

# OMFIT ONETWotime Module Tutorial

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## DISCLAIMER:

This is an editable public document! When you make a change to it, it will be visible immediately from everyone! Feel free to edit it and help other OMFIT users!

Since this is an evolving document, there may be some small inconsistencies as different figures have been taken by different people with different versions of OMFIT for different analyses.

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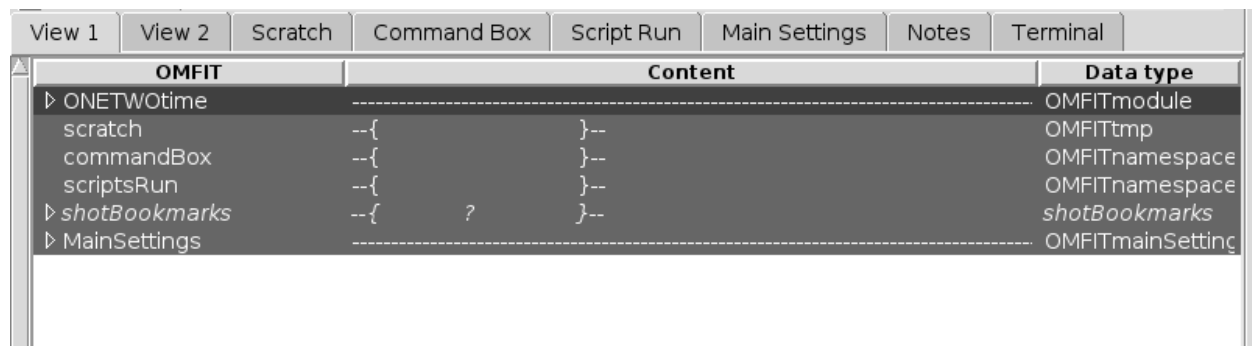
This tutorial shows how to use the ONETWotime module in OMFIT to analyze DIII-D discharges. The ONETWotime module is meant as a replacement for the autoonetwo IDL tool. To run ONETWO, one needs profiles and equilibria. For ONETWotime, these are specified through dependencies. Currently, there are two accepted methods of obtaining profiles:

- 1) Using GAprfiles
- 2) Using the OMFITprofiles module

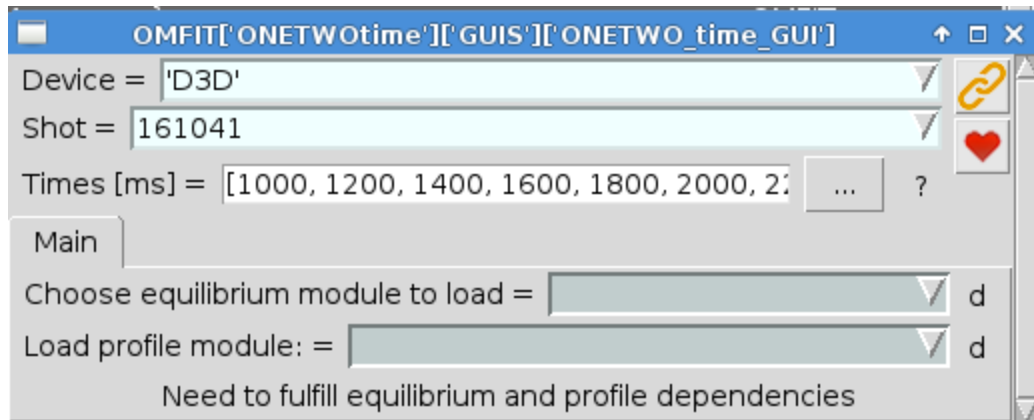
This tutorial will treat each separately.

