

COURSE: GROUNDWATER MODELLING USING MODFLOW

SESSION 1: Introduction to MODFLOW and Model Muse

Objective:

The objective of this session is learning to install MODFLOW software and describe the main window of ModelMuse.

Download and installation of MODFLOW

ModelMuse is a graphical user interface (GUI) for MODFLOW-2005, MODFLOW-LGR, MODFLOW-NWT, MODFLOW-UFZ, MT3DMS, PHAST, MODPATH, and ZONEBUDGET.

Link to install software:

<https://water.usgs.gov/nrp/gwsoftware/ModelMuse/ModelMuse.html>

In this case, to install Model Muse for Windows, the file **ModelMuseSetup64_4_2** will be installed. This software has been approved for release by the U.S. Geological Survey (USGS).

usgs.gov/software/modelmuse-a-graphical-user-interface-groundwater-models



ModelMuse: A Graphical User Interface for Groundwater Models

Release Date: FEBRUARY 25, 2020

Overview of ModelMuse

ModelMuse is a graphical user interface (GUI) for the U.S. Geological Survey (USGS) models MODFLOW 6, MODFLOW-2005, MODFLOW-LGR, MODFLOW-LGR2, MODFLOW-NWT, MODFLOW-CFP, MODFLOW-OWHM, MODPATH, ZONEBUDGET, PHAST, SUTRA 2.2, SUTRA 3.0, MT3D-USGS, and WellFootprint and the non-USGS model MT3DMS. This software package provides a GUI for creating the flow and transport input file for PHAST and the input files for the other models. In ModelMuse, the spatial data for the model are independent of the grid, and the temporal data are independent of the stress periods. Being able to input these data independently allows the user to redefine the spatial and temporal discretization at will.

Download Current Version of ModelMuse

The current release is ModelMuse v.4.2.0.0.

ModelMuse for Microsoft Windows Operating Systems

Users are encouraged to read the documents that are provided in the 'doc' directory of this software distribution, including the 'Release.chm' file. The recommended method of installing ModelMuse is with the installer. However, if there is difficulty in using the installer, ModelMuse can be installed by unzipping the zip file. The installer associates the extensions .gpt, .gpb and .mmZLib with ModelMuse. If the zip file is used instead of the installer, the user may wish to make those associations manually.

- [Summary of ModelMuse](#)
- [ModelMuse Release History](#)
- [Installation Instructions](#)
- [For 64-bit operating systems: Installer \(.zip archive\)](#)
- [For 32- and 64-bit operating systems: Installer \(.zip archive\)](#)
- [Source code for ModelMuse](#)
- [ModelMuse Videos](#)

Contacts

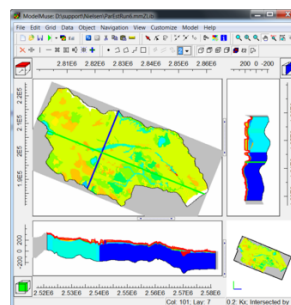
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Screenshot from ModelMuse showing example model parameters.

ModelMuse is distributed as either an installer or a zip file. Either version may be used for installing ModelMuse. Both contain the same version of ModelMuse for use on personal computers:

For 32 or 64-bit operating systems:

ModelMuseSetup32_4_2.exe

ModelMuse32_4_2.zip

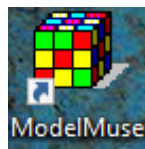
For 64-bit operating systems:

ModelMuseSetup64_4_2.exe

ModelMuse64_4_2.zip

In this case, select **Installer "For 64-bit operating systems"**. When the installer finish to download, you can follow this instruction:

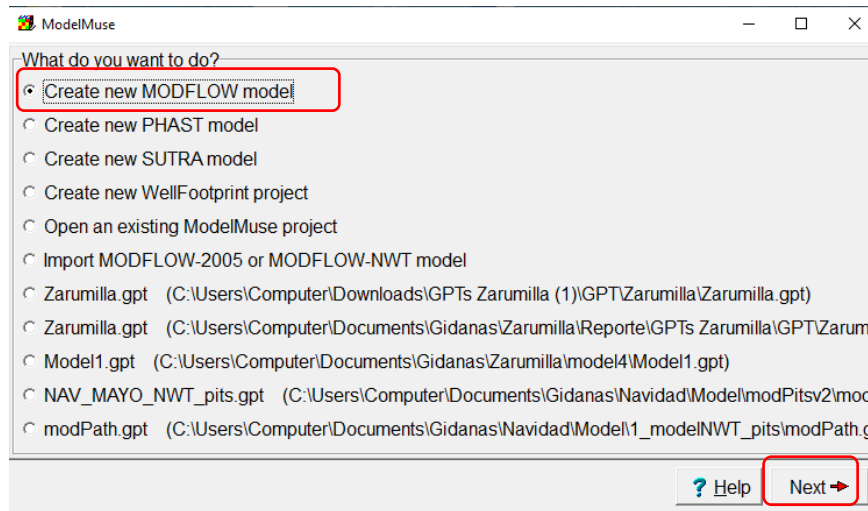
- Go to **GroundwaterModellingMODFLOW\Installers**
- Select **ModelMuseSetup64_4_2**
- Click in **Run**
- Activate **Create a desktop shortcut** and click in **Next**
- Then click **Install**. After the finished click in **Next**.
- Now click in **ModelMuse** on the desktop short cut.



Presentation of MODFLOW environment

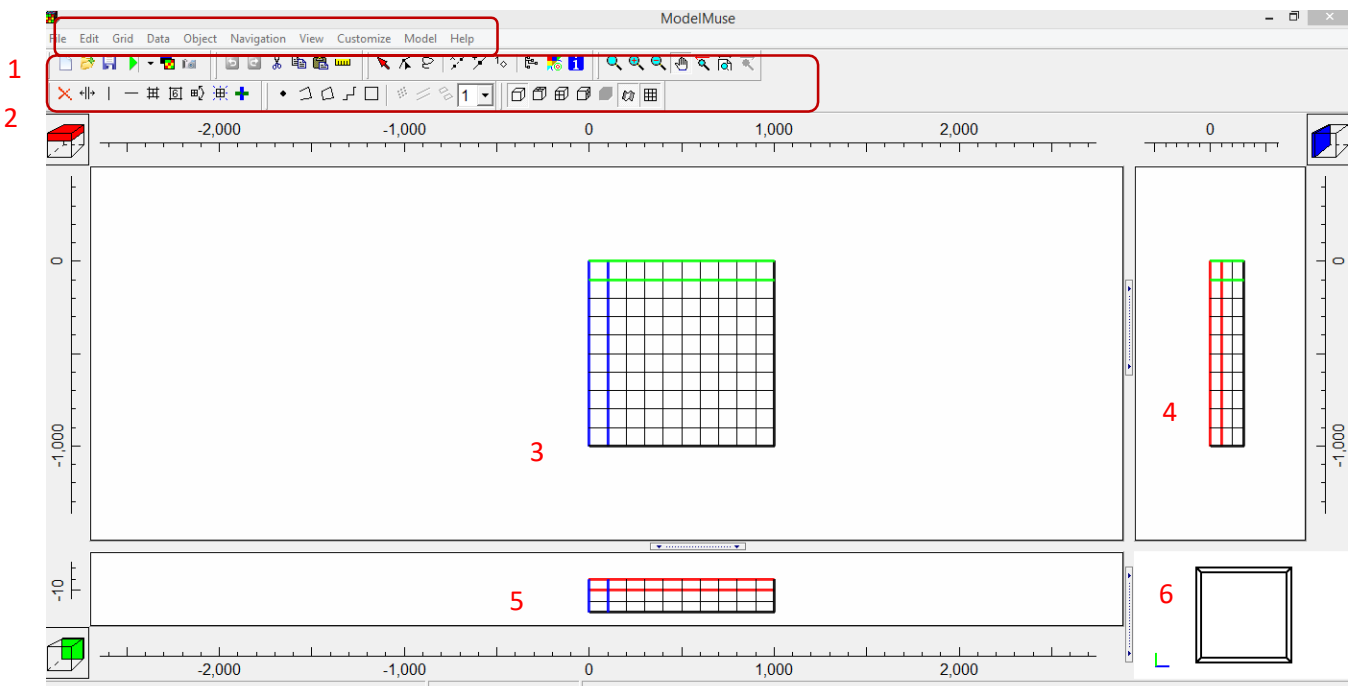
Once the user has already installed MODFLOW, a general view of the main MODFLOW window will be done.

When MODFLOW starts, the next window will appear. Here, a new project can be created or an already existing one can be opened. Click on **Create MODFLOW model**, then click on **Next**.

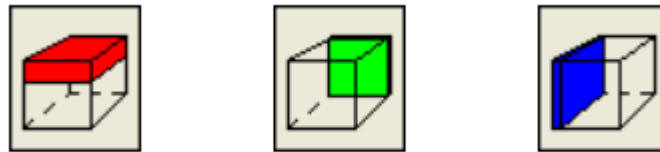


Then, MODFLOW will present the graphical user interface, as shown below:

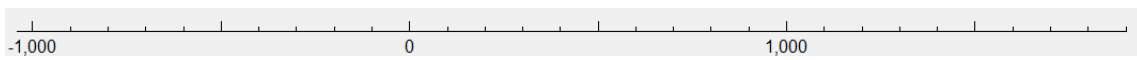
1. Menu toolbar
2. Tools toolbar
3. View from the top
4. View from the right side
5. View from the front
6. 3D view







Also the user can see the icon **"Selection Cube"** that show the selected column, row, or layer. It can also be used to change the selected column, row or layer.



To working models is common to use the Ruler that show the position of the model.



To navigate in the working area, exist different button as The Zoom , Zoom In , Zoom Out  and Pan .

Modflow Program Location

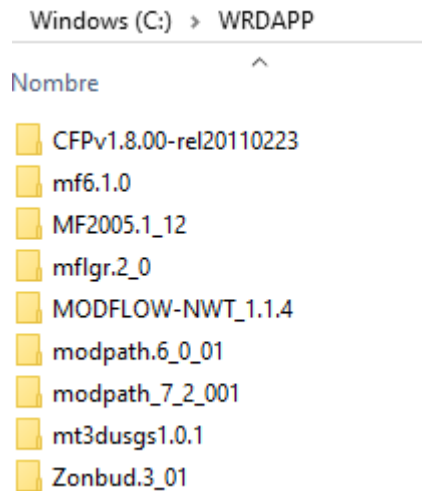
This tool specifies the location where several programs related to MODFLOW. In this exercise, open **Model1.gpt** located in the folder:

Course_GroundwaterModellingMODFLOW\Week_1\Practice\Models

Copy the folder **WRDAPP** located in:

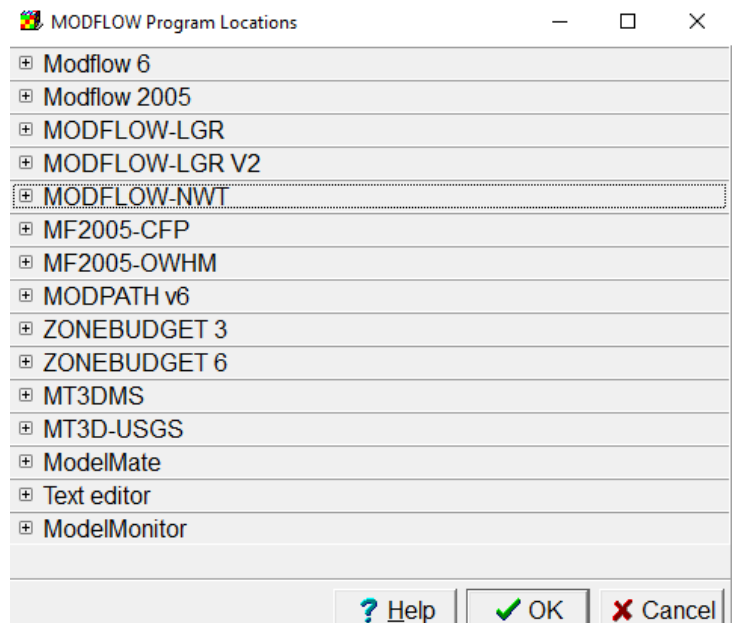
Course_GroundwaterModellingMODFLOW\Installers\WRDAPP

Then paste inside the local disk "C:" You get a list of folders similar like the following image:



The next step is select **Model/MODFLOW Program Location**. The data in the MODFLOW Program Locations dialog box is stored in **C:\Users\\AppData\Roaming\WRDAPP**. The program will be described below:

- MODFLOW 6
- MODFLOW-2005
- MODFLOW-LGR
- MODFLOW-NWT
- MODFLOW-CFP
- MT3D-USGS
- MT3DMS
- MODPATH
- PHAST
- ZONEBUDGET
- ModelMate



For include each program define the program location as the image:



Once the paths are located, click on "OK".