

Help to install meshio, gmsh and modify function call_gmsh

1/ GMSH

GMSH is a free software to mesh 2D and 3D geometries: <http://gmsh.info/> It can be used with a graphical interface or in command line. It reads files .geo (e.g. wing.geo) and creates files .msh. You can download it from the link above, and then use the standalone executable file (“gmsh.exe” for Windows or just “gmsh” for linux) without further installation. Note the directory where this executable file is located for the next step.

2/ Modify call_gmsh() function in “input.py” in WomBat:

To call gmsh inside python, wombat contains a dedicated function **call_gmsh()** in the file *input.py*. To complete this function, you have to indicate where gmsh is located in your computer:

- Add the condition to identify your platform.
- Add the command to call gmsh from its location with the good arguments.

Examples:

```
if platform == "darwin": #Mac Os X operating system
    command = '/YourGmshDirectory/gmsh -order '+str(order)+' '+geofile+' -2'
elif platform == "win32": #Windows 10 OS
    command = 'C:\\YourGmshDirectory\\gmsh.exe -order '+str(order)+' '+geofile+' -2'
else: #Linux OS
    command = '/YourGmshDirectory/gmsh -order '+str(order)+' '+geofile+' -2'
```

3/ Meshio

meshio is a Python library that loads and manipulates meshes : <https://pypi.org/project/meshio/> It will be used to read the files created by gmsh, e.g. wing.msh.

It is not natively installed in the anaconda distribution. To install it (after you installed anaconda):

- 1 – Open Spyder in anaconda navigator.
- 2 – In the Ipython console, use the command: **pip install meshio[all]**
- 3 – The console should confirm that the installation was succesful.
- 4 – Restart the kernel (right-click on console and “restart the kernel”) or close and open Spyder again to be able to use the library.
- 5 – If it did not work, below is an alternative procedure for windows users, else call for help.

Alternative installation of meshio on windows:

Download Anaconda (<https://www.anaconda.com/download/>), install and remember the chosen installation directory.

WomBat calls a script named 'meshio' to operate on meshes. It must be added to Anaconda's library, to do so, a script named pip, included in Anaconda, is used.

- Identify where pip is located, it should be in the Anaconda installation directory :

~\Anaconda\Scripts\pip.exe

- Open a Command Prompt :

Shortcut 'Win + R', type 'cmd', press Enter.

- Go to pip.exe directory :

cd (where you installed Anaconda)\Anaconda\Scripts\

- Now cmd should be in the right directory,

pip.exe can be used to install meshio package.

The command to type in is :

pip install meshio