



EFDA

EUROPEAN FUSION DEVELOPMENT AGREEMENT

Task Force
INTEGRATED TOKAMAK MODELLING

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Introduction to ISE

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- **Set your working environment**
 - Launch ITMv1 script or equivalent
- **Create your private database** if not done before
 - Launch the script `create_user_itm_dir`
- **Build Kepler workflow**
 - Not necessary if you just want use ISE as a tool to visualize your data

- A simulation = a data entry in the database, characterized by :
 - User : either « public » (refers to the public database) or the username to refer to a private DB
 - Machine : name of the tokamak (e.g. « test » for testing purposes)
 - Shot : shot number
 - Run : simulation number, can represent various versions of a dataset, or multiple simulations done for the same (user,machine,shot)
- A study = a simulation + its ISE parameters
 - Favorites, associated workflow, parameters displayed in the overview or in the monitoring view...

- **Integrated Simulation Editor allows to :**
 - Visualize and edit the values of a simulation in the current database
 - Associate the dataset with a Kepler workflow
 - Run Kepler within ISE
 - Follow the evolution of some parameters during the execution of the workflow
 - Display the results with Matlab or Scilab
- **Restrictions**
 - Visualize only 1D and 2D data
 - Some restriction for arrays of structures

ise.sh

The screenshot shows the ISE (Integrated Simulation Editor) V1.0.8 interface. The window title is "ISE (Integrated Simulation Editor) V1.0.8". The menu bar includes "Edit", "Data", "Monitoring", "Postprocessing", "Preferences", and "Window?". The toolbar contains various icons for file operations and simulation control. The "Current study" section shows "Machine" as the selected study. The "Tree Data Views" panel on the left contains buttons for "All", "Machine", "Overview", "Monitori...", "Favorites", and "Workflow". The "Working space" is the large central area. The "CPOs read" section includes "CPO in memory" and buttons for "Save CPO" and "Free CPO". The "Overview" section at the bottom left features a "Tools" panel with zoom and pan icons, and a graph with a Y-axis from 0.0 to 1.0 and an X-axis from 0.00 to 1.05. The graph has a grid and a status bar at the bottom.

Menu bar

Toolbar

Current study

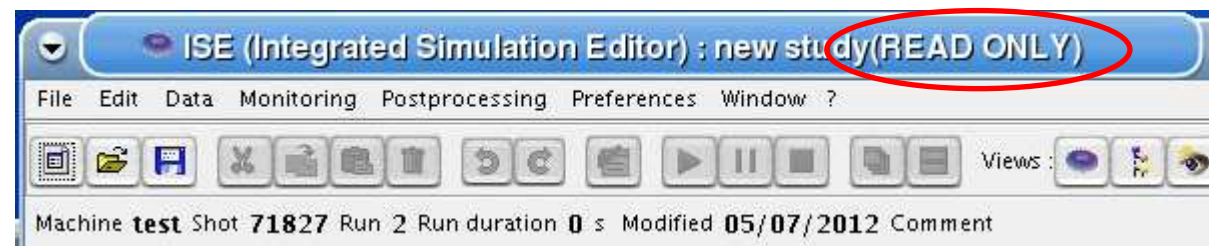
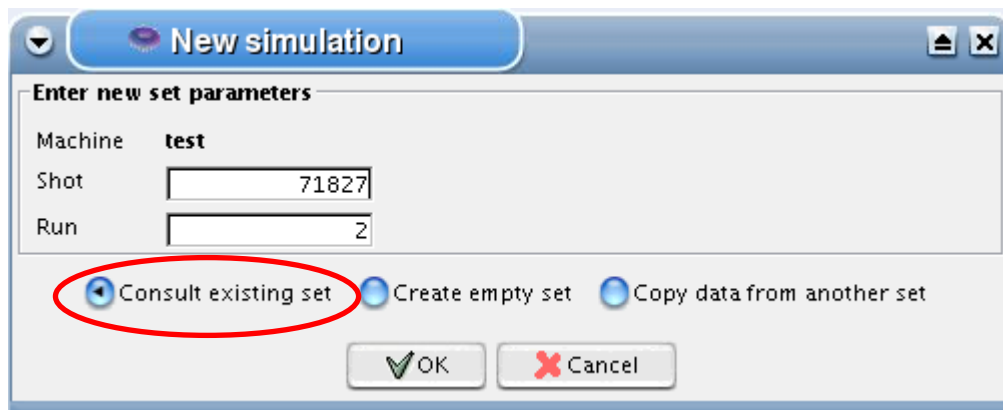
Tree view

Working space

CPOs read

Overview

- Consult an existing dataset (new since 4.09a)
 - Read only mode
- Create an empty simulation



