

Manual for Package: delft3d

Revision 3M

Karl Kästner

November 3, 2022

Contents

1	@DFM	1
1.1	DFM	1
1.2	export_bc	1
1.3	export_cross_section_geometry	1
1.4	export_his	1
1.5	export_pli	1
2	@DFM/old	1
2.1	write_mor	1
2.2	write_sed	2
3	@DFM	2
3.1	read_cross_section_geometry	2
3.2	read_mdu	2
3.3	read_pli	2
3.4	write_friction_ext	2
3.5	write_initial_water_level	2
3.6	write_project	2
4	@DFM_Calibrator	2
4.1	DFM_Calibrator	2
4.2	calibrate	2
4.3	calibration_objective	3
4.4	extract	3
4.5	extract_discharge	3
4.6	extract_water_level	3
4.7	getstate	3
4.8	log	3
4.9	print_calibration_parameter	3

4.10	run	3
5	@DFM_Map	3
5.1	DFM_Map	3
5.2	FlowLink_waterdepth	4
5.3	FlowLink_width	4
5.4	bed_shear_stress	4
5.5	bedform_dimension	4
5.6	cat	4
5.7	cross_section_1d	4
5.8	discharge_1d	4
5.9	elem_x_centre	4
5.10	elem_y_centre	4
5.11	energy_transport_1d	4
5.12	flicker	5
5.13	grain_size	5
5.14	mtime	5
5.15	nearest_FlowElem	5
5.16	nearest_FlowLink	5
5.17	nedge	5
5.18	nelem	5
5.19	nvertex	5
5.20	order_coordinates	5
5.21	plot	5
5.22	plot_ElemLink	6
5.23	plot_FlowElemContour	6
5.24	plot_FlowLink	6
5.25	plot_NetLink	6
5.26	plot_NetLinkContour	6
5.27	read_grain_size	6
5.28	read_rgh	6
5.29	resample	6
5.30	roughness	6
5.31	sediment_transport	6
5.32	sediment_transport_rijn	7
5.33	time	7
5.34	transport_stage_rijn	7
5.35	velocity_1d	7
5.36	video	7
5.37	waterlevel	7
6	@Delft3D	7
6.1	Delft3D	7
6.2	default_bcc	7

6.3	export_bcc	7
6.4	export_bcc_sal	8
6.5	export_bcm	8
6.6	export_bct	8
6.7	export_bnd	8
6.8	export_config_xml	8
6.9	export_crs	8
6.10	export_inicomp	8
6.11	export_morfac	8
6.12	export_obs	8
6.13	export_thin_dams	8
6.14	export_tra	9
6.15	export_trt	9
6.16	export_trtdef	9
6.17	folder_name	9
6.18	read_all	9
6.19	set_fractions	9
6.20	write_all	9
6.21	write_bch	9
6.22	write_ddb	9
6.23	write_ini	9
7	@Delft3D_His	10
7.1	Delft3D_His	10
8	@Delft3D_Map	10
8.1	Delft3D_Map	10
8.2	backscatter	10
8.3	calibrate_backscatter	10
8.4	cs_flux	11
8.5	difference	11
8.6	discharge	11
8.7	init	11
8.8	mark_cs	11
8.9	plot_cs	11
8.10	plot_cs2	11
8.11	plot_cs_1d	11
8.12	plot_stratigraphy	11
8.13	quiver_cs	11
8.14	to_earth	12
8.15	video	12
9	@Delft3D_Mdf	12
9.1	Delft3D_Mdf	12

9.2	compose_domain	12
9.3	compose_mdf	12
10	@Delft3D_Mor	12
10.1	Delft3D_Mor	12
11	@Delft3D_Sed	12
11.1	Delft3D_Sed	12
11.2	set_gsd	12
12	delft3d	13
12.1	Mor_Units	13
12.2	d3d_predict_final_state	13
12.3	dfm_export_bc	13
12.4	export_mft	13
1	@DFM	
1.1	DFM	
1.2	export_bc	
1.3	export_cross_section_geometry	
1.4	export_his	
1.5	export_pli	

