Memo

To

To whom it may concern

Date	Our reference	Number of pages
2020-06-13	001	8
Contact person	**Direct line**	**E-mail**
Jan Mooiman	—	jan.mooiman@deltares nl

Subject

Manual to plot result files of D-Flow FM in QGIS 3.12 (map- and history-files)

Contents

1 Release Notes

Release	Description
0.00.00	- No information available.

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2 Menu bar

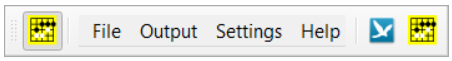


Figure 1: *The menu bar of the QGIS_UMESH plugin*

2.1 File

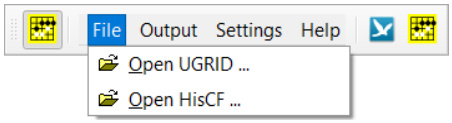


Figure 2: *Menu →File*

2.1.1 Open UGRID

When selecting this option you are able to select netCDF files which are meet the UGRID standard. Example files are the mesh- and map-file of the D-Flow FM program (<∗_net.nc>, <∗_map.nc>). Only the map-file could contain time series.

2.1.2 Open HisCF

When selecting this option you are able to select netCDF files which are meet the climate and forecast history file standard. Example files are the history output files of the program D-Flow FM (<∗_his.nc>).

2.2 Output

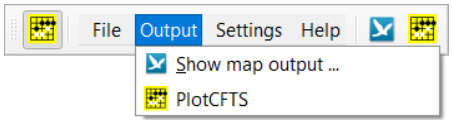
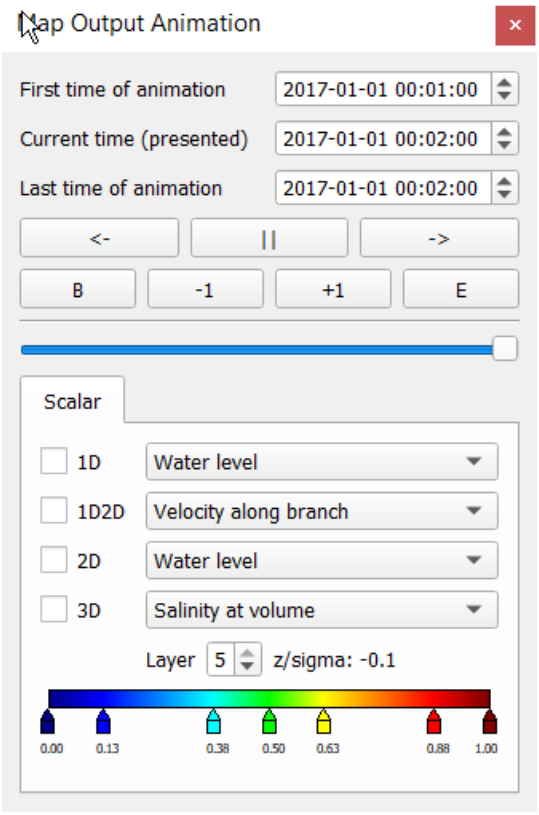


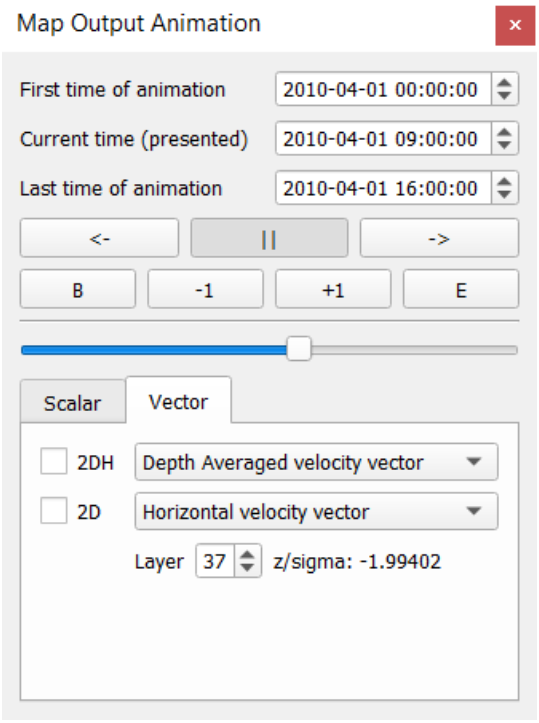
Figure 3: *Menu →Output*

2.2.1 Show map output

After selecting *Output→Show map output* the window **Map Output Animation** will open, see as example Figure 4a.