## Step 1: Start up OMFIT with the ONETWotime module's GUI:

```
omfit -m ONETWotime
```



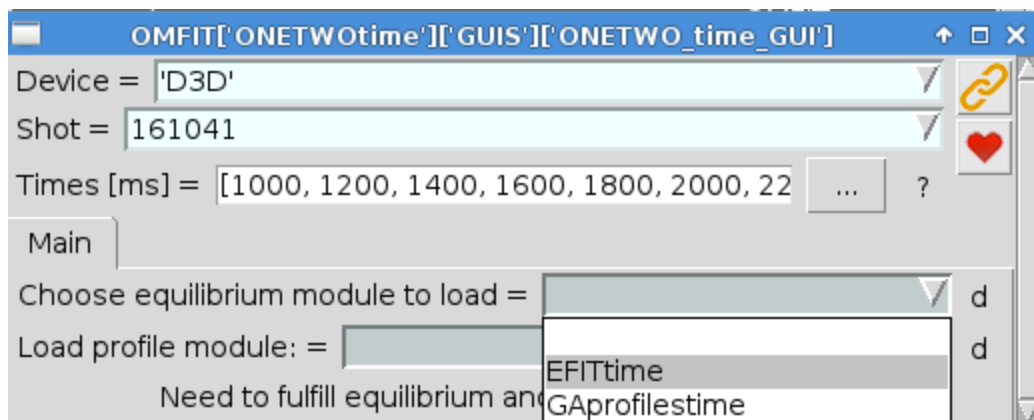
Launch the ONETWotime GUI by double-clicking on the ONETWotime line.



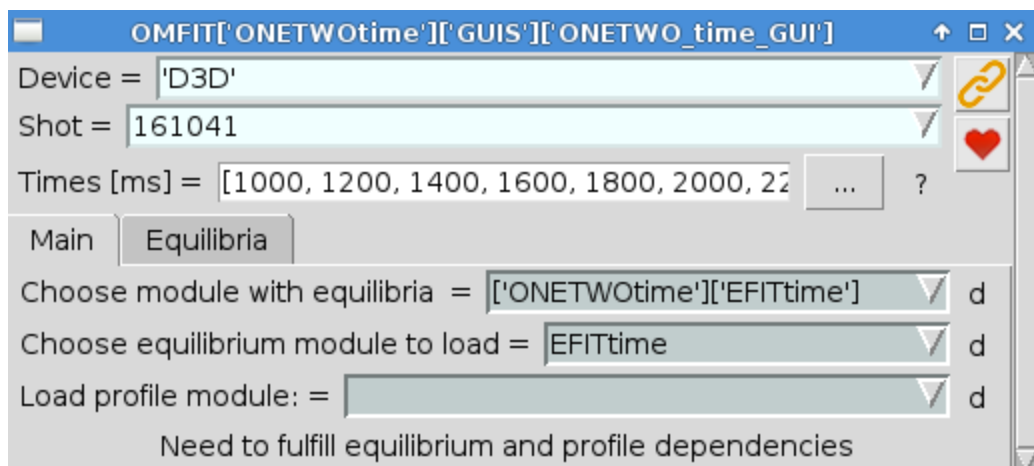
## Path 1: Use EFITtime and OMFITprofiles

### Part 1: Equilibrium

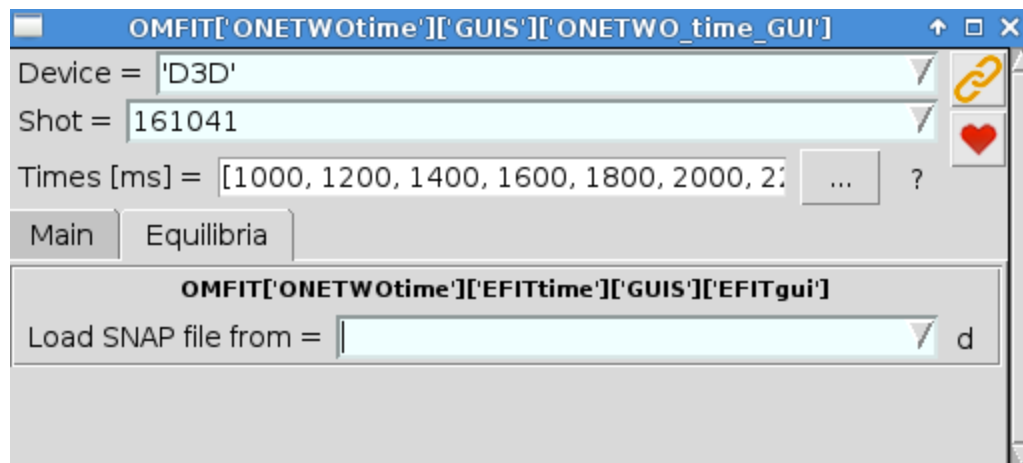
Choose EFITtime as the equilibrium module



