

Modelo numérico DELFT 3D:

FLOW

Ingeniería de Costas 2015-2016

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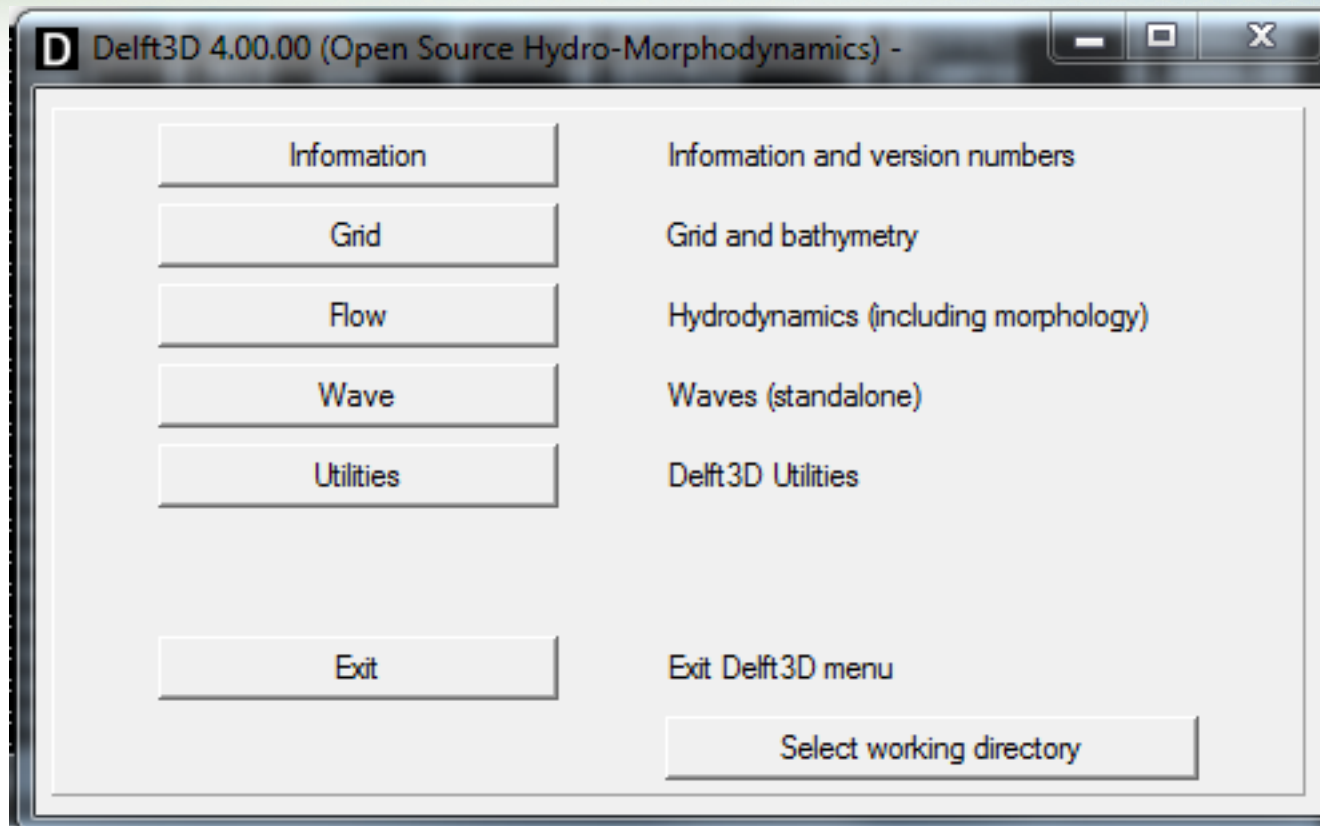
ugr

Universidad
de Granada

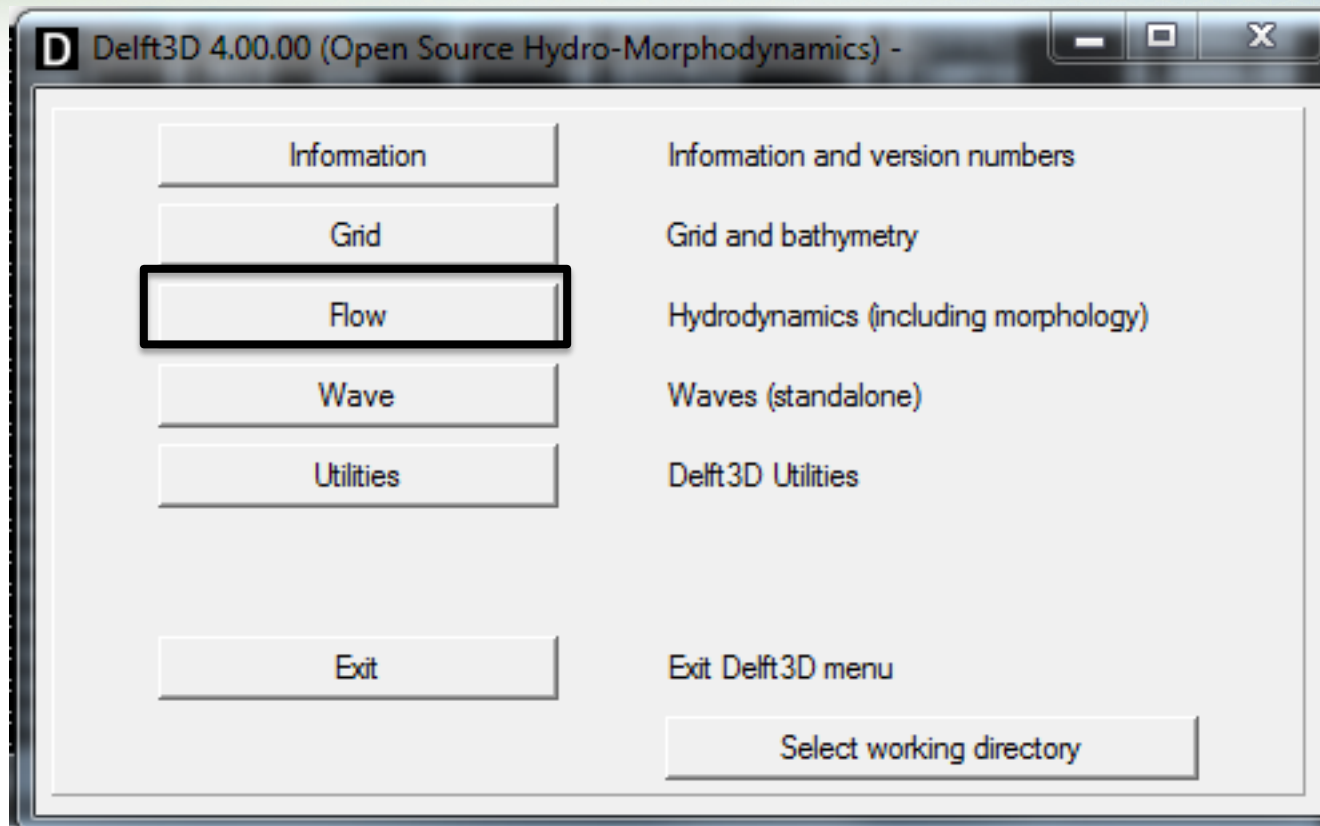


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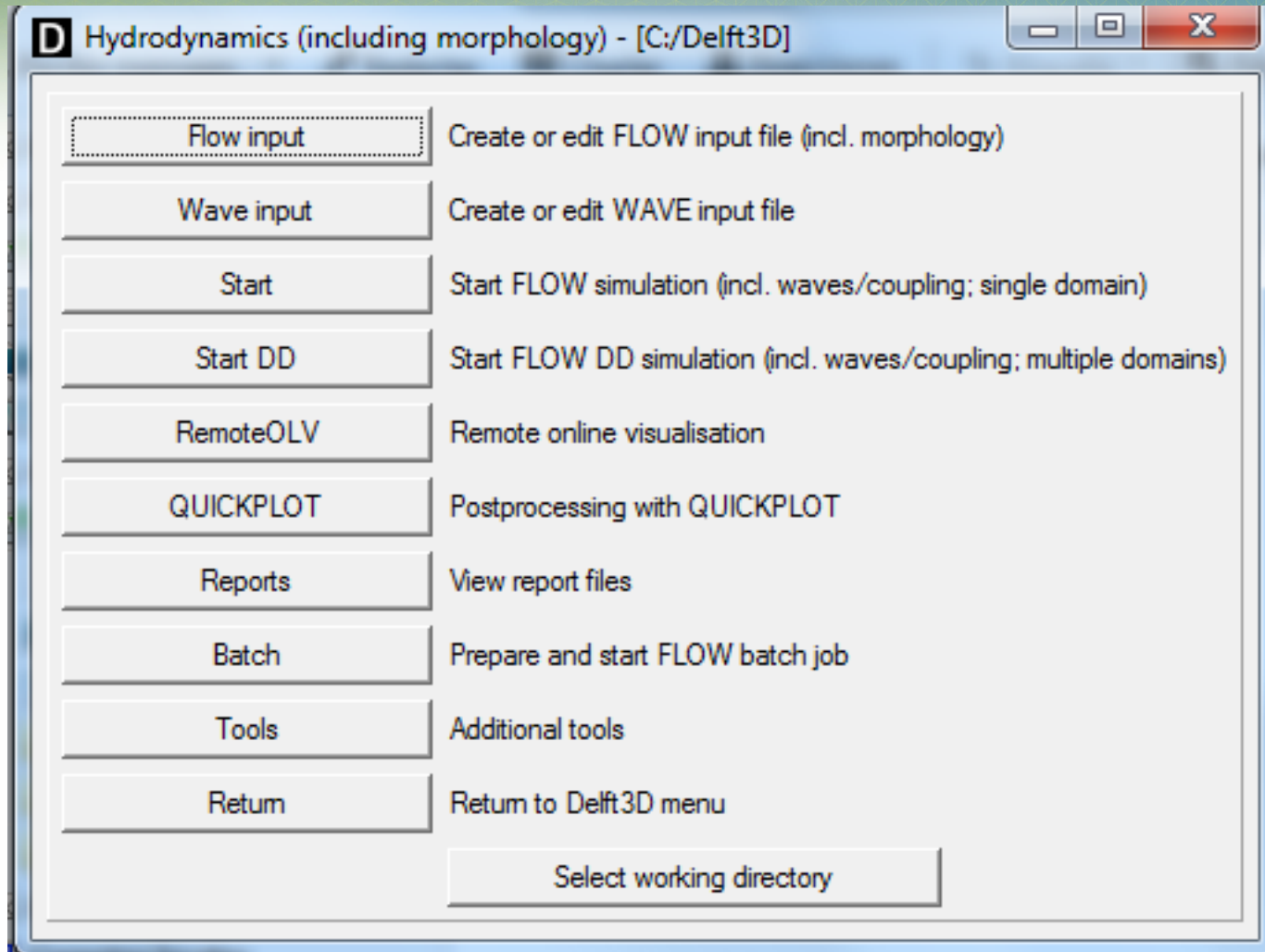
Modelo numérico DELFT 3D: FLOW



