Corresponding to the paper entitled “In-Stream Hydrokinetic Turbine Fault Detection and Fault Tolerant Control - A Benchmark Model” submitted to ACC 2019.

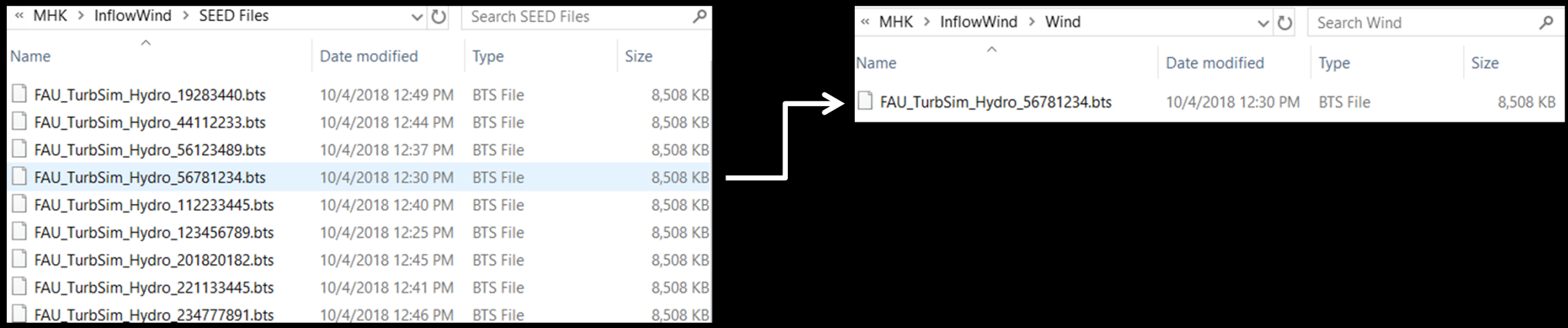
FAU MHK Simulation Setup Instruction

Setup

1. For initial download and compiling instructions please refer to https://nwtc.nrel.gov/FAST8
2. Replace the AeroDyn, ElastoDyn, InflowWind, and ServoDyn input files with the ones provided to represent FAU's MHK (Marine Hydrokinetic Turbine) operating conditions

