

**WEC-Sim Training Course**  
**June 18<sup>th</sup>, 2022**  
**13:00 – 17:00**

WEC-Sim training course participants should have the software installed and running in their laptop prior to attending the course. Installation instructions are provided below, but more information can be found in the [Getting Started](#) section of the WEC-Sim website.

**Install MATLAB and Simulink toolboxes:**

WEC-Sim requires MATLAB, Simulink, Simscape and Simscape Multibody toolboxes with the minimum version number shown in the image below. If these packages are not already installed on your laptop, you can get a 30-day free trial license from the [MathWorks website](#).

Required Toolbox	Oldest Compatible Version
MATLAB	Version 9.9 (R2020b)
Simulink	Version 10.2 (R2020b)
Simscape	Version 5.0 (R2020b)
Simscape Multibody	Version 7.2 (R2020b)

- You must have a MathWorks account to install a free trial license. A MathWorks account can be created on the [MathWorks website](#). The email account cannot be associated to a pre-existing MathWorks account. MathWorks will send you an email to confirm the account.
- Once the account has been created, go to the [MathWorks website](#) and fill in the required information.
- Download the installer and follow the instructions. The download process can take a while depending on your internet connection.
- When asked for the products to be installed, check all of the required toolboxes: MATLAB, Simulink, Simscape, and Simscape Multibody.
- The installation will ask you to log in using your MathWorks credentials (the ones used when you created your account and requested the “Free 30-Day Trial”). Follow the prompts until all MATLAB toolboxes are installed and ready for use.
- Verify that the MATLAB required toolboxes are installed by typing `ver` in the MATLAB Command Window (refer to the image below).

```
>> ver

-----
MATLAB Version: 9.9.0.1592791 (R2020b)
-----

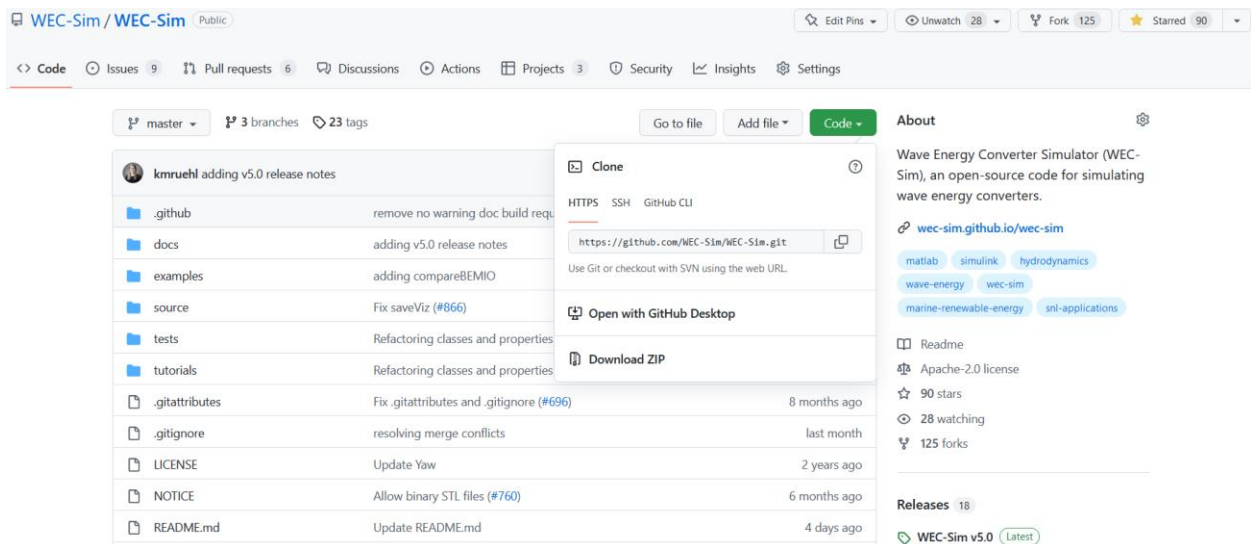
MATLAB                Version 9.9      (R2020b)
Simulink              Version 10.2    (R2020b)
Simscape              Version 5.0     (R2020b)
Simscape Multibody    Version 7.2     (R2020b)
```

Notes:

- The oldest compatible version of MATLAB is R2020b.