2 @DFM/old

2.1 write_mor

2.2 write_sed

3 @DFM

3.1 read_cross_section_geometry

3.2 read_mdu

3.3 read_pli

3.4 write_friction_ext

3.5 write_initial_water_level

3.6 write_project

4 @DFM_Calibrator

4.1 DFM_Calibrator

4.2 `calibrate`

4.3 `calibration_objective`

4.4 `extract`

4.5 `extract_discharge`

4.6 `extract_water_level`

4.7 `getstate`

4.8 `log`

4.9 `print_calibration_parameter`

4.10 `run`

5 @DFM_Map

5.1 DFM_Map

5.2 FlowLink_waterdepth

5.3 FlowLink_width

5.4 bed_shear_stress

5.5 bedform_dimension

5.6 cat

5.7 cross_section_1d

5.8 discharge_1d

5.9 elem_x_centre

5.10 elem_y_centre

5.11 energy_transport_1d

5.12 flicker

5.13 grain_size

5.14 mtime

5.15 nearest_FlowElem

5.16 nearest_FlowLink

5.17 nedge

5.18 nelem

5.19 nvertex

5.20 `order_coordinates`

5.21 `plot`

5.22 `plot_ElemLink`

5.23 `plot_FlowElemContour`

5.24 `plot_FlowLink`

5.25 `plot_NetLink`

5.26 `plot_NetLinkContour`

5.27 `read_grain_size`

5.28 `read_rgh`

5.29 `resample`

5.30 roughness

5.31 sediment_transport

5.32 sediment_transport_rijn

5.33 time

5.34 transport_stage_rijn

5.35 velocity_1d

5.36 video

5.37 waterlevel

6 @Delft3D

6.1 Delft3D

interface for automatically generating and reading Delft3D-4 models

6.2 default_bcc

6.3 export_bcc

6.4 export_bcc_sal

6.5 export_bcm

6.6 export_bct

6.7 export_bnd

6.8 export_config_xml

6.9 export_crs

6.10 export_inicomp

6.11 export_morfac

6.12 `export_obs`

6.13 `export_thin_dams`

6.14 `export_tra`

6.15 `export_trt`

6.16 `export_trtdef`

6.17 `folder_name`

6.18 `read_all`

6.19 `set_fractions`

6.20 `write_all`

6.21 `write_bch`

6.22 write_ddb

6.23 write_ini

7 @Delft3D_His

7.1 Delft3D_His

```
fdx = (Xc~=0) & (Yc~=0);
fdx(1,:) = true; fdx(end,:) = true;
fdx(:,1) = true; fdx(:,end) = true;
fdx = fdx & (X>0);
X = obj.X;
for idx=1:size(u3,2)
    % first
    if (isnan(u3(1,idx,1,1)))
        u3(:,idx,1,:) = 0;
    end % if first
    % centre
    for jdx=2:size(u3,3)-1
        if (~isnan(X(idx,jdx)) && isnan(u3(1,
            idx,jdx,1)) ...
            && ( isnan(X(idx,jdx+1)) || isnan(X
                (idx,jdx-1)) ) )
            u3(:,idx,jdx,:) = 0;
        end
    end % for jdx
    % last
    if (isnan(u3(1,idx,end,1)))
        u3(:,idx,end,:) = 0;
    end % if last
end % for idx
```

8 @Delft3D_Map

8.1 Delft3D_Map

8.2 backscatter

8.3 calibrate_backscatter

```
c = permute( c,[4,1,2,3]);
```

8.4 cs_flux

8.5 difference

8.6 discharge

8.7 init

8.8 mark_cs

8.9 plot_cs

8.10 plot_cs2

8.11 plot_cs_1d

8.12 plot_stratigraphy

8.13 quiver_cs

8.14 to_earth

8.15 video

```
x = obj.elem_x();  
y = obj.elem_y();
```

9 @Delft3D_Mdf

9.1 Delft3D_Mdf

9.2 compose_domain

9.3 compose_mdf

10 @Delft3D_Mor

10.1 Delft3D_Mor

11 @Delft3D_Sed

11.1 Delft3D_Sed

11.2 set_gsd

12 delft3d

12.1 Mor_Units

12.2 d3d_predict_final_state

12.3 dfm_export_bc

12.4 export_mft