(a) *Layout scalar quantities; sigma layer at $\sigma = -0.1$ (near the surface)*



(b) *Layout vector quantities; fixed layer at $z = -1.99402$ (near the surface).*

Figure 4: Map Output Animation *window for scalars and vector.*

2.2.2 PlotCFTS

After selecting *Output→PlotCFTS* the program PlotCFTS will start, see as example Figure 5. Select from the menubar of the PlotCFTS program menu option *Help →User Manual* to open the user manual for the program PlotCFTS.

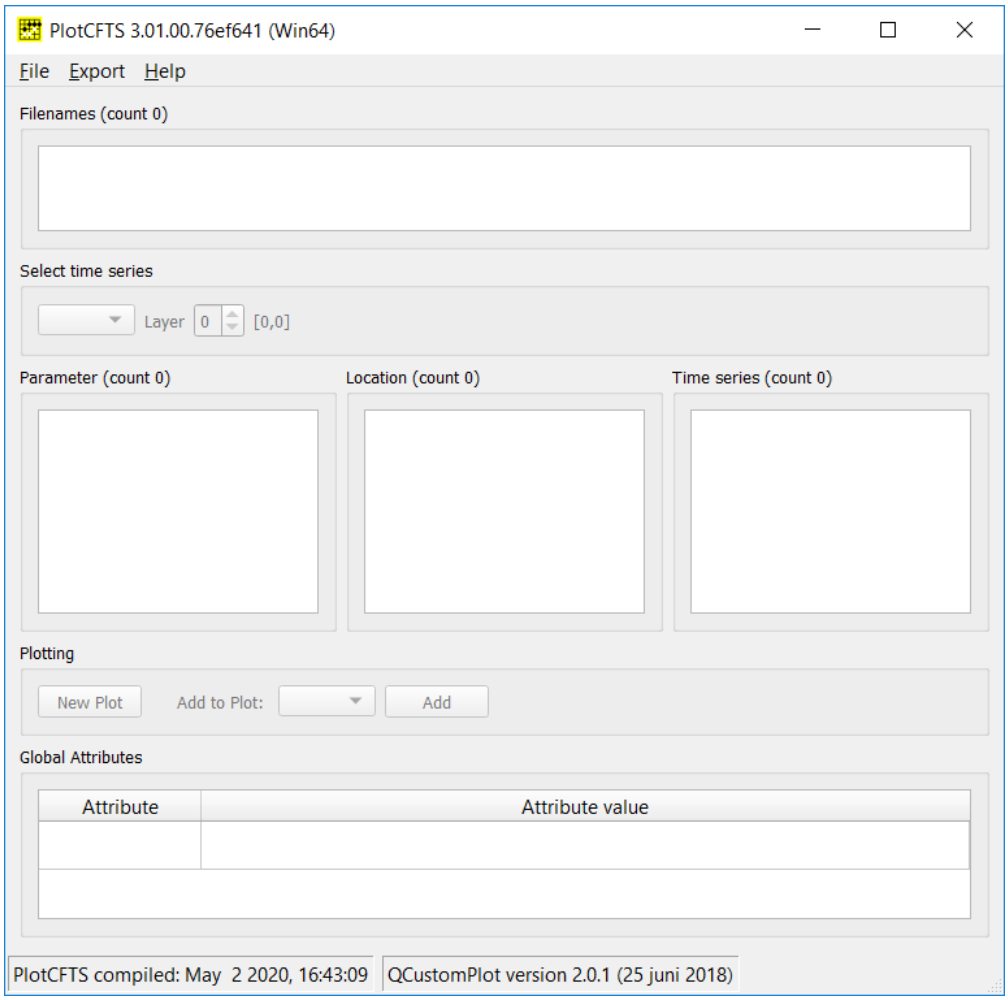


Figure 5: *Main window of the PlotCFTS program.*

2.3 Settings

Settings for the presentation of scalars and vectors.

