

OpenFAST with python

Build openfast_library.dll

We need to build the DLL from source with cmake, because it doesn't come with the binary distributions, nor with the vs-build solutions.

Preconditions

1. Download [Intel oneAPI with fortran](#)
2. Download [VisualStudio](#)
3. Download [CMake](#)
4. Download [Git](#)

Build process

1. Clone openfast repository

```
git clone https://github.com/OpenFAST/openfast
```

2. Edit openfast\modules\servodyn\CMakeLists.txt, and add the following lines at the top of the file:

```
add_definitions(-DCOMPILE_SIMULINK)
```

Rationale: Servodyn is the module that controls the turbine. It only allows you to use external inputs if it is compiled for simulink or labview. But we want to control it from python, so we need to trick it with this flag.

3. Run cmake

```
mkdir build
cd build
cmake ..
```

Note: In my command line oneAPI is not configured by default, so previous command fails and I need to run:

```
cmd.exe "/K" '"C:\Program Files (x86)\Intel\oneAPI\setvars.bat" && powershell'
```

```
cmake..
```

4. Open in VisualStudio OpenFAST.sln created from previous step, and do ALL_BUILD.
5. The desired file is ***openfast\build\modules\openfast-library\Debug\openfastlib.dll***