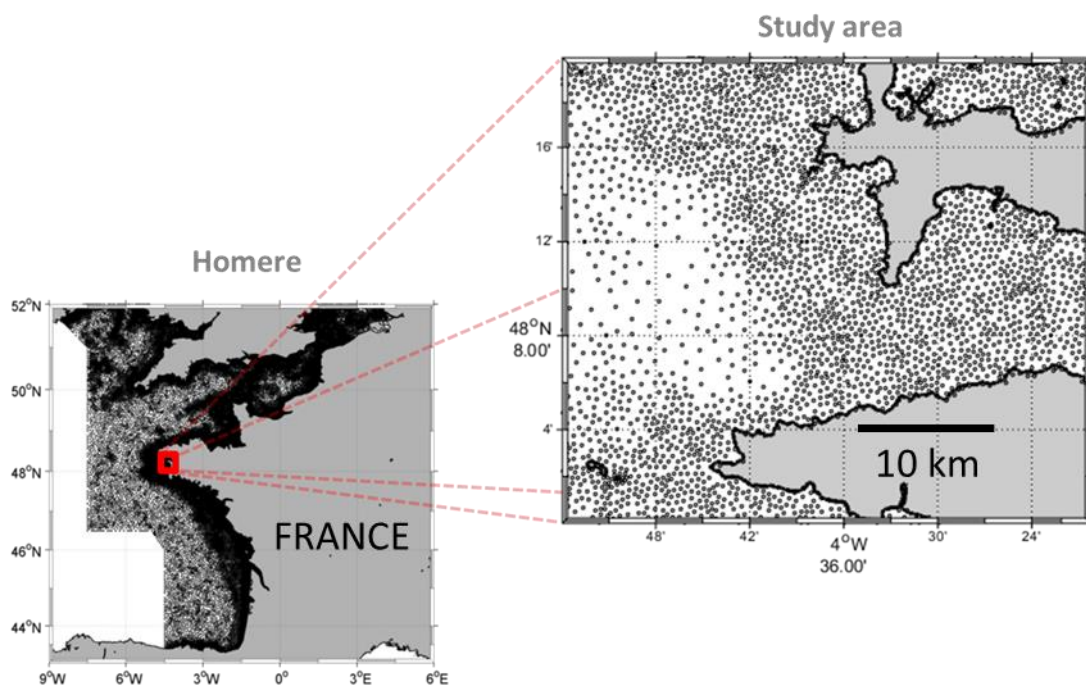

Figure 1: Homere Unstructured Grid (UG) points distribution

Regular grid cells value for mapped information

The value taken by an RG cell for mapped information (typically Hs maps, WavePower maps, etc) is interpolated from the values of the UG points around.

Regular grid cells value for technical information

For every single UG point, technical information is available. This technical information is typically a table or a series of tables (such as wave scatter diagrams). **Technical information for all RG cells is directly inherited from the UG point closest to their center.**

For instance, if the UG point closest to the center of one RG cell has a node_number of 123, then that grid cell also takes node_number value of 123.

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