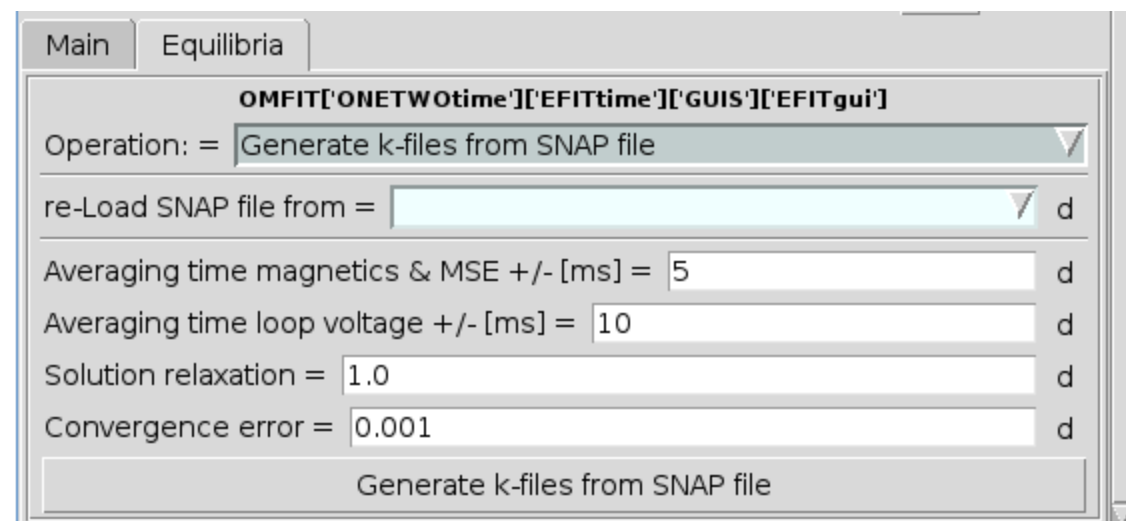
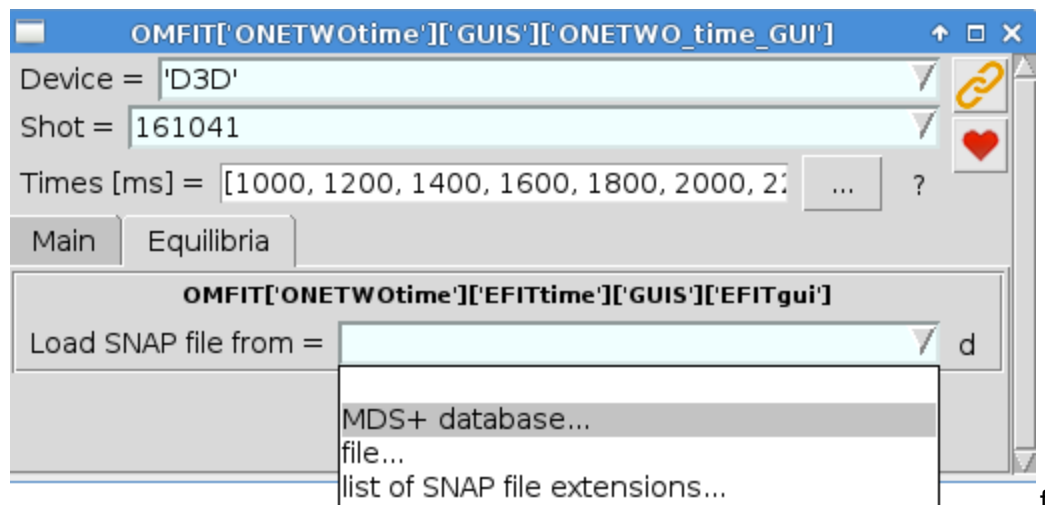
->



