

## Tutorial session 3 examples

### 1. ADAS303 Test Case

1. Move to your sub-directory `./.../uid>/adas/pass`. Start ADAS and go to the ADAS3 series sub-menu. Click with the mouse on the third button in adas3 series for ADAS303. The Input window for ADAS303 pops up.
2. Click on *Central Data*, the data root to data class ADF12 should appear dimmed in the window above. Click on the directory name `qef93#h` in the file list window. `qef93#h` appears above in the selection window. Click on `qef93#h_c6.dat`. It appears in the selection window.
3. Click the *Browse comments* button. Information of what is in the file `qef93#h_c6.dat` is displayed. Click *Done* to restore the Input window. Click *Done* and the ADAS303 Processing window appears.
4. Click on the *Fit polynomial* button, then type 5 in the adjacent active editable box. Click on the  $n=8 - n'=7$  transition in the transition list window. You will need to use the scrollbar on the right. It appears in the selection window above.
5. Click on the *Default Energy/Velocity Values* button. If a warning pop up appears, click *Confirm* on it. A set of energies appears in the Output energies column. Note the units in use. You need to edit the table to change the units.
6. Click on the *Select supplementary plasma parameters* button. Now type in Output Values for Ion Density, Ion Temperature, Z effective and B Magnetic. Note the reference value and valid ranges for each of these parameters are given. The reference values are good values to enter.
7. Click on the *Done* button to proceed to the Output options window.
8. Click on the button for *Graphical Output*. Then click *Done*. The graph pops up. Click *Done* to restore the Output options window. Click on the *Exit to Menu* icon to finish up. [Note that clicking the *Cancel* button on each of the three options windows in turn also backs you out of the program.] Finally click on the *Exit* button on the sub-menu and main menu windows to exit ADAS.

### 2. ADAS 308 Test Case

1. Move to your directory `./.../uid>/adas/pass`. Start ADAS and move to the ADAS3 series menu. Select ADAS308.
2. Click on *Central Data*, the data root to data class ADF01 should appear in the window alongside. Click on the directory name `qcx#h0` in the file list window. `qcx#h0` appears above in the selection window. Click on `qcx#h0_old#n7.dat`. It appears in the selection window [you may need to scroll down].
3. Click the *Browse comments* button. Information of what is in the file `qcx#h0_old#n7.dat` is displayed. Click *Done* to restore the Input window. Click *Done* and the ADAS308 Processing window appears.
4. The Processing window is complex. Note the information on donor and receiver near the top. To the right enter the Atomic mass of the receiver (14.0). Remember to press `{return}`.
5. Next Input the plasma parameters, for example,  $T_i=5.0e3$ ,  $T_e=5.0e3$ ,  $N_i=2.5e13$ ,  $N_e=5.0e13$ ,  $Z_{\text{eff}}=2.0$ ,  $B=3.0$ .
6. Now Select charge exchange theory. This is a drop down menu. Click *Use input data set*. [Note programs have built in default activation on some buttons. If the button is darkened it is activated]. Now Select emission measure model. This is also a drop down menu. Click *Charge exchange*.
7. Now turn to the Input of beam and spectrum line information and click first on the button for *Beam parameter information*. The appropriate table appears below for editing. Click Edit to bring up Table Editor and enter appropriate values, for example

0.85	8.0E4
0.12	4.0E4
0.03	2.7E4

and then *Done*.

8. Similarly, click the button for Observed spectrum lines and edit it's table. Try

9	8	1.00E12
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and click *Done*.

9. Finally click the button for Required emissivity prediction and edit it's table. Try

9	8	1
8	7	2
7	6	2
6	5	

and click *Done*.

10. All is now ready. Click *Done* to move to the Output options window.

11. Click the button for *Graphical output*. You may also *Enable Hard Copy* and *Text Output*. Finally click *Done* to see the graph.

12. Click *Done* to return to the Output options screen. Click on the *Exit to Menu* icon to finish up. Finally click on the *Exit* button on the sub-menu and main menu windows to exit ADAS.