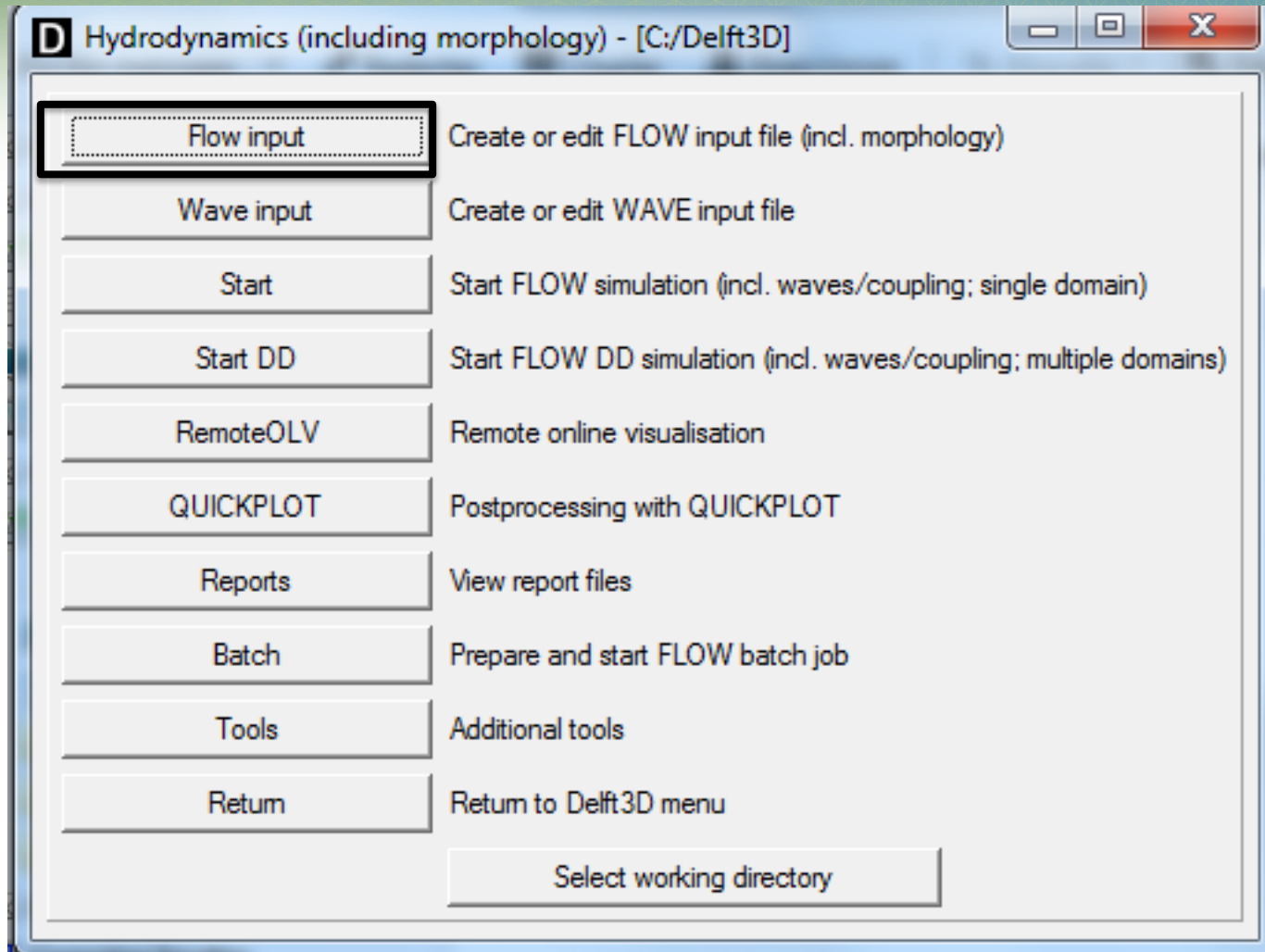
Modelo numérico DELFT 3D: FLOW



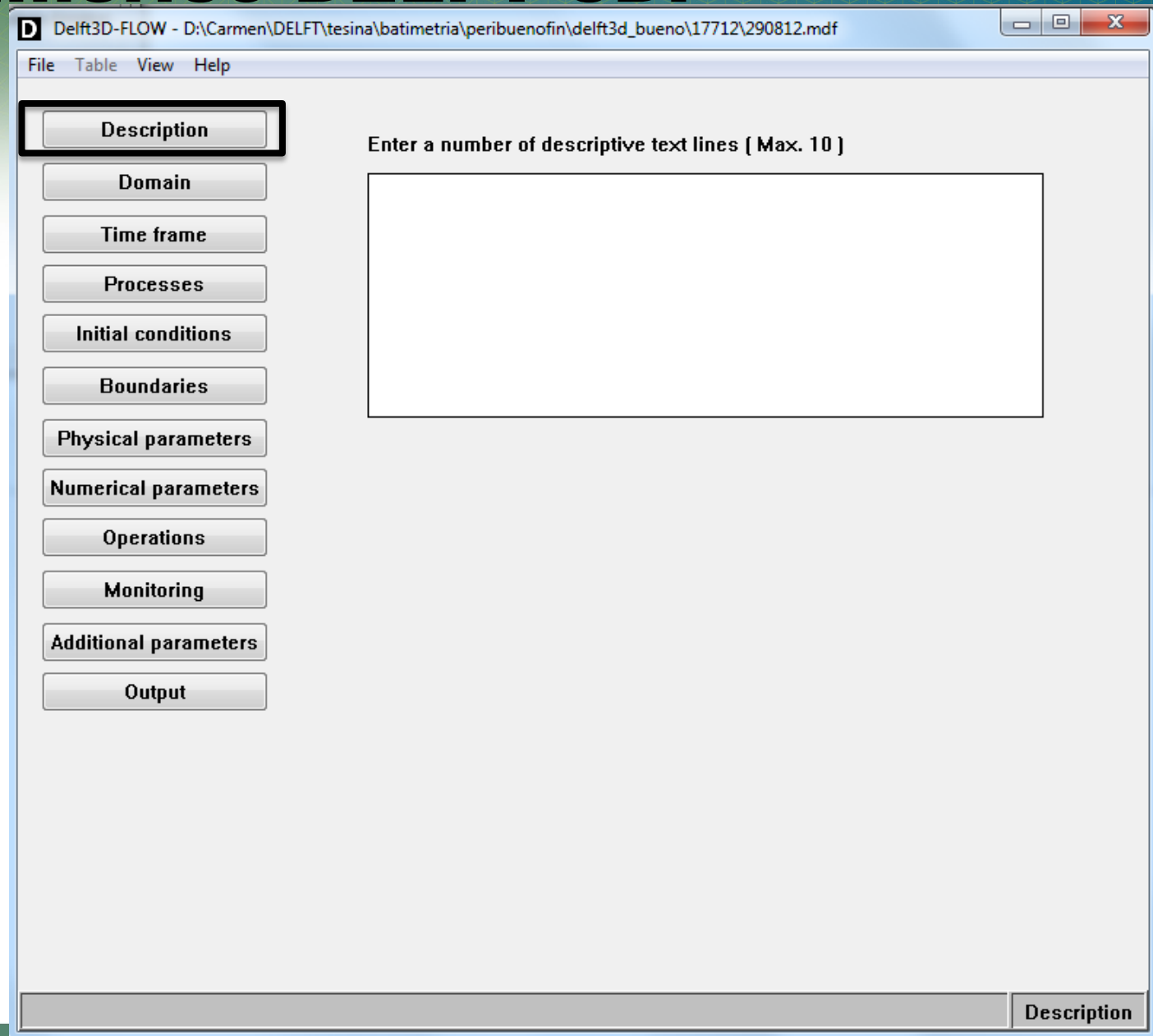
Modelo numérico DELFT 3D: FLOW



Modelo numérico DELFT 3D: FLOW



Modelo numérico DELFT 3D: FLOW



Modelo numérico DELFT 3D: FLOW

The screenshot displays the Delft3D-FLOW software interface. The window title is "Delft3D-FLOW - D:\Carmen\DELFT\tesina\batimetria\peribuenofin\delft3d_bueno\17712\290812.mdf". The menu bar includes "File", "Table", "View", and "Help".

On the left side, there is a vertical navigation pane with buttons for "Description", "Domain", "Time frame", "Processes", "Initial conditions", "Boundaries", "Physical parameters", "Numerical parameters", "Operations", "Monitoring", "Additional parameters", and "Output". The "Domain" button is highlighted with a thick black border.

The main area is divided into two sections:

- Domain:** Contains buttons for "Grid parameters", "Bathymetry", "Dry points", and "Thin dams". The "Grid parameters" button is also highlighted with a thick black border.
- Grid parameters:** Contains buttons for "Open grid" and "Open grid enclosure". Below these are input fields for:
 - Co-ordinate system: Cartesian
 - Grid points in M-direction: 245
 - Grid points in N-direction: 245
 - Latitude: 36.25 [dec. deg]
 - Orientation: 0 [dec. deg]
 - Number of layers: 3

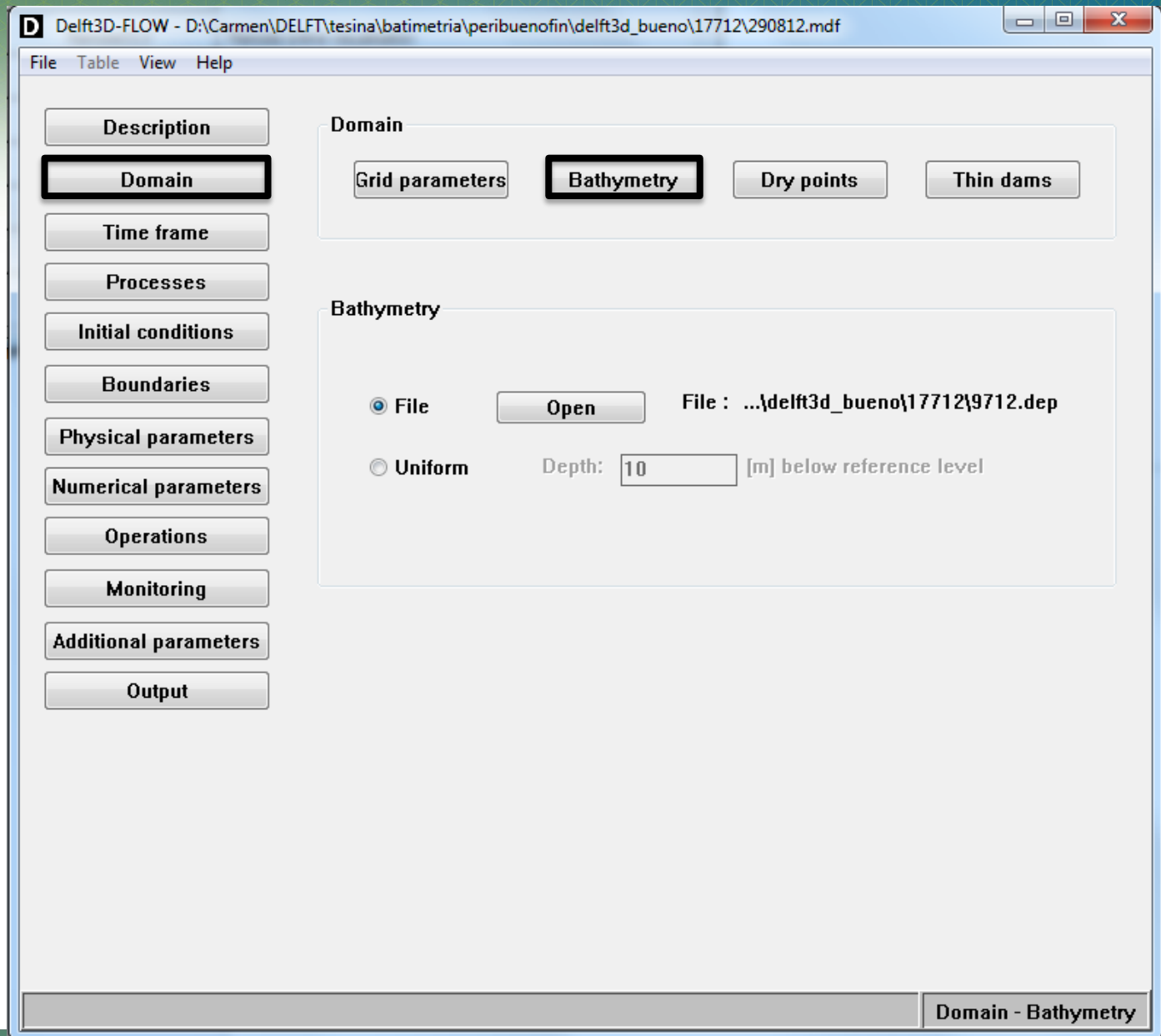
On the right side of the "Grid parameters" section, there is a "Layer thickness [%]" table with a scroll bar:

Layer	Thickness [%]
1	40
2	50
3	10

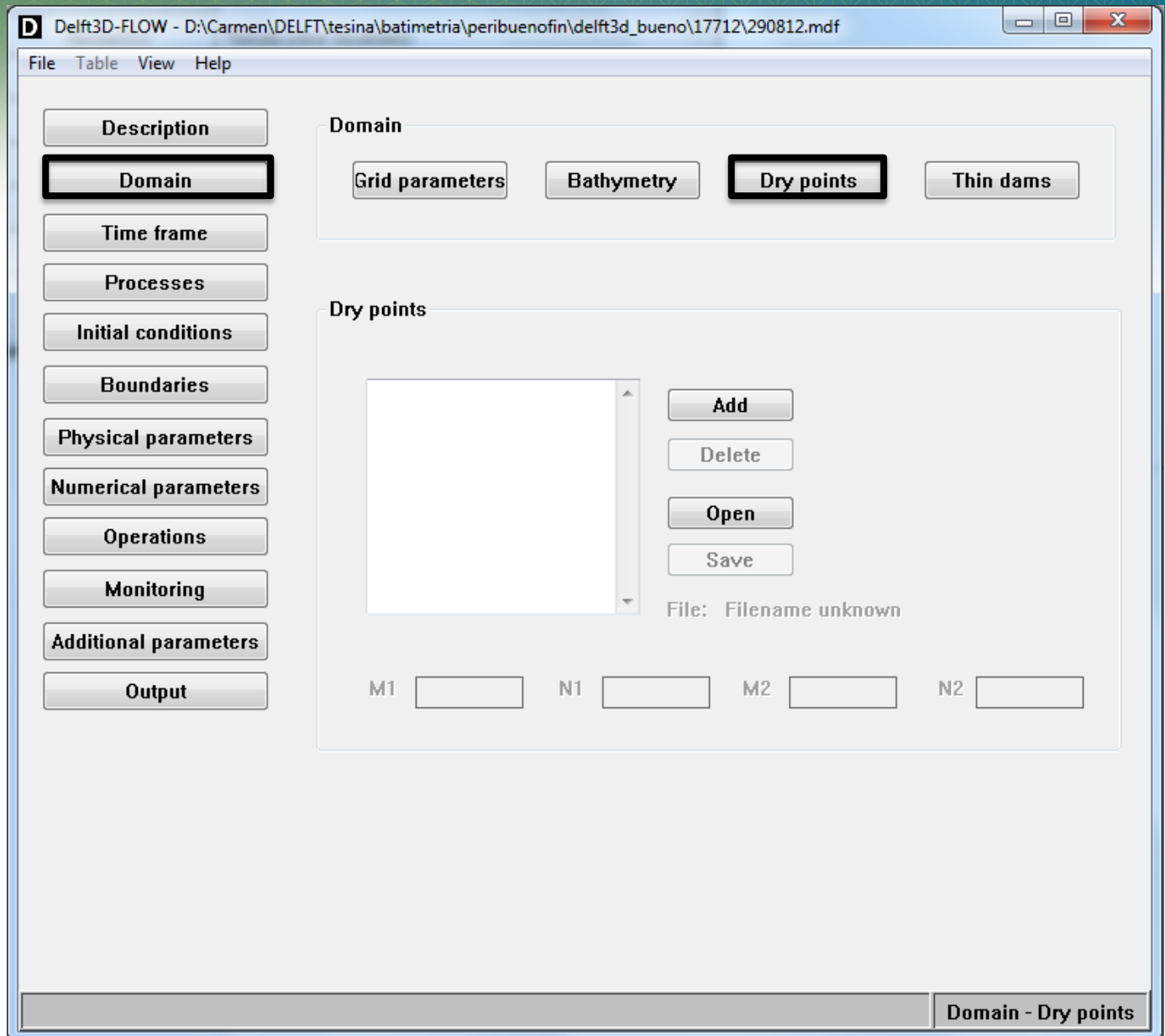
Total: 100 [%]

At the bottom right of the window, the text "Domain - Grid Paramers" is displayed.

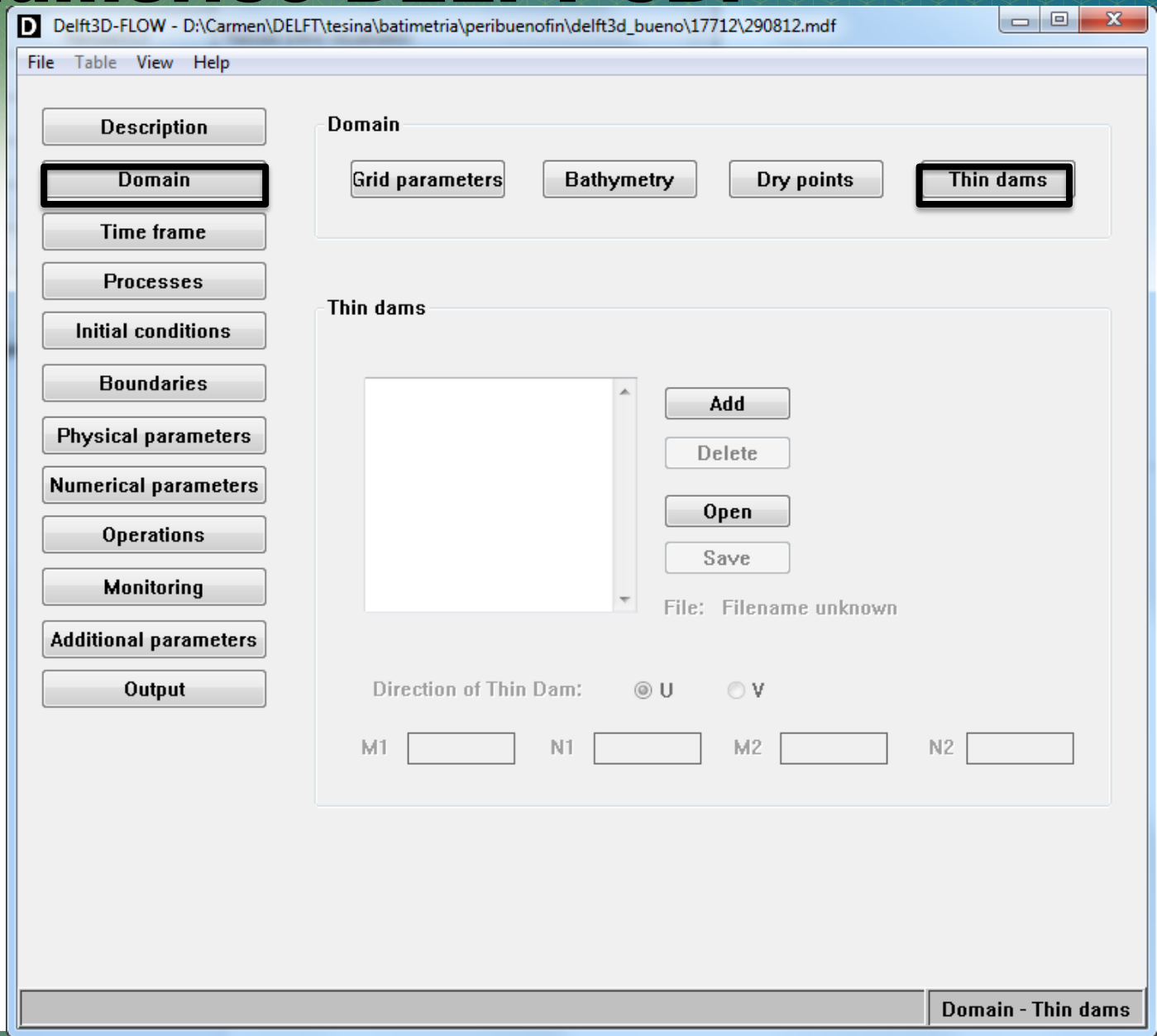
Modelo numérico DELFT 3D: FLOW



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Modelo numérico DELFT 3D: FLOW



Modelo numérico DELFT 3D: FLOW

D Delft3D-FLOW - D:\Carmen\DELFT\tesina\batimetria\peribuenofin\delft3d_bueno\17712\290812.mdf

File Table View Help

Description

Domain

Time frame

Processes

Initial conditions

Boundaries

Physical parameters

Numerical parameters

Operations

Monitoring

Additional parameters

Output

Time frame

Reference date [dd mm yyyy]

Simulation start time [dd mm yyyy hh mm ss]

Simulation stop time [dd mm yyyy hh mm ss]

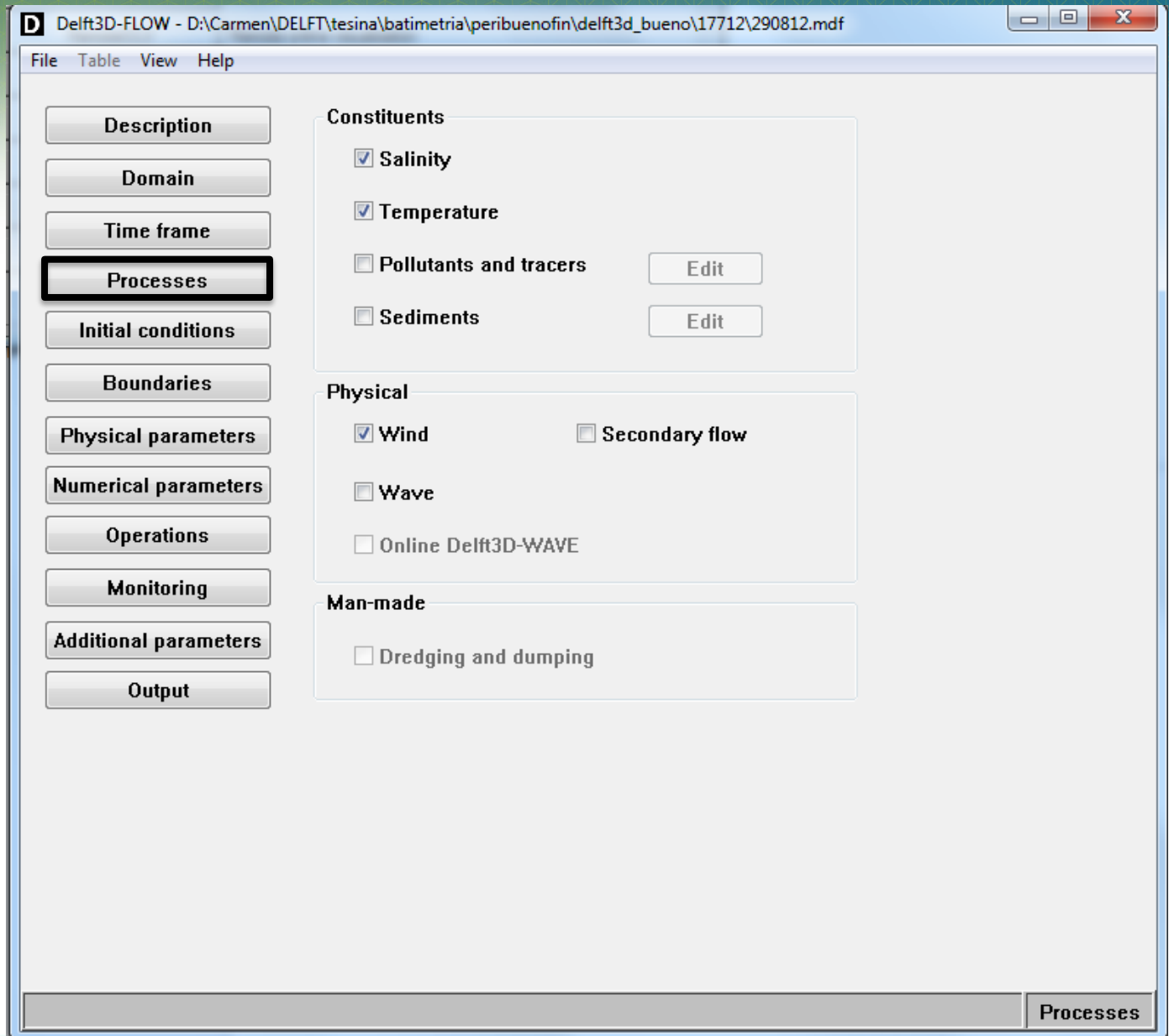
Time step [min]

Local time zone (LTZ) +GMT

GMT = Local time - LTZ

Time frame

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D Delft3D-FLOW - D:\Carmen\DELFT\tesina\batimetria\peribuenofin\delft3d_bueno\17712\290812.mdf

File Table View Help

Description

Domain

Time frame

Processes

Initial conditions

Boundaries

Physical parameters

Numerical parameters

Operations

Monitoring

Additional parameters

Output

Initial conditions

Uniform values

File :

Water level [m]

Salinity [ppt]

Temperature [°C]

Initial conditions

Modelo numérico DELFT 3D: FLOW

D Delft3D-FLOW - D:\Carmen\DELFT\tesina\batimetria\peribuenofin\delft3d_bueno\17712\290812.mdf

File Table View Help

Description

Domain

Time frame

Processes

Initial conditions

Boundaries

Physical parameters

Numerical parameters

Operations

Monitoring

Additional parameters

Output

Boundaries

Oeste

Add Open / Save

Delete

Section name

Oeste

M1	2	N1	1
M2	244	N2	1

Flow conditions

Type of open boundary (quantity) : Water level

Reflection parameter alpha: 0 [s²]

Forcing type: Astronomic

Vertical profile for hydrodynamics:

Edit flow conditions

Transport conditions

Thatcher-Harleman time lags:

Surface	0	[min]
Bottom	0	[min]

Edit transport conditions

Boundaries

Modelo numérico DELFT 3D: FLOW

D Delft3D-FLOW - D:\Carmen\DELFT\tesina\batimetria\peribuenofin\delft3d_bueno\17712\290812.mdf

File Table View Help

Description

Domain

Time frame

Processes

Initial conditions

Boundaries

Physical parameters

Numerical parameters

Operations

Monitoring

Additional parameters

Output

Boundaries

Oeste

Add Open / Save

Delete

Section name

Oeste

M1	2	N1	1
M2	244	N2	1

Flow conditions

Type of open boundary (quantity) : Water level

Reflection parameter alpha: 0 [s2]

Forcing type: Astronomic

Vertical profile for hydrodynamics:

Edit flow conditions

Transport conditions

Thatcher-Harleman time lags:

Surface	0	[min]
Bottom	0	[min]

Edit transport conditions

Boundaries

Modelo numérico DELFT 3D: FLOW

D Boundaries : Flow Conditions X

Table

Component sets

-Unnamed-

Selected set: -Unnamed-

Boundary: Oeste
Quantity: Water level
Forcing type: Astronomic
Vertical profile: n.a.

Selected component sets:
End A: -Unnamed-
End B: -Unnamed-

**Astronomical data for set -Unnamed-
Conditions**

Name	Amplitude [m]	Phase [deg]	Correction
M2	1.0246	57.63	<input type="checkbox"/>
S2	0.3702	83.907	<input type="checkbox"/>
SA	0.061373	229.87	<input type="checkbox"/>
Q1	0.022629	251.15	<input type="checkbox"/>
O1	0.067	302.79	<input type="checkbox"/>
P1	0.021226	35.55	<input type="checkbox"/>
K1	0.067093	42.66	<input type="checkbox"/>
2N2	0.034361	31.75	<input type="checkbox"/>

Corrections

Modelo numérico DELFT 3D: FLOW

Delft3D-FLOW - D:\Carmen\DELFT\tesina\batimetria\peribuenofin\delft3d_bueno\17712\290812.mdf

File Table View Help

Description

Domain

Time frame

Processes

Initial conditions

Boundaries

Physical parameters

Numerical parameters

Operations

Monitoring

Additional parameters

Output

Constants Roughness Viscosity Heat flux model Wind

Hydrodynamic constants

Gravity [m/s²]

Water density [kg/m³]

Air density [kg/m³]

Wind drag coefficients

Breakpoints	Coefficient	Wind speed
A	<input type="text" value="0.005"/> [-]	<input type="text" value="0"/> [m/s]
B	<input type="text" value="0.00723"/> [-]	<input type="text" value="100"/> [m/s]
C	<input type="text" value="0.00723"/> [-]	<input type="text" value="100"/> [m/s]

Physical parameters - Constants

Modelo numérico DELFT 3D: FLOW

D Delft3D-FLOW - D:\Carmen\DELFT\tesina\batimetria\peribuenofin\delft3d_bueno\17712\290812.mdf

File Table View Help

Constants **Roughness** Viscosity Heat flux model Wind

Physical parameters

Bottom roughness

Roughness formula: Chezy

Uniform U: 80 V: 60

File Select file

File: Filename unknown

Wall roughness

Slip condition: Free

Roughness length: 0 [m]

Physical parameters - Roughness

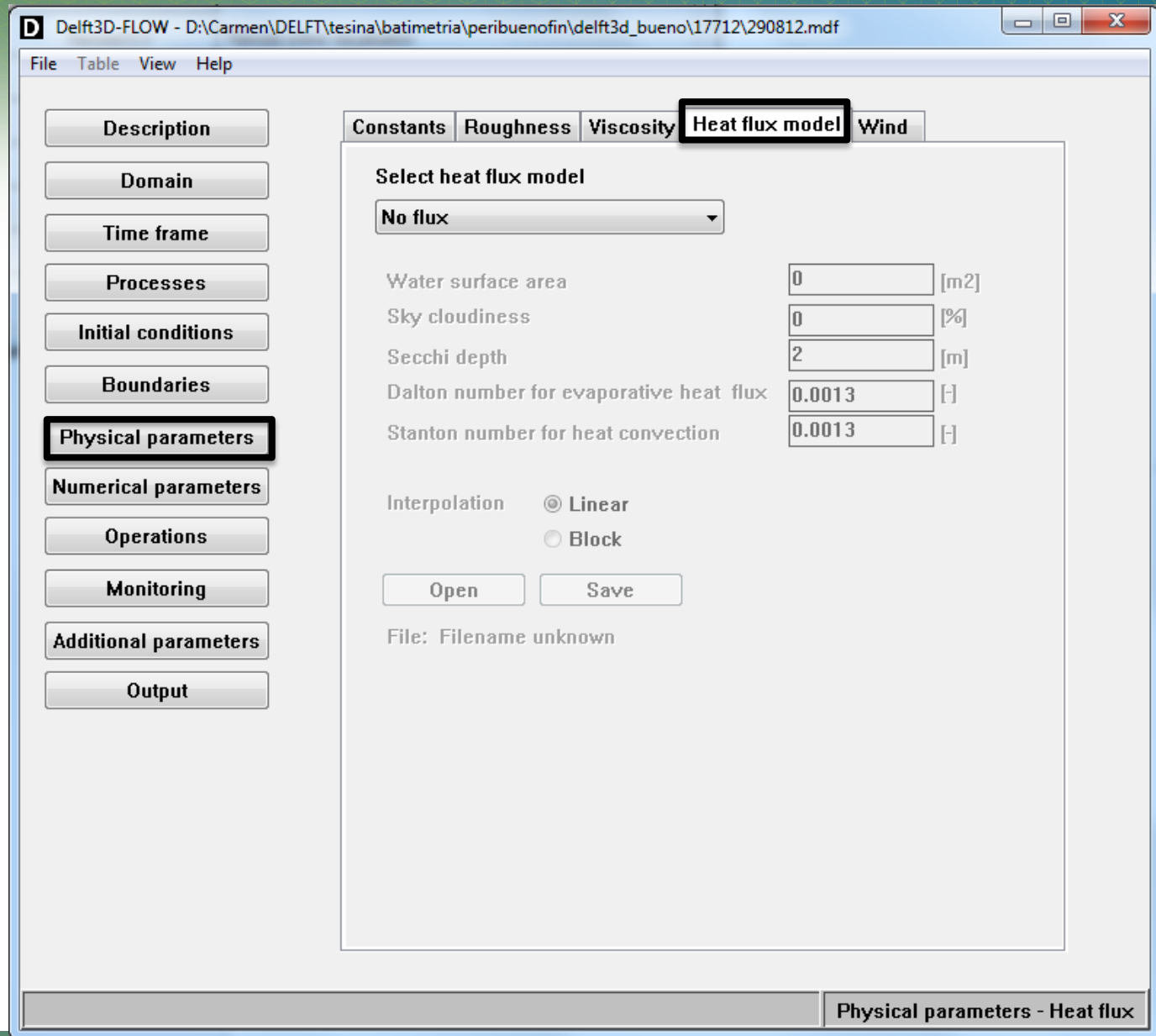
Modelo numérico DELFT 3D: FLOW

The screenshot shows the Delft3D-FLOW software interface. The window title is "Delft3D-FLOW - D:\Carmen\DELFT\tesina\batimetria\peribuenofin\delft3d_bueno\17712\290812.mdf". The menu bar includes "File", "Table", "View", and "Help". On the left, a vertical sidebar contains buttons for "Description", "Domain", "Time frame", "Processes", "Initial conditions", "Boundaries", "Physical parameters" (highlighted with a black box), "Numerical parameters", "Operations", "Monitoring", "Additional parameters", and "Output". The main window has a tabbed interface with "Constants", "Roughness", "Viscosity" (highlighted with a black box), "Heat flux model", and "Wind". The "Viscosity" tab is active and contains the following settings:

- Background horizontal viscosity/diffusivity**
 - Uniform
 - Horizontal eddy viscosity: 100 [m2/s]
 - Horizontal eddy diffusivity: 10 [m2/s]
 - File
 - Select file: [Select file]
 - File: Filename unknown
- Model for 2D turbulence**
 - Subgrid scale HLES [Edit]
- Background vertical viscosity/diffusivity**
 - Vertical eddy viscosity: 100 [m2/s]
 - Vertical eddy diffusivity: 10 [m2/s]
 - Ozmidov length scale: 0 [m]
- Model for 3D turbulence**
 - Constant
 - k-L
 - Algebraic
 - k-Epsilon

The status bar at the bottom right of the window reads "Physical parameters - Viscosity".