Choose the Equilibria tab

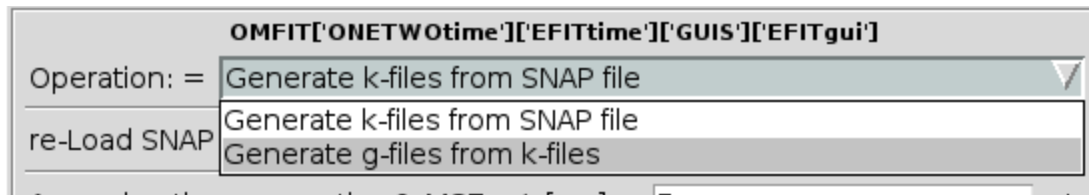


Load a snap file

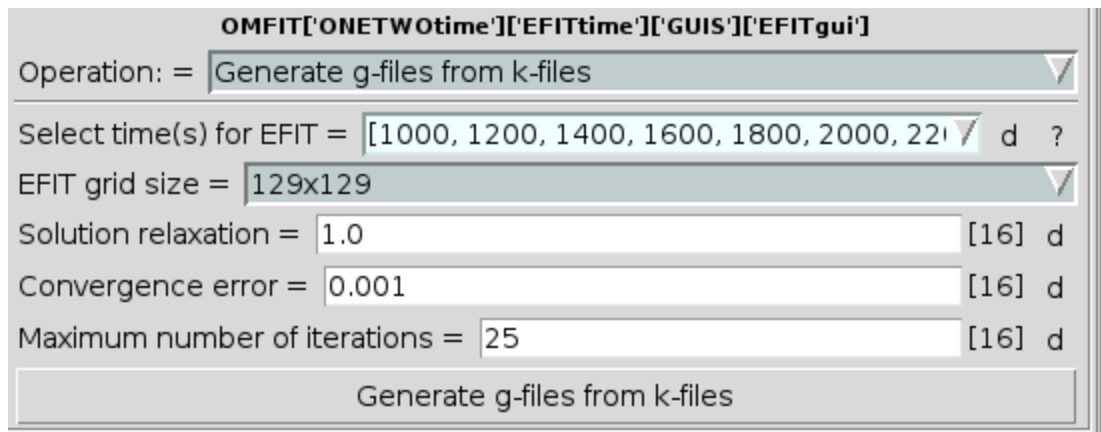


Click the Generate k-files... button

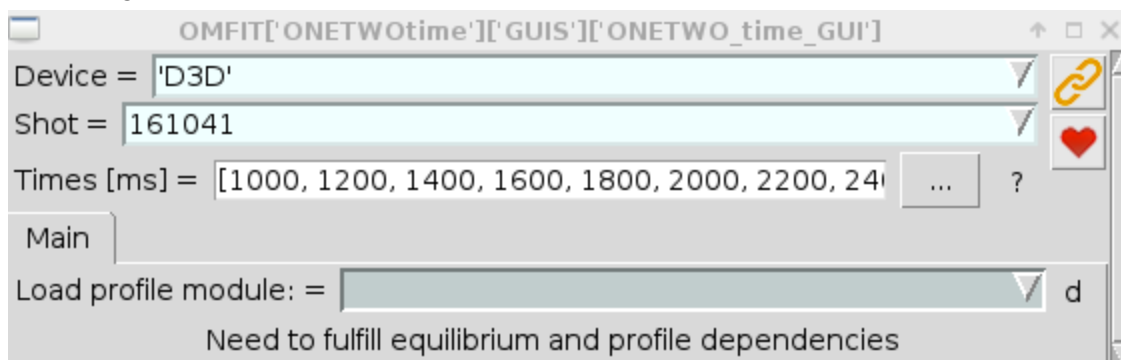
Choose the Operation: Generate g-files ...