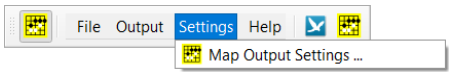


Figure 6: *Menu →Settings*

When selecting this option some settings for the presentation of the variables via the window **Map Output Animation** can be set. This window will also pop up when using the right mouse button within the window **Map Output Animation**.

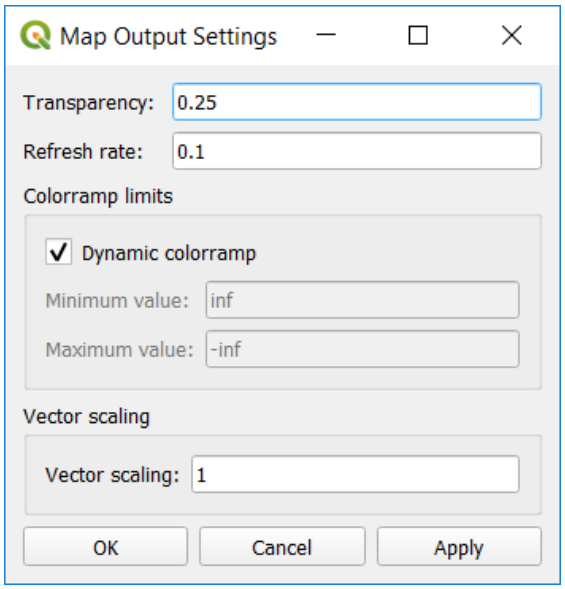


Figure 7: *Window* ***Map Output Settings***

The following quantities can be specified in the window presented by Figure 7:

Transparency	Specify the transparency of the iso patches for the scalars.
Refresh rate	Specify the refresh rate, in seconds, of the images during animation.
Colorramp limits	
Dynamic colorramp	
checked	Colorramp limits are determined by the minimum and maximum value of the scalar. These values reach their extreme values after all timestep are visualised.
unchecked	Minimum value: specify the minimum value for the scalar. Maximum value: specify the maximum value for the scalar.
Vector scaling	
Vector scaling	The vector of length 1 (ex. $1\,\mathrm{m\,s^{-1}}$) is scaled with this factor. The drawing length is based on the averaged cell size.

2.4 Help

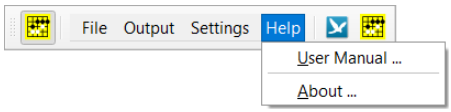
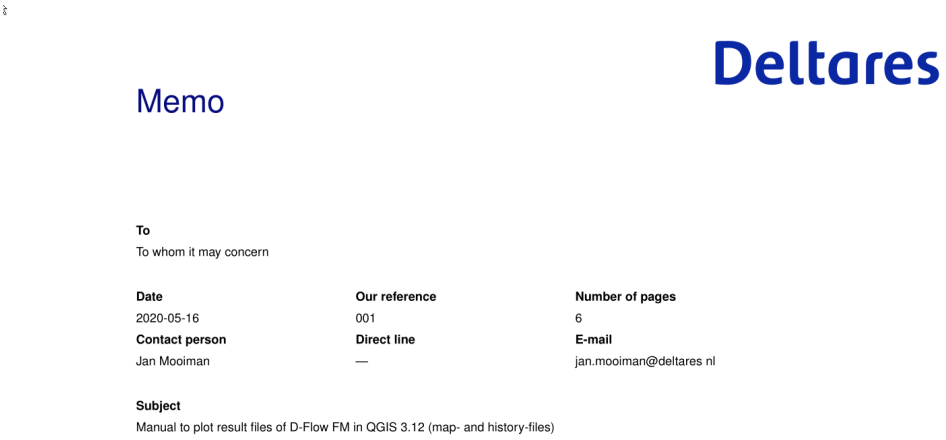


Figure 8: *Menu →Help*

2.4.1 User Manual

Shows the user manual



Deltares

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Figure 9: *QGIS_UMESH user manual*

2.4.2 About

Shows the about box.

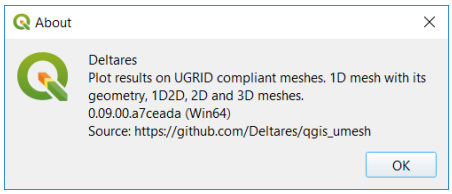

Figure 10: *About box*

3 QGIS panels

Some QGIS panels are shown after reading a netCDF map-file.