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Delft3D-FLOW - D:\Carmen\DELFT\tesina\batimetria\peribuenofin\delft3d_bueno\17712\290812.mdf

File Table View Help

Constants Roughness Viscosity Heat flux model **Wind**

Space varying wind and pressure
 Uniform

Open Save

File : ...\\batimetria\peribuenofin\delft3d_bueno\17712\viento1.wnd

Interpolation Type Linear
 Block

Time						Speed	Direction
dd	mm	yyyy	hh	mm	ss	[m/s]	[deg]
07	01	2012	15	00	00	4.9	34
07	01	2012	16	00	00	4.7	34
07	01	2012	17	00	00	4	42
07	01	2012	18	00	00	3.8	51

Physical parameters - Wind

Modelo numérico DELFT 3D: FLOW

D Delft3D-FLOW - D:\Carmen\DELFT\tesina\batimetria\peribuenofin\delft3d_bueno\17712\290812.mdf

File Table View Help

Description

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Physical parameters

Numerical parameters

Operations

Monitoring

Additional parameters

Output

Numerical parameters

Drying and flooding check at: Grid cell centres and faces
 Grid cell faces only

Depth specified at: Grid cell centres
 Grid cell corners

Depth at grid cell centres: Max

Depth at grid cell faces: Mean

Threshold depth: 0.1 [m]

Marginal depth: -999 [m]

Smoothing time: 90 [min]

Advection scheme for momentum: Cyclic

Threshold depth for critical flow limiter: [m]

Advection scheme for transport: Cyclic

Forester filter [horizontal]
 Forester filter [vertical]
 Correction for sigma-coordinates

Numerical parameters

Modelo numérico DELFT 3D: FLOW

D Delft3D-FLOW - D:\Carmen\DELFT\tesina\batimetria\peribuenofin\delft3d_bueno\17712\290812.mdf

File Table View Help

Description

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Additional parameters

Output

Discharges

Add Open

Delete

Edit data

Name:

Type:

Discharge location:

Interpolation : Linear Block

Outlet location:

Operations - Discharges

Modelo numérico DELFT 3D: FLOW

D Delft3D-FLOW - D:\Carmen\DELFT\tesina\batimetria\peribuenofin\delft3d_bueno\17712\290812.mdf

File Table View Help

Description

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Numerical parameters

Operations

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Additional parameters

Output

Monitoring

Observations

Drogues

Cross-sections

Observation points

Reviro
Obra
F
ZonaFrancaN2
PosteLuz

Add

Delete

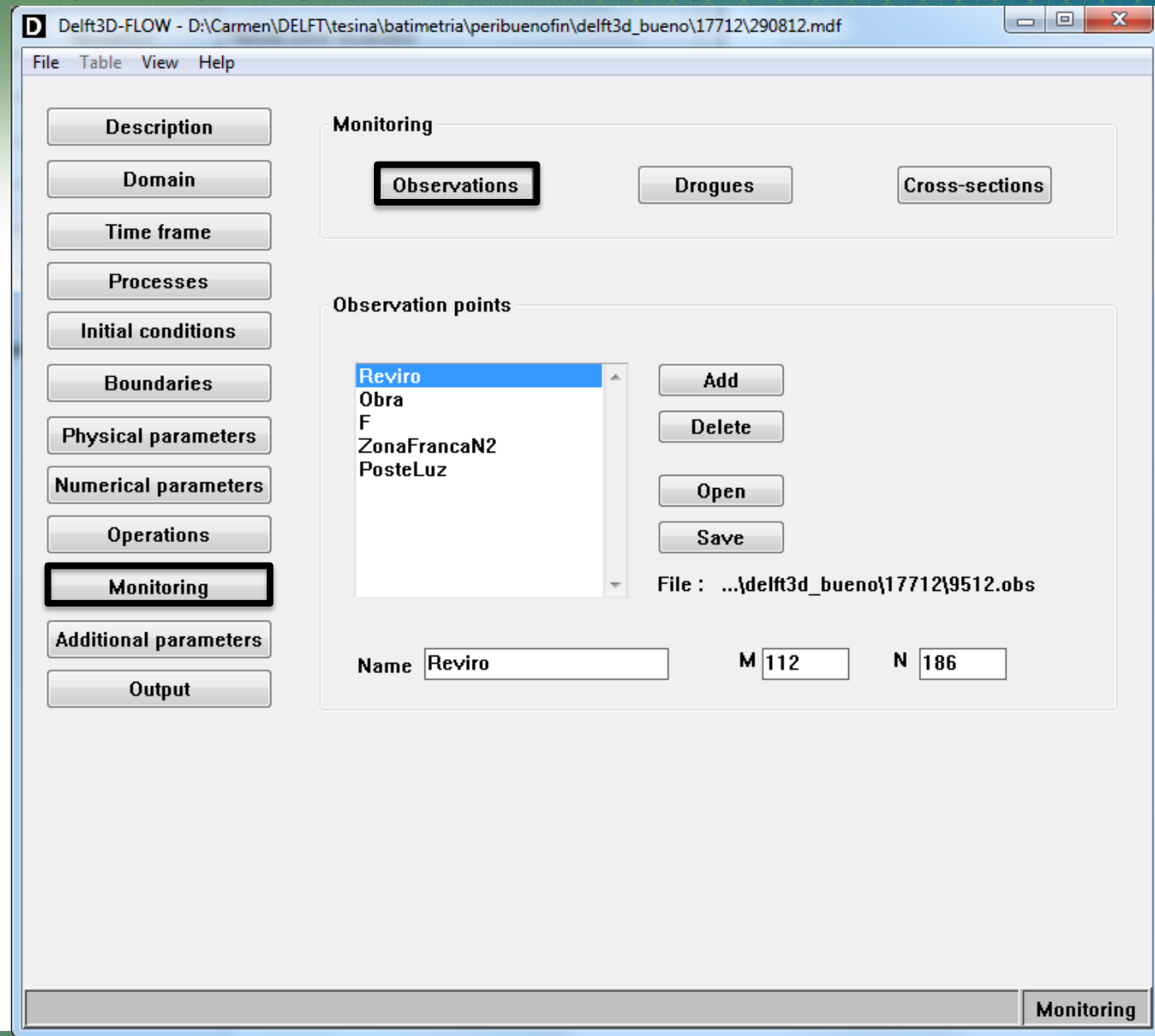
Open

Save

File : ...d\delft3d_bueno\17712\9512.obs

Name Reviro M 112 N 186

Monitoring



Modelo numérico DELFT 3D: FLOW

Delft3D-FLOW - D:\Carmen\DELFT\tesina\batimetria\peribuenofin\delft3d_bueno\17712\290812.mdf

File Table View Help

Description

Domain

Time frame

Processes

Initial conditions

Boundaries

Physical parameters

Numerical parameters

Operations

Monitoring

Additional parameters

Output

Monitoring

Observations

Drogues

Cross-sections

Drogues

Add

Delete

Open

Save

File : Filename unknown

Name M N

Release Time

Recovery Time

Monitoring - Drogues

Modelo numérico DELFT 3D: FLOW

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On the left side, there is a vertical menu with the following options: "Description", "Domain", "Time frame", "Processes", "Initial conditions", "Boundaries", "Physical parameters", "Numerical parameters", "Operations", "Monitoring" (highlighted with a black border), "Additional parameters", and "Output".