Click the Generate g-files... button



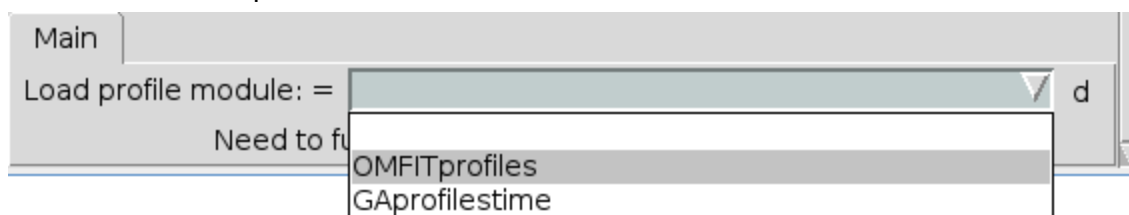
Now the gfiles have been produced, and the GUI reformed to reflect this



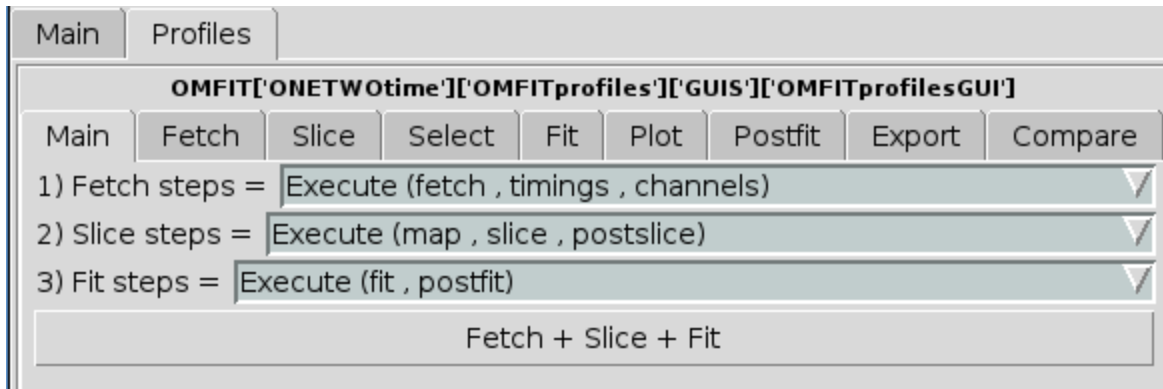
If you want to further refine the equilibria, you can navigate in the tree to ONETWotime->EFITtime->GUIS->EFITgui

## Part 2: Profiles

Choose the OMFITprofiles module



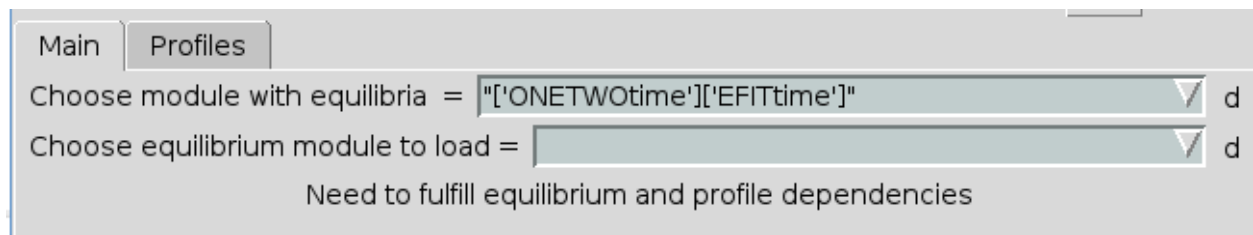
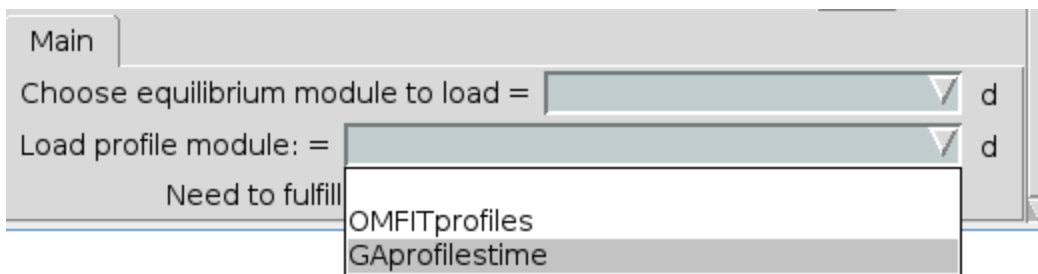
Choose the Profiles tab