3.1 Layer panel

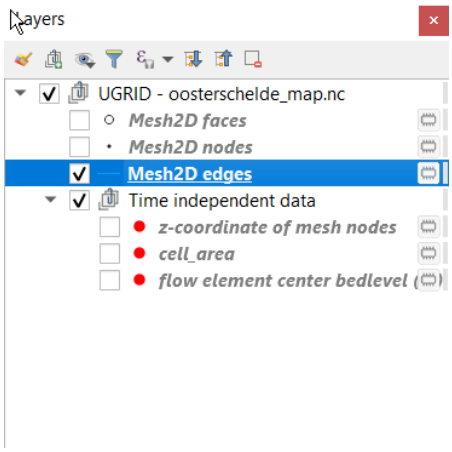

Figure 11: *The QGIS layer panel after reading a netCDF map-file.*

3.2 Log messages panel

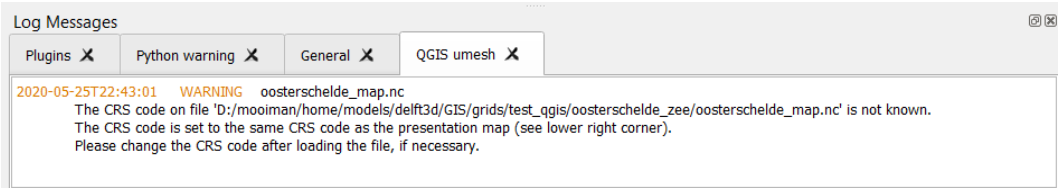

Figure 12: *The QGIS layer panel after reading a netCDF map-file.*

4 Examples figures

Examples are given for a scalar field (Depth averaged velocity magnitude) and the corresponding vector field (arrow and direction).

4.1 Example scalar field

These fields are given on the output files of D-Flow FM.

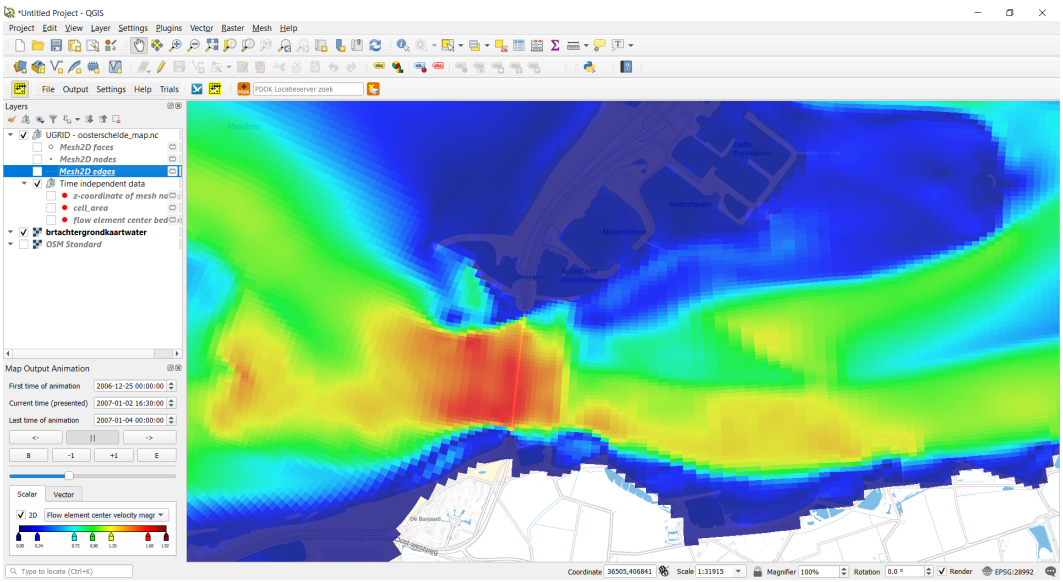

Figure 13: *Depth averaged velocity, magnitude.*

4.2 Example vector field

These fields are not given on the output files of D-Flow FM. So the postprocessing program (QGIS_UMESH) need to compute the quantities of the vector field, like vector arrows and vector direction.