The main area is divided into two sections:

- Monitoring:** Contains three buttons: "Observations", "Drogues", and "Cross-sections" (highlighted with a black border).
- Cross-sections:** Contains a large empty rectangular area, a vertical scrollbar, and four buttons: "Add", "Delete", "Open", and "Save". Below these buttons, it says "File : Filename unknown".

At the bottom of the "Cross-sections" section, there are input fields for "Name" and four pairs of labels with input boxes: "M1", "N1", "M2", and "N2".

The status bar at the bottom right of the window displays "Monitoring - Cross-sections".

Modelo numérico DELFT 3D: FLOW

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Modelo numérico DELFT 3D: FLOW

Delft3D-FLOW - D:\Carmen\DELFT\tesina\batimetria\peribuenofin\delft3d_bueno\17712\290812.mdf

File Table View Help

Description
Domain
Time frame
Processes
Initial conditions
Boundaries
Physical parameters
Numerical parameters
Operations
Monitoring
Additional parameters
Output

Output

Storage Print Details

Output storage

Start time of simulation : 17 01 2012 15 00 00
Stop time of simulation : 30 01 2012 15 00 00
Time Step [min]: 1

Store map results		Store communication file :	
	dd mm yyyy hh mm ss		dd mm yyyy hh mm ss
Start time	17 01 2012 15 00 00	Start time	22 08 2012 00 00 00
Stop time	31 01 2012 15 00 00	Stop time	22 08 2012 00 00 00
Interval	15 [min]	Interval	0 [min]
History interval	15 [min]	Restart int.	1440 [min]

Fourier analysis Online visualisation
 Online coupling

Select file

File : Filename unknown

Output - Storage

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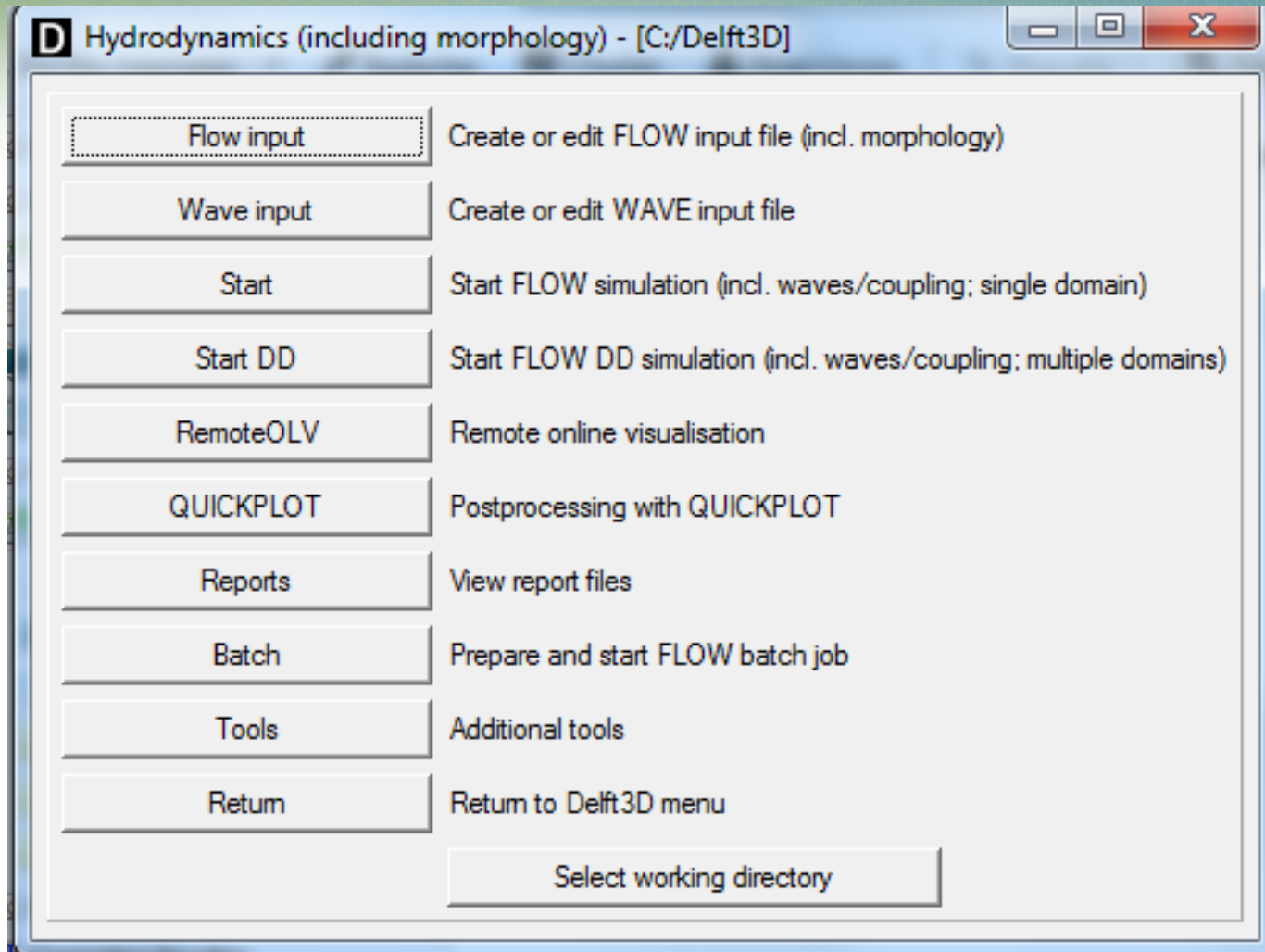
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Output computed quantities (map-file)	Print computed quantities (map-file)	Output computed quantities (history-file)	Print computed quantities (history-file)
<input checked="" type="checkbox"/> Hydrodynamic quantities	<input checked="" type="checkbox"/> Hydrodynamic quantities	<input checked="" type="checkbox"/> Hydrodynamic quantities	<input checked="" type="checkbox"/> Hydrodynamic quantities
<input checked="" type="checkbox"/> Constituents/turbulence quantities	<input checked="" type="checkbox"/> Constituents/turbulence quantities	<input checked="" type="checkbox"/> Constituents/turbulence quantities	<input checked="" type="checkbox"/> Constituents/turbulence quantities
<input checked="" type="checkbox"/> Derived quantities	<input checked="" type="checkbox"/> Derived quantities	<input checked="" type="checkbox"/> Derived quantities	<input checked="" type="checkbox"/> Derived quantities
		<input checked="" type="checkbox"/> Fluxes across cross-sections	<input checked="" type="checkbox"/> Fluxes across cross-sections

At the bottom right of the window, there is a status bar that reads "Output - Details".

Modelo numérico DELFT 3D: FLOW



Modelo numérico DELFT 3D: FLOW