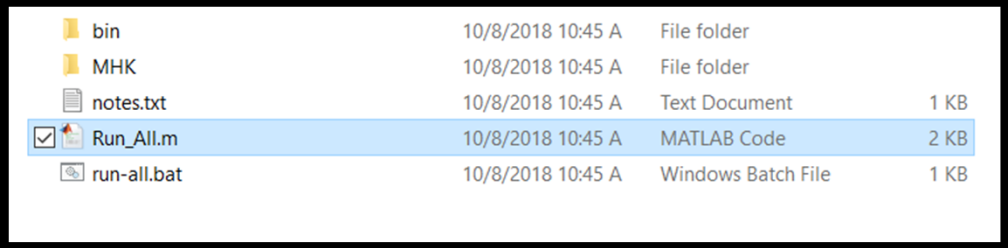
Setup

3. Go to MHK folder -> InflowWind -> SEED Files
4. Copy one of the seed files to InflowWind -> Wind

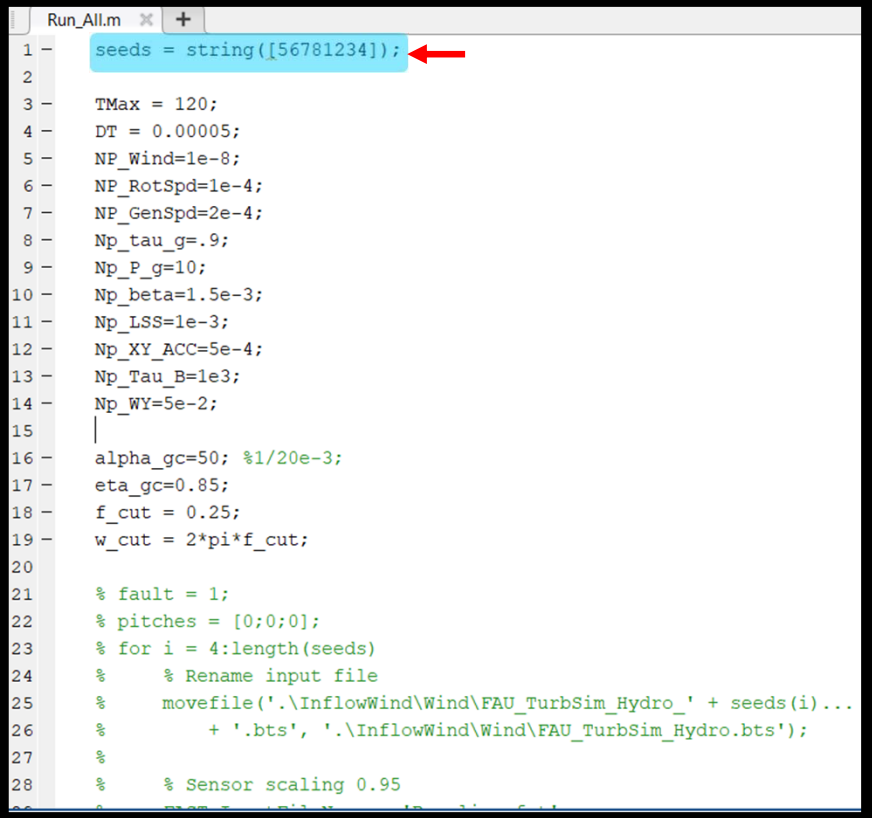


Setup

5. Use MATLAB to open Run_All.m

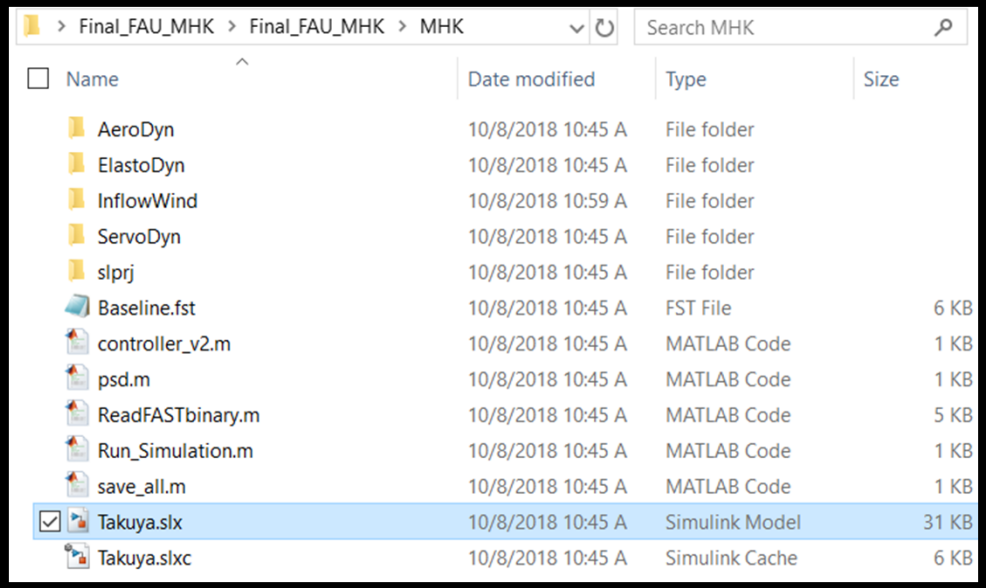


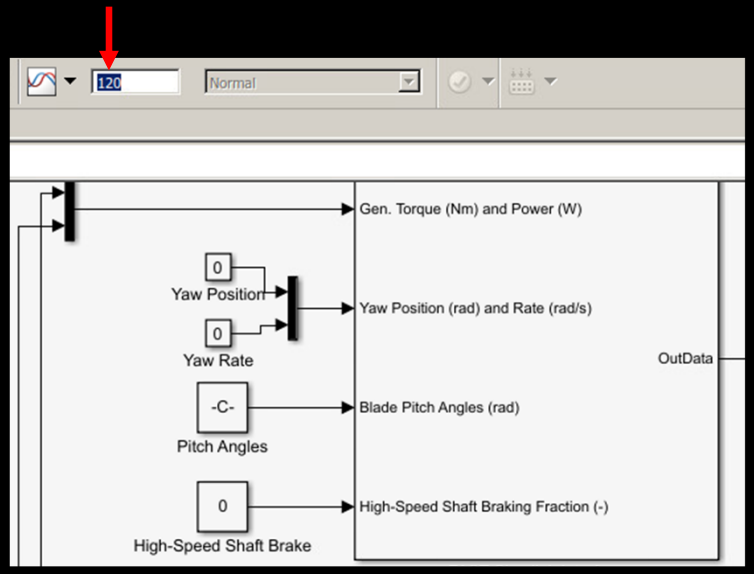
6. Change the seed value to match the file in the “Wind” folder