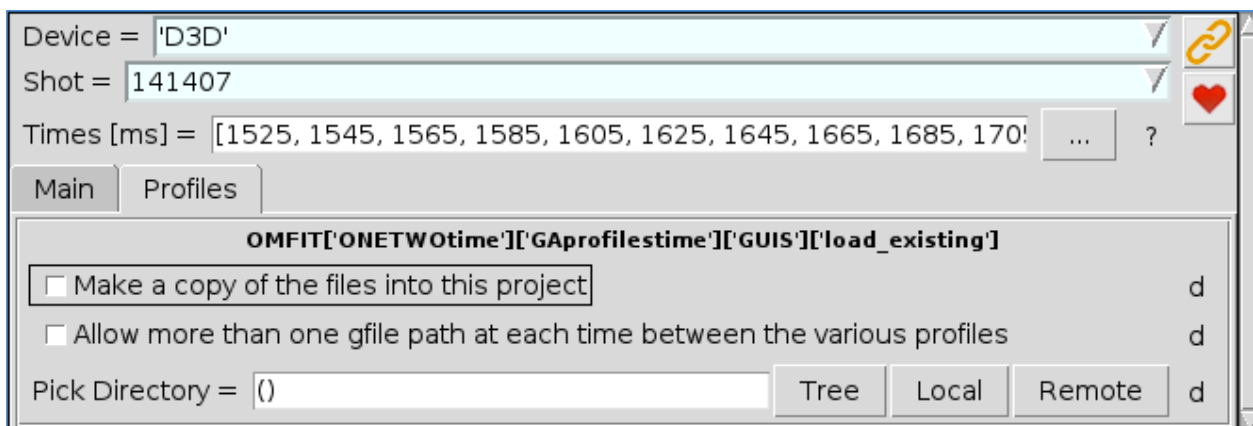
Run OMFITprofiles accordingly. If you are unfamiliar with this module, check out its [tutorial](#).

## Path 2: Choose GApfiles

Choose GApfilestime for the profile module



Choose the profiles tab



Enter the directory

Device = 'D3D' 

Shot = 141407 

Times [ms] = [1525, 1545, 1565, 1585, 1605, 1625, 1645, 1665, 16... ?

Main Profiles

**OMFIT['ONETWotime']['GAprofilestime']['GUIS']['load\_existing']**

☐ Make a copy of the files into this project d

☐ Allow more than one gfile path at each time between the various profiles d

Pick Directory = '/u/smithsp/XP/141407/' Local Remote d

Press return

OMFIT['ONETWotime']['GUIS']['ONETWO\_time\_GUI'] 

Device = 'D3D' 

Shot = 141407

Times [ms] = [1525, 1545, 1565, 1585, 1605, 1625, 1645, 1665, 16... ?

