MATLAB post processing

MATLAB calls STAR-CCM+ in batch to get and plot reports (e.g. aero forces and coefficients) vs a sweep variable (e.g. angle of attack) from a list of sim files.

WARNING This repository must be kept private since it contains the Siemens POD license string (UniNa) inside the main file.

Detailed description

Calls STAR-CCM+ in batch with a macro to get and plot the desired reports versus an independent variable. Useful to list and plot data from a design sweep like an airfoil investigated at several angles of attack, where each sim file is an angle of attack. Works with Microsoft Windows.

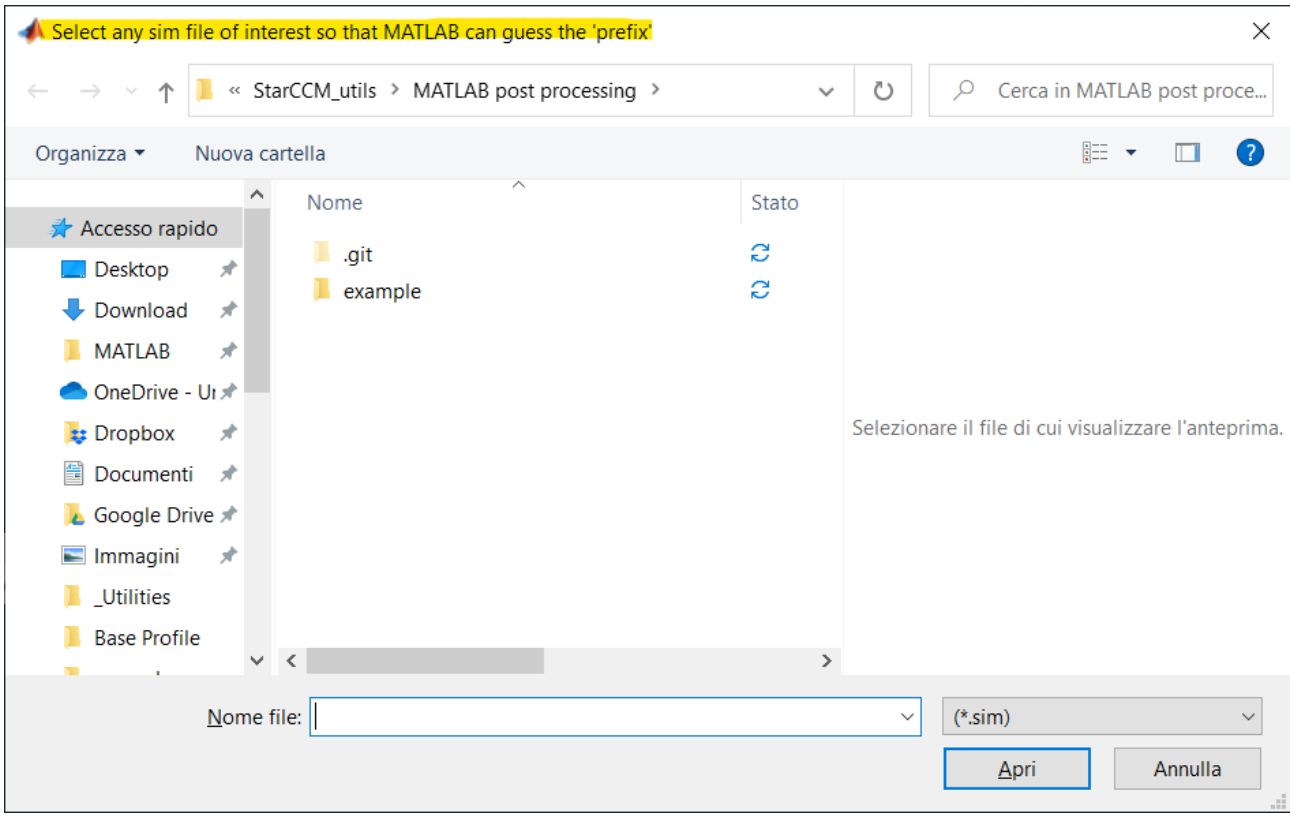
It is assumed that the sim file name has the numeric independent variable in the last characters. MATLAB will try to get the *prefix* of this file name, i.e. the root of the name without the independent variable value. For instance:

`mysimfile_alpha0.0.sim --> prefix = mysimfile_alpha`

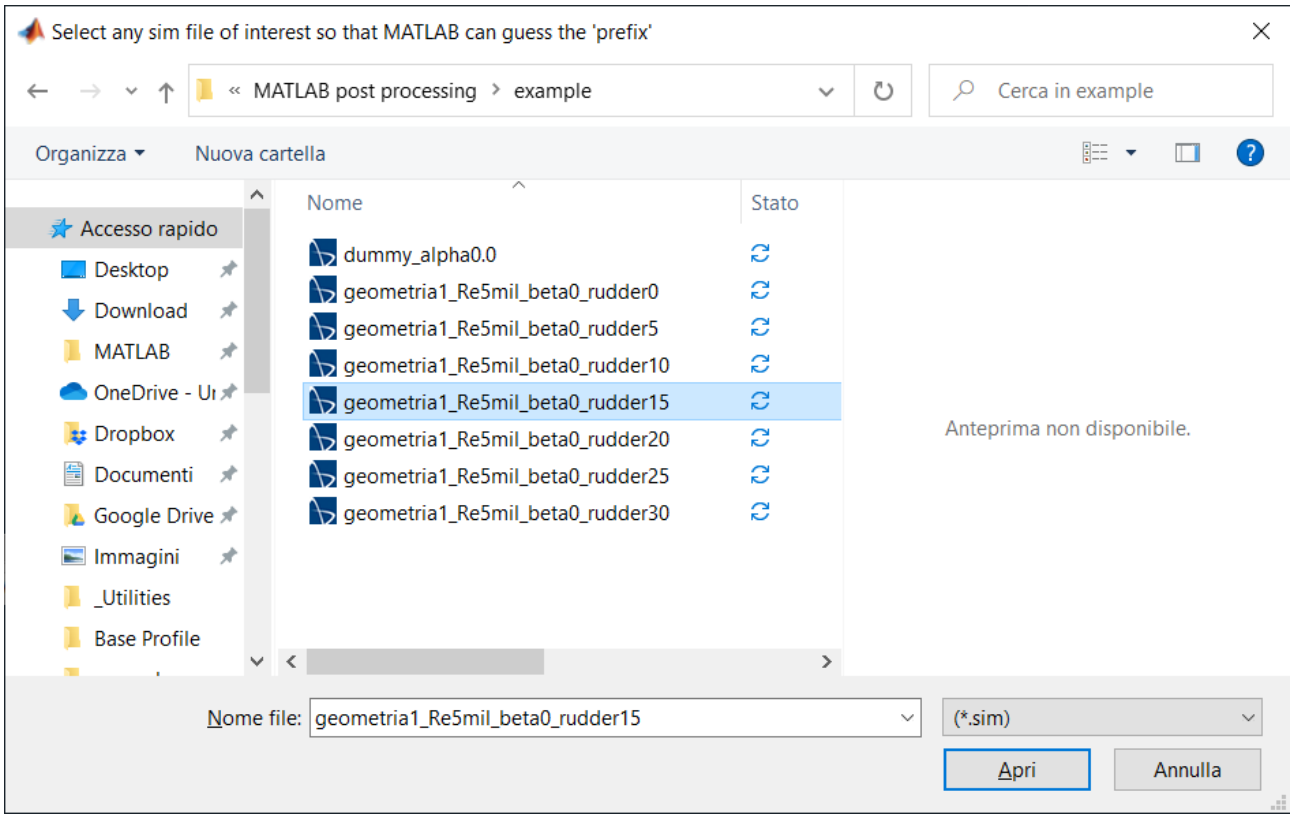
or

`mysimfile_alpha0.sim --> prefix = mysimfile_alpha`

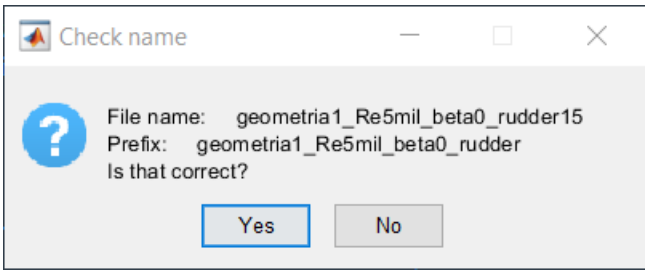
This script will work well with the last characters as floating point digits, even with zero decimal positions. The script will ask the user to check if the prefix has been correctly captured, otherwise it asks the user to write the prefix.



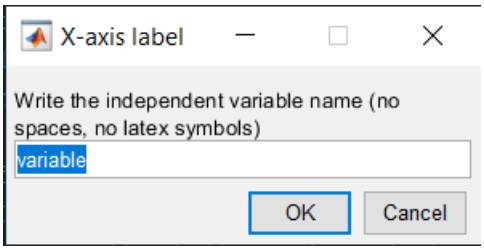
Folder navigation



Select only a sim file to make MATLAB guess the root string (prefix)

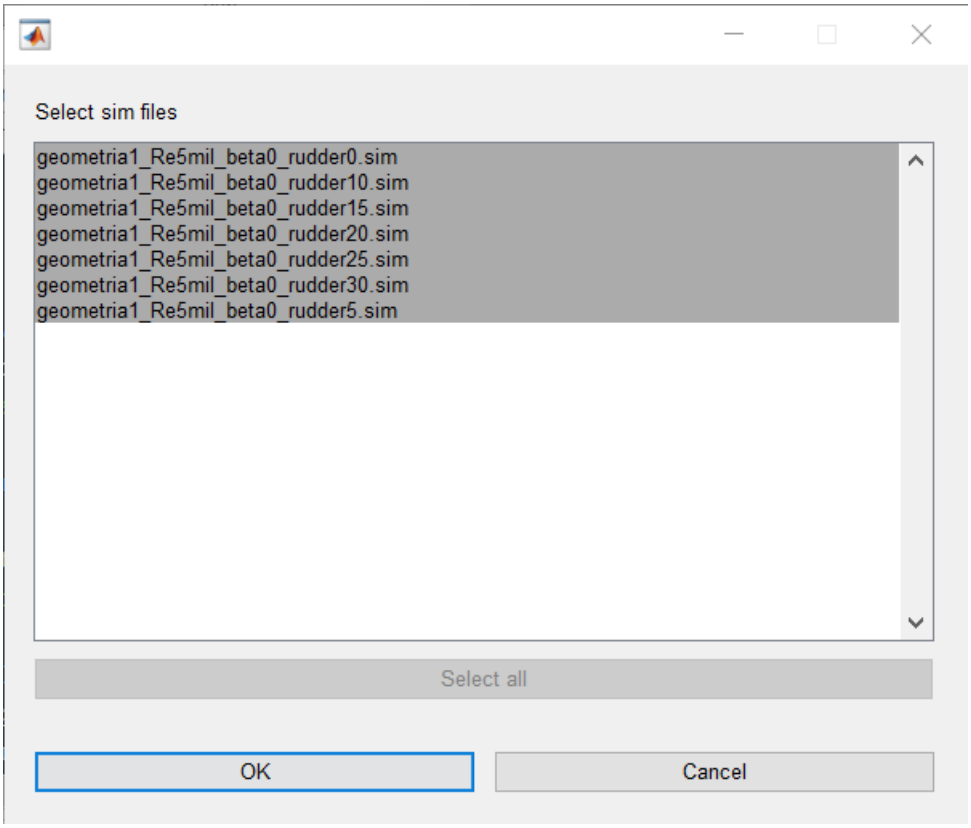


MATLAB asks the user if the prefix is correct. If not, it will ask to write the prefix.



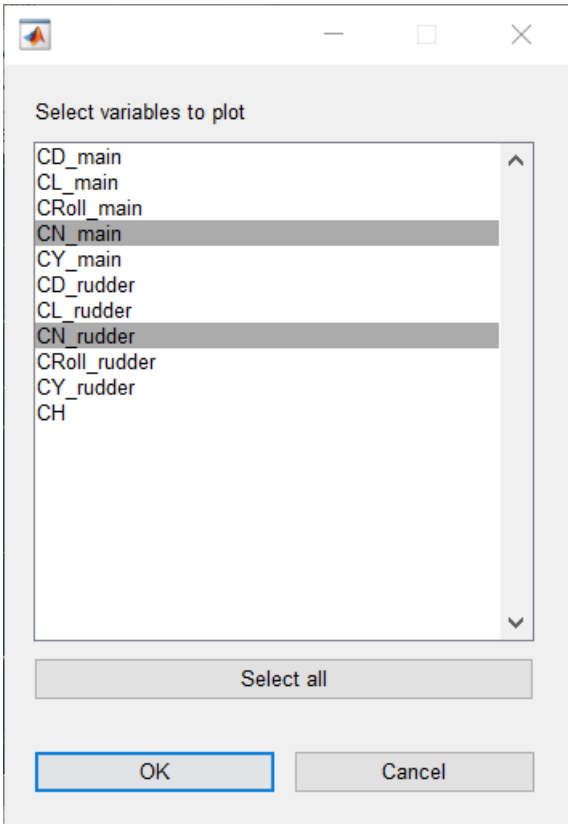
Write the independent variable name (not mandatory)

Then the script will ask the user to choose the sim files from which extract all the reports with the JAVA macro `Report_to_csv.java`. The sim files are all those with the same prefix previously defined, in the folder initially selected, so that it should be easy to get the files of interest even if the folder is populated with many and different file types.

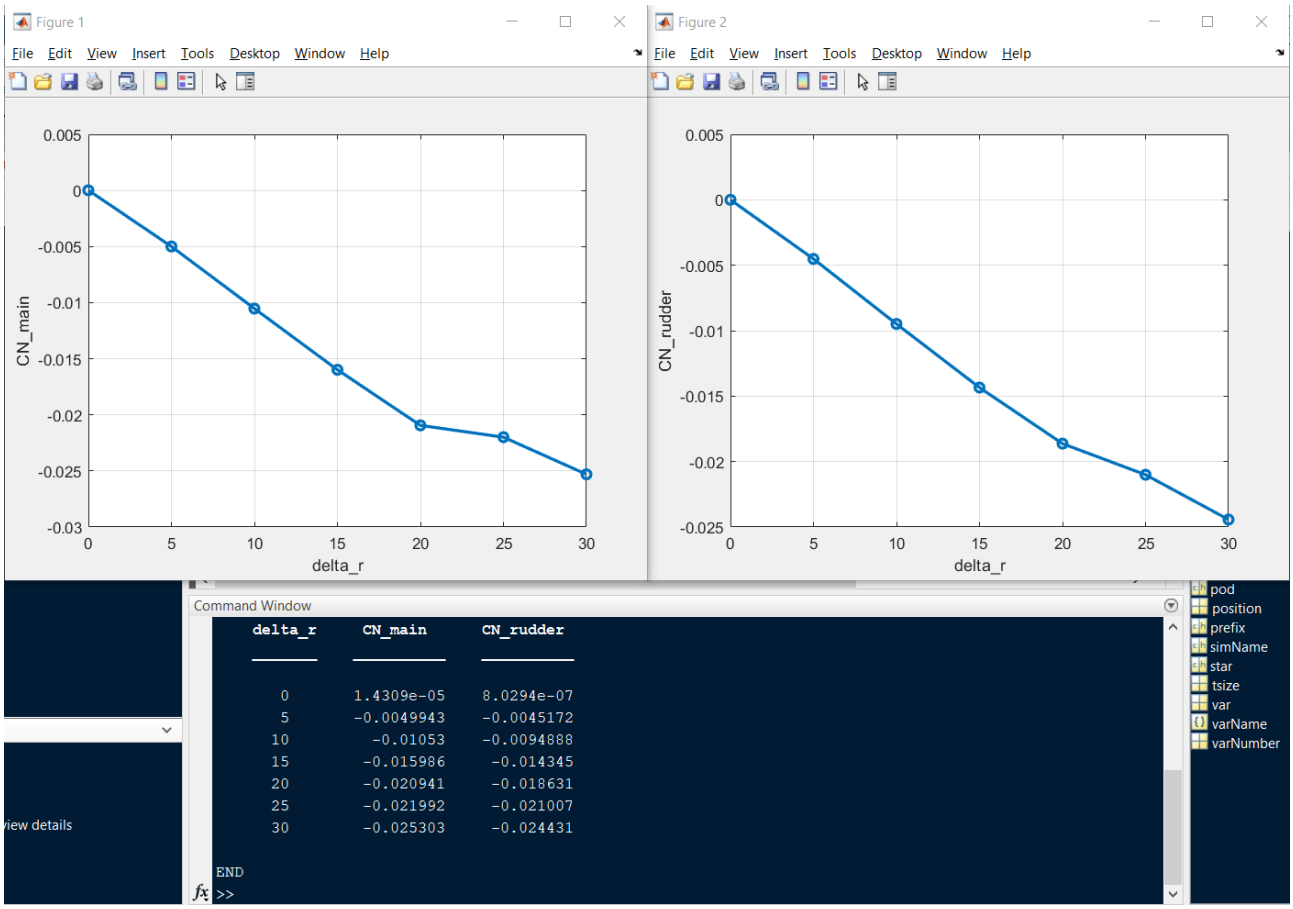


Select the sim file from a list of sim files with the same prefix

Finally, the script asks the user which report to plot versus the independent variable, from a list of all extracted reports. Sparse selection (e.g. non-contiguous angles of attack) is also permitted.



Select which variable to plot



Final output: table in the command window and plots