Note: the "velocity magnitude" is given on the output file of D-Flow FM and thus computed by D-Flow FM. The quantity "velocity magnitude" is therefor available in the tab *Scalar*

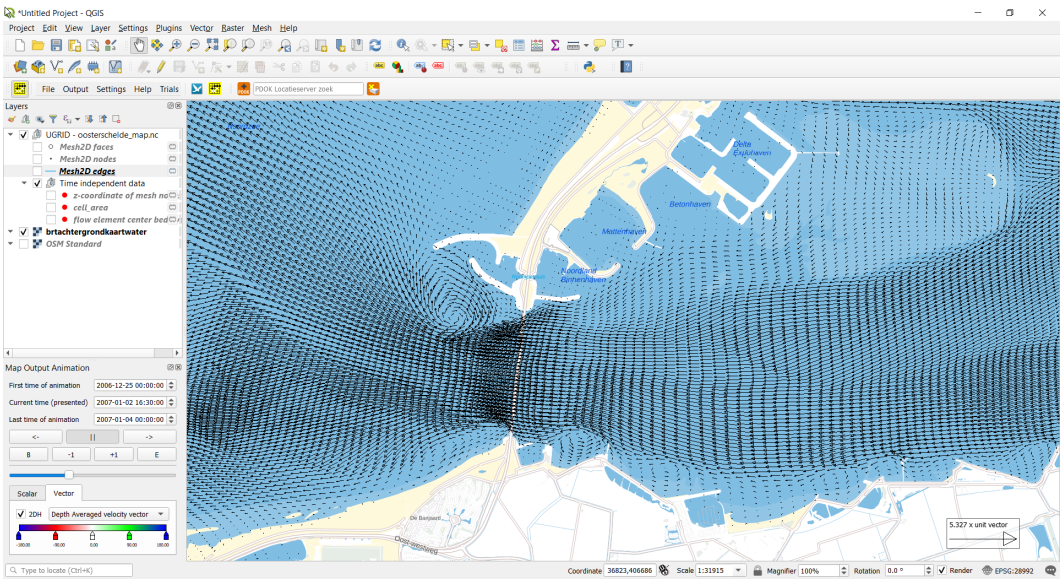

Figure 14: *Depth averaged velocity, vector.*

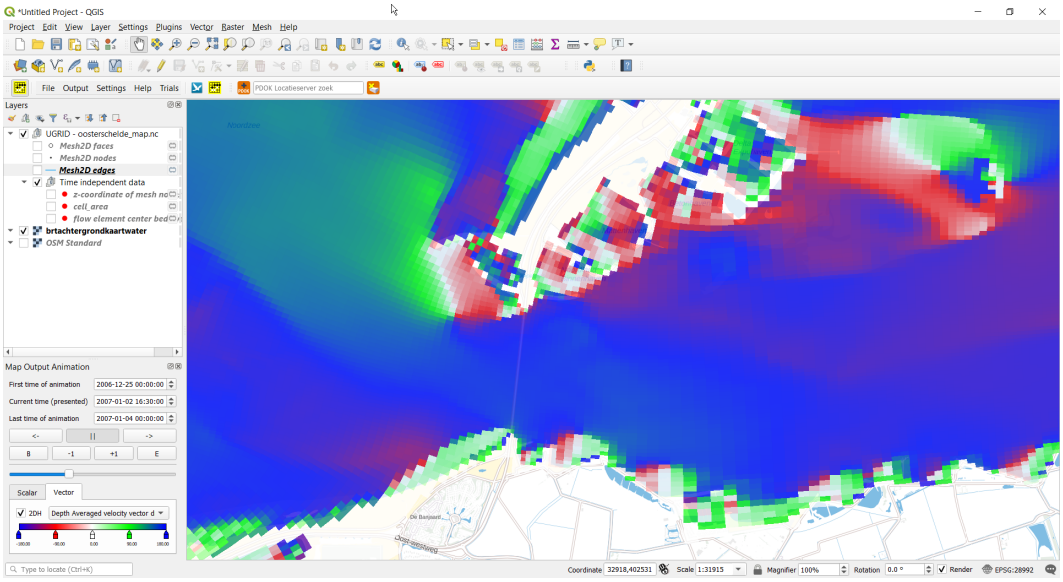

Figure 15: *Depth averaged velocity, direction.*

5 Source

The source code is available on GitHUB:

https://github.com/Deltares/qgis_umesh