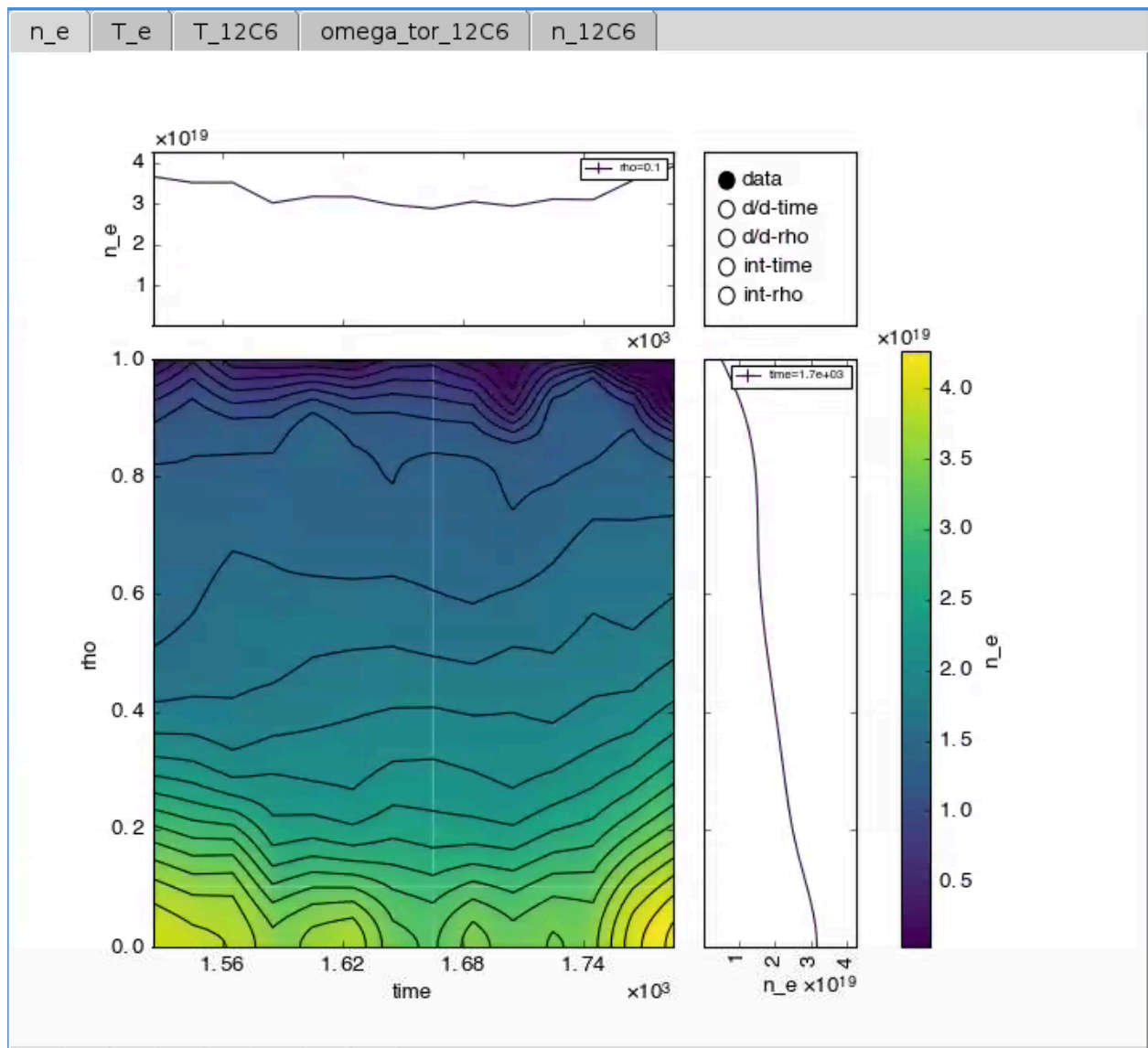
Main Profiles

**OMFIT['ONETWotime']['GAprofilestime']['GUIS']['load\_existing']**

Choose new directory (and clear current fits)

