Delwaq Introduction Webinar

January 2020

Information & Agenda

Agenda

11:00-12:00   *Recap on hydrodynamic modelling*

- General overview

- Delft3D FLOW model setup (grid, boundary conditions, outputs, etc)

12:00-14:30   *Delwaq - Theory*

- Basic concepts in water quality modelling
- Selection of substances/parameters and processes (e.g. Oxygen, Nutrients (cycles of N, P and Si), Algae modelling)
- Introduction to the Graphical User Interface. Short description of Delwaq components and tools implemented in the user interface.
- File formats and file structure
- Questions and Answers (30 mins)

14:45-17:15   *Delwaq - Practical Exercises*

- Setting up a sample model (coupling to hydrodynamics, grid aggregation)
- Working with the Processes Library Configuration Tool
- Simulation and handling of error messages
- Interpreting and using the output files (QUICKPLOT / Matlab)
- Questions and Answers (30 mins)

Keywords:
Delwaq, Environmental, Water Quality

Delft3D Software

1. Deltares provides pre-compiled executables of the software for this workshop. Participants should download the Delft3D program and the course materials onto their laptop PC. Both of these can be found at the following ftp server in the **"Delwaq_webinar"** folder:

   > Host   = ftp.deltares.nl
   > Username = odyssea
   > Password = yaat225

   Here the folders delft3d-course, delft3d-install, and delft3d-lic can be seen. Participants should copy these folders to somewhere on their laptop PC, such as C:\Deltares\, or ..\My Documents\Deltares\.

   If there is uncertainty about how to connect to an FTP server, please see 'Additional Programs' at the end of this document to download a dedicated FTP client, or see 'Windows 10: Create FTP connection' to connect without a dedicated client.

   After copying these 2 folders (without changing the name of any of the folders or moving their relative location!) the next step is to install Delft3D. In the folder ..\delft3d-install\delft3d4\, please run Install-Shield.exe and install every item in the order it is listed (the order is important!). When selecting "Install License Manager", the program will prompt for a license file. Please point it to the *.lic file in the delf3d-lic folder on the local PC. **This license file is for the ODYSSEA project**.

2. Once the software is installed, confirm it works by completing the following steps:
   a. Opening Delft3D
   b. Select 'working directory', and specify the path c:\Users\[USERNAME]\Documents\Deltares\Delft3D 4.02.01\tutorial\flow\friesian_tidal_inlet\all_input\ (but change the user name to the appropriate one). If these files are not present, check where the Delft3D tutorial was installed in the previous step.
   c. In Delft3D GUI, select 'Flow', then 'Start'.
   d. Browse and select the file "tut_fti.mdf" and select ok
   e. The simulation should now start.

Preparation

This workshop will cover the fundamentals of the Water Quality module of the Delft3D suite. A background in environmental science, earth science, physical geography, civil engineering, or environmental engineering will be of great benefit to course participants. Knowledge of or exposure to numerics, oceanography, hydraulics, and water chemistry are advantageous. Topics and programs covered formally in the course will not require the use of advanced computer knowledge and participants need only to provide their own computer with specifications that match or exceed those in the following table:

	Minimal	Preferred
Processor	1,5 GHz	3 GHz
Memory	2 GB	4 GB
Disk free	10 GB	100 GB

In general, intermediate computer knowledge is highly beneficial in numerical modelling (i.e. scripting), particularly for the more advanced features of the programs. Scripting in MATLAB and Python opens up many opportunities for more advanced modelling options. Those participants with a MATLAB license on their computers are recommended to go to the openearthtools repository and obtain open source software tools via TortiseSVN. This is completely optional and not part of the formal workshop.

It is recommended that participants spend some time looking through these to obtain an idea of what the software is about and what its intended use is. To become orientated with the Delft3D suite, we refer to the following materials:

1. Animations of Delft3D applications
2. Webinars given about specific applications of the Delft3D suite. One useful one may be 'Water Quality modelling with DELWAQ: Principles and notable applications' by Jos van Gils.
3. The Delft3D FLOW and Delft3D WAQ manuals.

Bring own data

1. Participants are free and encouraged to bring data to try working with in the modelling suite. This is completely optional and Deltares will provide data for educational purposes.

Additional programs

1. FileZilla (FTP client)
   This program allows the transfer of files from a File Transfer Protocol Server (FTP) to a PC. Once it is downloaded, enter the Deltares FTP credentials from point #2, and copy the contents of the FTP to the PC.
2. Notepad++ (Text editor)
   This program is very useful for editing the modelling files. It has more features than the default Windows notepad and is much more powerful.
3. TortiseSVN (subversion client)
   This program is used for synchronizing and managing code repositories/versions between the Deltares sever and a PC. Instructions on how to use it are available via the link in point #1.

Access information to Deltares FTP

Ftp address = ftp://ftp.deltares.nl/
Ftp account = odyssea
Password   = yaat225
Expires   = 2020-11-30
Capacity   = 10 Gb

The URL representation of the account (copy to browser):
 ftp://odyssea:yaat225@ftp.deltares.nl

Disclaimer: *The account is to be used for official communication with Deltares only. Please be aware of the fact that everyone who has the password has full privileges and can alter and/or delete all files in the account.*

Windows 10: Create FTP connection

You can use Microsoft® Windows 10 to connect to your hosting account and upload files via File Transfer Protocol (FTP).

Steps:
1. Open the **File Explore**r.
2. Go to the **Computer** tab and select **Map network drive**.
3. Click **Connect to a Web site that you can use to store your documents and pictures**.
4. Select **Choose a custom network location**, and then click **Next**.
5. In the **Internet or network address** field, enter your hosting account's FTP address. For example, **ftp://**_your domain name/_.
6. Click **Next**.
7. In the **User name** field, enter your hosting account's user name, and then click **Next**.

Your FTP connection to your hosting account displays in the **Network Location** section

More information: