

“Grid Interpolator v.1.0”: documentation file

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It is also mandatory to cite the use of “Grid Interpolator v.1.0 (RSE SpA)” in all the related publications, reports and dissemination tools and media, by means of the following citation:

“The minor tool “Grid Interpolator v.1.0” is realised by RSE SpA thanks to the funding “Fondo di Ricerca per il Sistema Elettrico” within the frame of a Program Agreement between RSE SpA and the Italian Ministry of Economic Development (Ministero dello Sviluppo Economico).”

3. Acknowledgments

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4. Description and references

“Grid Interpolator v.1.0” (RSE SpA) reads a 3D field of values from an input grid and interpolates them on an output grid with a different spatial resolution. The input file is a xyz file (with two additional ad-hoc lines at the beginning). The output field is available in both the file formats xyz and DEM. This tool is also useful to post-process the 2D fields of the maximum specific height and the maximum water depth as estimated by SPHERA v.8.0 (RSE SpA).

With Copyright 2016 (RSE SpA), “Grid Interpolator v.1.0” is written by Andrea Amicarelli (email address: andrea.amicarelli@rse-web.it).

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5. Notes

Two additional lines are reported at the beginning of the xyz input file “input_field.prn”, as in the following example:

“

```
n_points_in  x_min  y_min  z_min  x_max  y_max  z_max  dx_out  dy_out  dz_out
21822 1152.77000  71.07100  0.00000 25779.70000 9926.20000  1.00000  9.47609  9.47609  1.00000
```

“

with the following parameter definition:

n_points_in: number of points in the input file;

x_min: minimum x-coordinate;

y_min: minimum y-coordinate;

z_min: minimum z-coordinate;

x_max: maximum x-coordinate;

y_max: maximum y-coordinate;

z_max: maximum z-coordinate;

dx_out: spatial resolution of the output field along the x-axis direction;

dy_out: spatial resolution of the output field along the y-axis direction;

dz_out: spatial resolution of the output field along the z-axis direction.

The format of the first additional line does not alter the tool execution.

Fortran format specifier of the second additional line is ‘(i12,9(g12.5))’ .