Plot GAprofiles fits

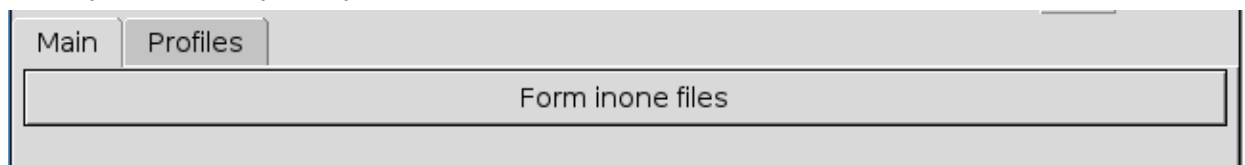
Plot the fits



Choose the main tab

## Run ONETWO:

When you are happy with your profiles, switch back to the Main tab



Click the Form inone files button

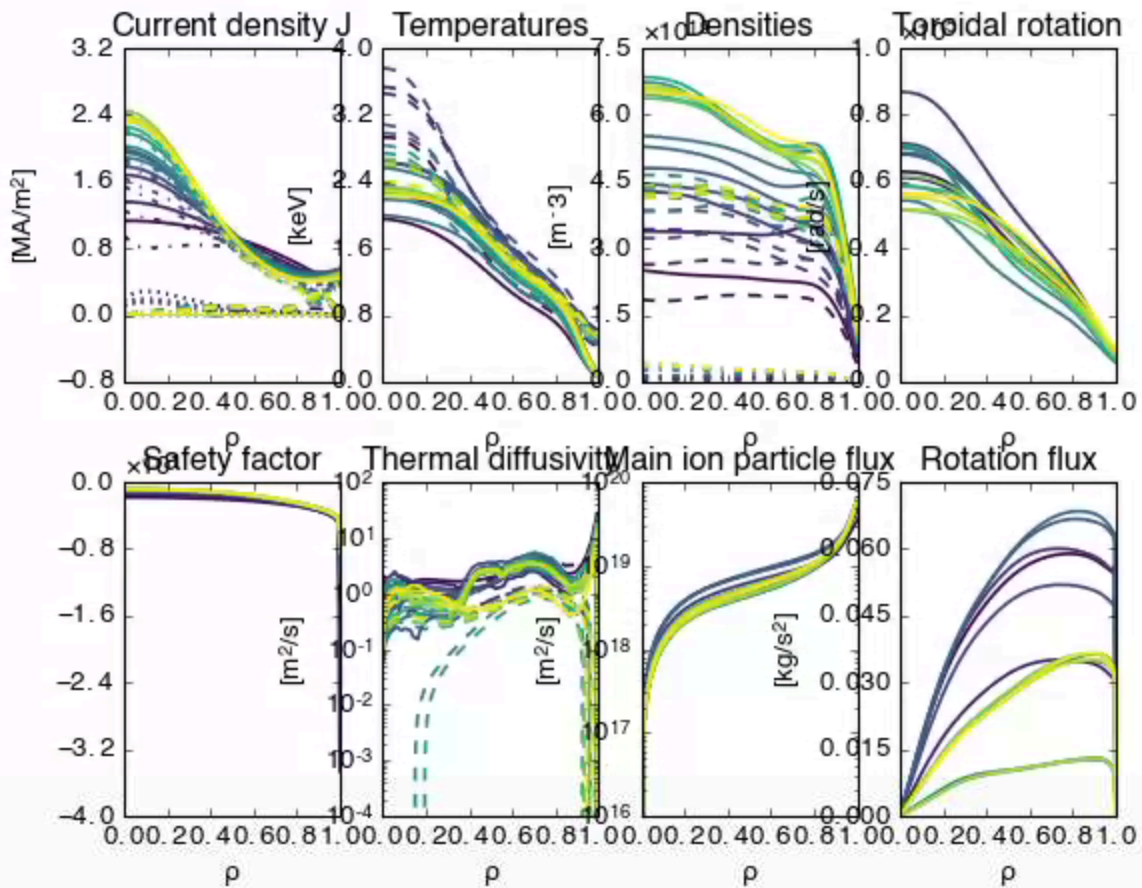
|                                                                    |   |
|--------------------------------------------------------------------|---|
| <input checked="" type="checkbox"/> Update profiles in inone files | d |
| <input checked="" type="checkbox"/> Update nbi in inone files      | d |
| <input checked="" type="checkbox"/> Update ech in inone files      | d |
| Form inone files                                                   |   |
| Run ONETWO                                                         |   |

Click the Run ONETWO button

|                                                                           |                                                                                       |
|---------------------------------------------------------------------------|---------------------------------------------------------------------------------------|
| OMFIT['ONETWotime']['GUIS']['ONETWO_time_GUI']                            |                                                                                       |
| Device = 'D3D'                                                            |    |
| Shot = 161041                                                             |    |
| Times [ms] = [1000, 1200, 1400, 1600, 1800, 2000, 2200, 2400, 2600, 2800] |  ? |
| <input checked="" type="checkbox"/> Update profiles in inone files        | d                                                                                     |
| <input checked="" type="checkbox"/> Update nbi in inone files             | d                                                                                     |
| <input checked="" type="checkbox"/> Update ech in inone files             | d                                                                                     |
| Form inone files                                                          |                                                                                       |
| Run ONETWO                                                                |                                                                                       |
| Plot statefiles                                                           |                                                                                       |
| Accumulate statefiles into a single netcdf file                           |                                                                                       |

Plot the statefiles:





Some codes require the output statefiles to be in ASCII file format. A button has been added to run the ONETWOconvertITERDB script in ['SCRIPTS']['TOOLS'] which adds an ITERDB file in ['OUTPUTS']['iterdb'] for each time point.