- Copy a simulation from an other data entry
 - From the current database (same user/machine)
 - From another database
 - Of the same user (different machine)
 - Of a different user (even from the public DB)
- NB : since 4.09a target shot/run number may be identical to source shot/run if the source machine and target machine are different

New simulation

Enter new set parameters

Machine: test

Shot: 45534

Run: 2

Consult existing set Create empty set Copy data from another set

Retrieve data from

Machine Ref.: tore_supra

Shot ref.: 45534

Run ref.: 1

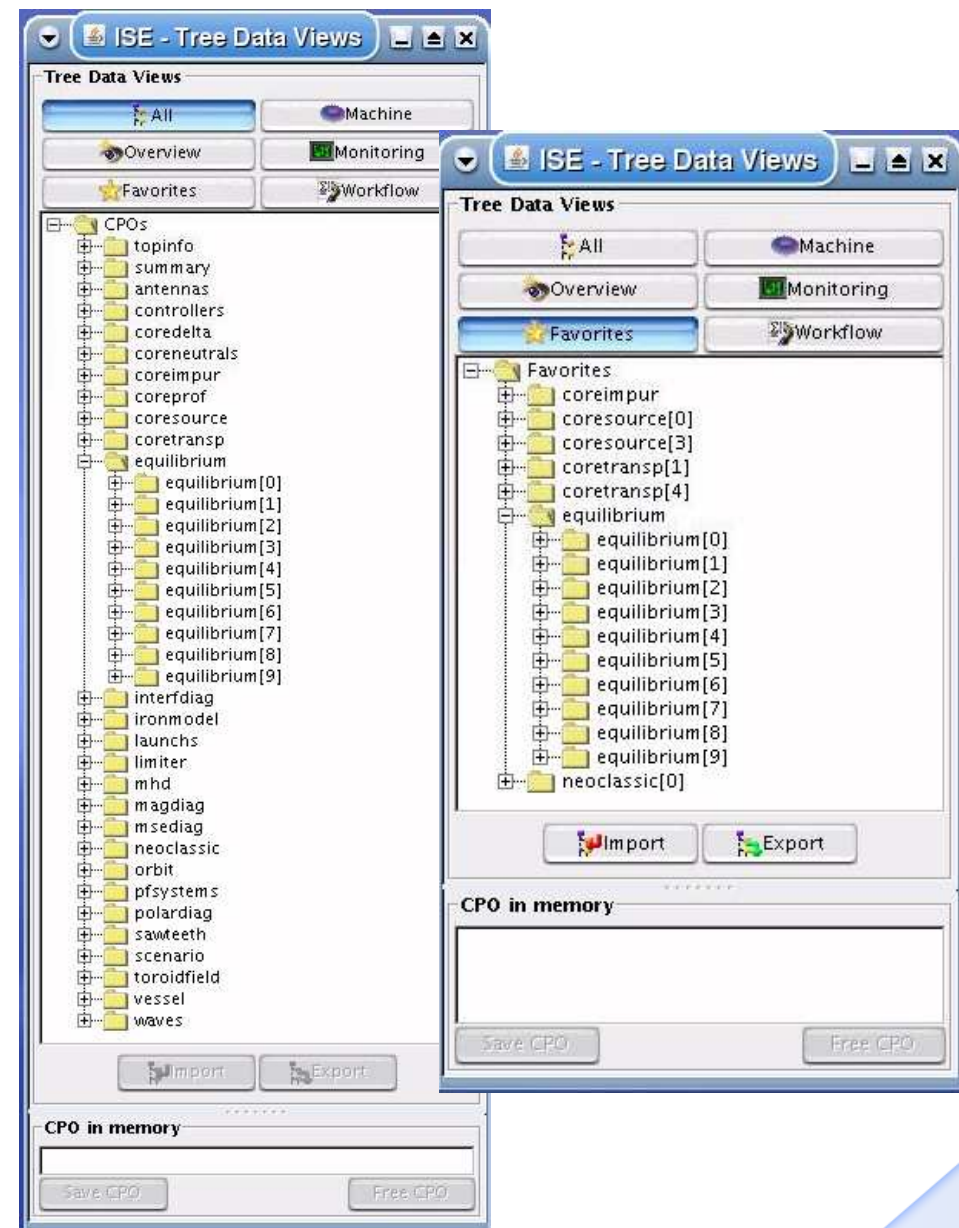
Source: Public Private

User name: signoret

OK Cancel

Navigate in the trees

- Tab 'All' : all the CPOs with all their occurrences
- Tab 'Favorites' : your selection of Cpos
 - Complete cpos with all their occurrences
 - One occurrence of a cpo
- Tab 'Machine' : only the Cpos with machine description parameters
 - Editable only in 'Expert mode'
- The 'Favorites' can be saved and re-used for another study (export/import)



ISE (Integrated Simulation Editor) (Expert mode) : /afs/efda-itm.eu/user/s/signoret/private/TestISE/studies/test

File Edit Data Monitoring Postprocessing Preferences Window ?