**Download WEC-Sim Source Code:**

- Go to the [WEC-Sim GitHub Repository](#) website, select the green *Code* button, then select *Download ZIP* (see image below).
- Extract the ZIP file contents in a directory of your choosing and note the path to the WEC-Sim source files.



**Install WEC-Sim in MATLAB:**

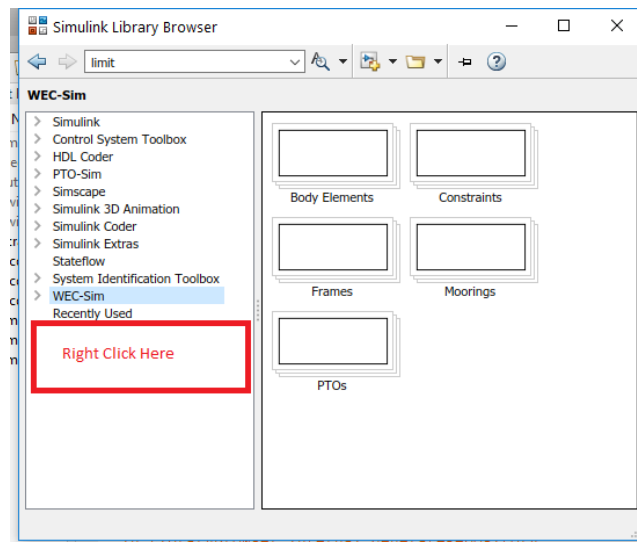
- Once the download process is complete, you will have a folder named WEC-Sim-master on your laptop (e.g. 'C:\Users\USERNAME\Downloads\WEC-Sim-master'). 'WEC-Sim-master\source' is your WEC-Sim source directory, which contains the functions, objects, etc. necessary for running WEC-Sim.
- Execute the `addWecSimSource.m` file in MATLAB to add the WEC-Sim source directory to your MATLAB path.
- Verify that the `WEC-Sim-master\source` directory is in the path, by typing `path` in the Command Window. The WEC-Sim source directory should be listed in the MATLAB search path.

```
Command Window
>> path

MATLABPATH

C:\Users\ntom\Documents\GitHub\WEC-Sim-New\WEC-Sim\source
C:\Users\ntom\Documents\GitHub\WEC-Sim-New\WEC-Sim\source\functions
C:\Users\ntom\Documents\GitHub\WEC-Sim-New\WEC-Sim\source\functions\BEMIO
C:\Users\ntom\Documents\GitHub\WEC-Sim-New\WEC-Sim\source\functions\import_stl_fast
C:\Users\ntom\Documents\GitHub\WEC-Sim-New\WEC-Sim\source\functions\moorDyn
C:\Users\ntom\Documents\GitHub\WEC-Sim-New\WEC-Sim\source\functions\paraview_macros
C:\Users\ntom\Documents\GitHub\WEC-Sim-New\WEC-Sim\source\functions\writeH5
C:\Users\ntom\Documents\GitHub\WEC-Sim-New\WEC-Sim\source\lib
C:\Users\ntom\Documents\GitHub\WEC-Sim-New\WEC-Sim\source\lib\PTO-Sim
C:\Users\ntom\Documents\GitHub\WEC-Sim-New\WEC-Sim\source\lib\WEC-Sim
C:\Users\ntom\Documents\GitHub\WEC-Sim-New\WEC-Sim\source\objects
```

- Add the WEC-Sim Library to Simulink by opening the Simulink Library Browser by typing `slibLibraryBrowser` into MATLAB command window.
- Once the Library Browser opens, right-click on the Libraries pane (left pane, where the libraries are listed), and select Refresh Library Browser. The WEC-Sim library should appear below the other libraries of the list.



### Test WEC-Sim Installation:

- Type the following lines in the MATLAB Command Window from the WEC-Sim directory

```
>> cd examples/RM3/hydroData
>> bemio
>> cd ..
>> wecSim
```

This should run a WEC-Sim example case in Simulink, which should: print to the command line, open a Mechanics Explorer window in MATLAB, and produce figures of the simulation result. The simulation may take a couple of minutes to finish.