Setup

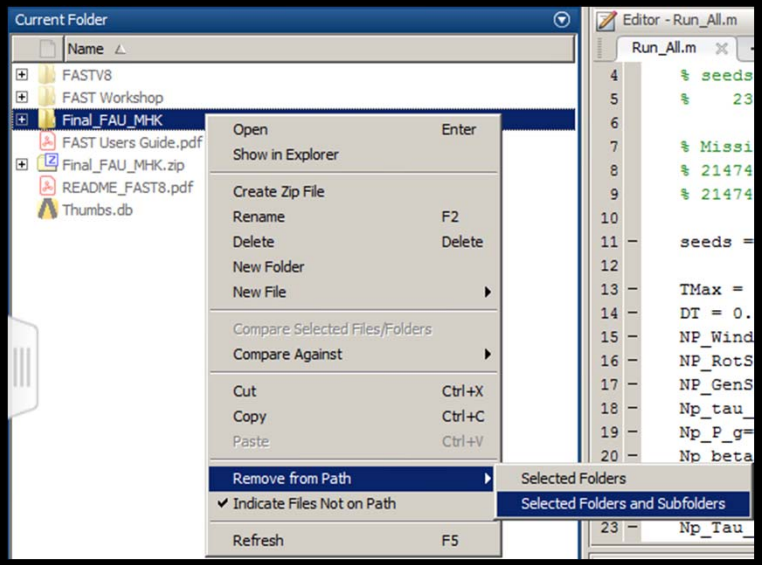
7. Open the Takuya.slx file in Simulink
8. Change the simulation time from 30 sec to 120 sec (n/a if already at 120 sec)





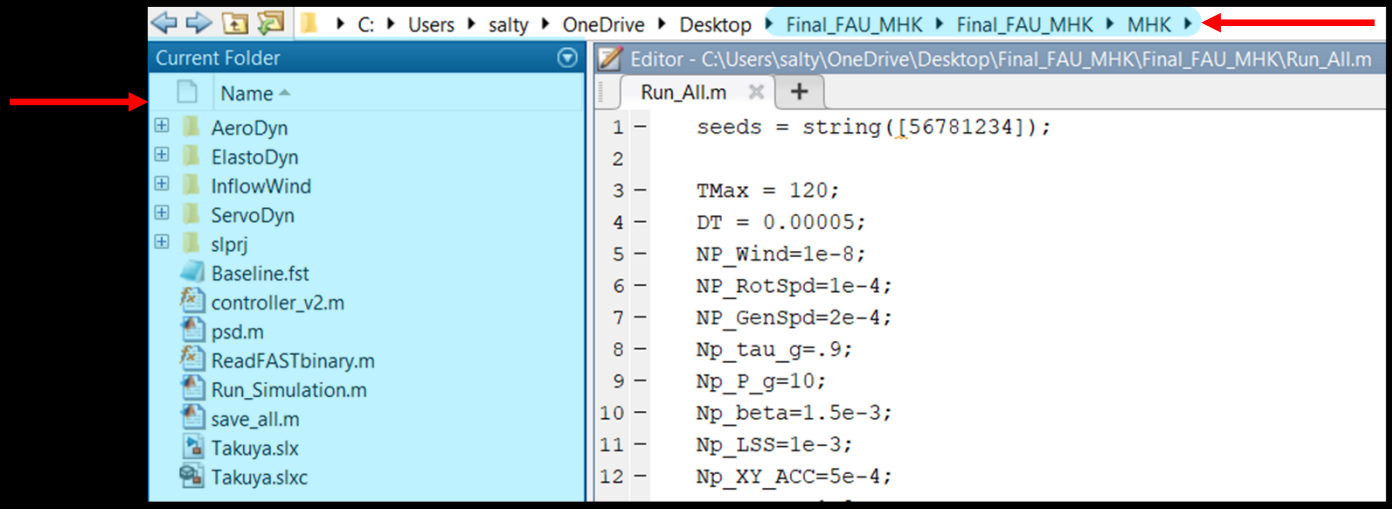
Setup

9. In MATLAB, add the Final_FAU_MHK folder to path as seen in picture
   (Note: “Add to Path” will be shown)



Run

10. In MATLAB, navigate the “Current Folder” window to the MHK folder and then press play to run the script



Post-process

11. The program will yield a set of output files to the MHK folder named: “TurbSim_56781234_p*.mat” where p* represents the pitch angle for each simulation in *radians*.