Machine **test** Shot **20** Run **1** Run duration **0** s Modified **18/03/2010** Comment

magdiag/bpol_probes/measure/value

Unit : T

Description Signal value; Time-dependent; Vector

Array Graphic Transposed graphic

Time	1	2	3	4	5	6
-30.354	-0E0	-0E0	-0E0	-0E0	-0E0	-4.594E-
-30.321	-0E0	-0E0	-0E0	-0E0	-0E0	-0E0
-30.288	-0E0	-0E0	-0E0	-0E0	-0E0	-0E0
-30.255	-0E0	-0E0	-0E0	-0E0	-0E0	-0E0
-30.223	-0E0	-0E0	-0E0	-0E0	-0E0	-4.594E-
-30.19	-0E0	-0E0	-0E0	-0E0	-0E0	-0E0
-30.157	-0E0	-0E0	-0E0	-0E0	-0E0	-0E0
-30.124	-0E0	-0E0	-0E0	-0E0	-0E0	-0E0
-30.091	-0E0	-0E0	-0E0	-0E0	-0E0	-0E0
-30.059	-0E0	-0E0	-0E0	-0E0	-0E0	-0E0
-30.026	-0E0	-0E0	-0E0	-0E0	-0E0	-0E0
-29.993	-0E0	-0E0	-0E0	-0E0	-0E0	-0E0

Modify Cancel

magdiag/flux_loops/measure/value

Unit : Wb

Description Signal value; Time-dependent; Vector

Array Graphic Transposed graphic

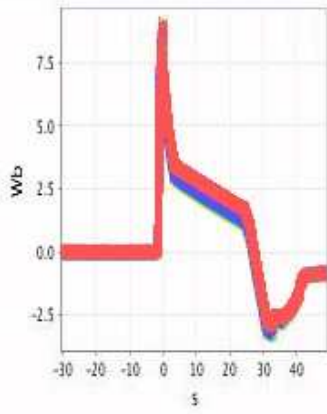
Tools

Axis Y

Autoscale

Min

Max



Series

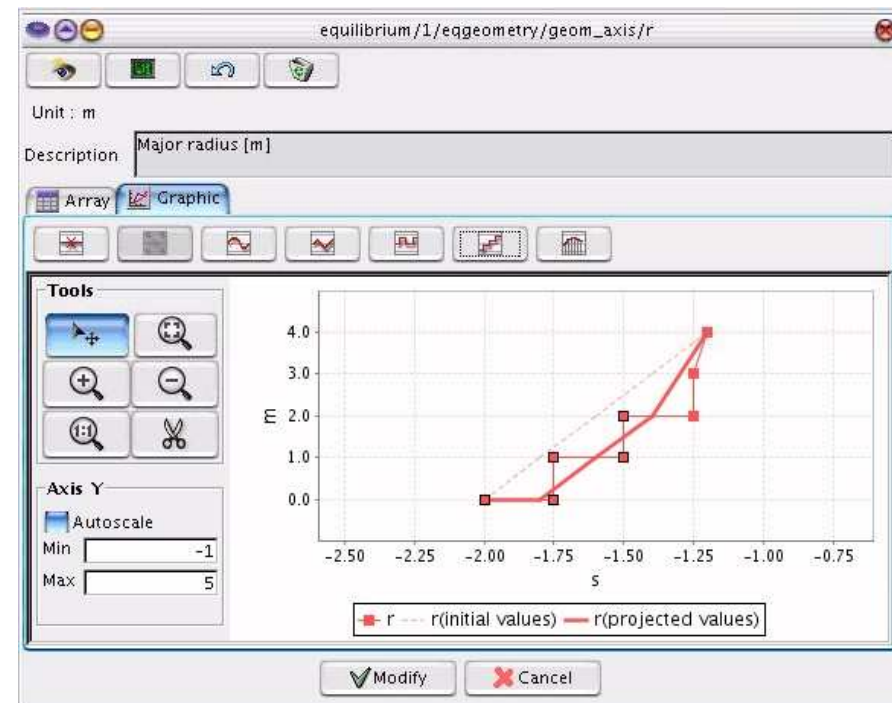
Show all

- column 1
- column 2
- column 3
- column 4
- column 5
- column 6

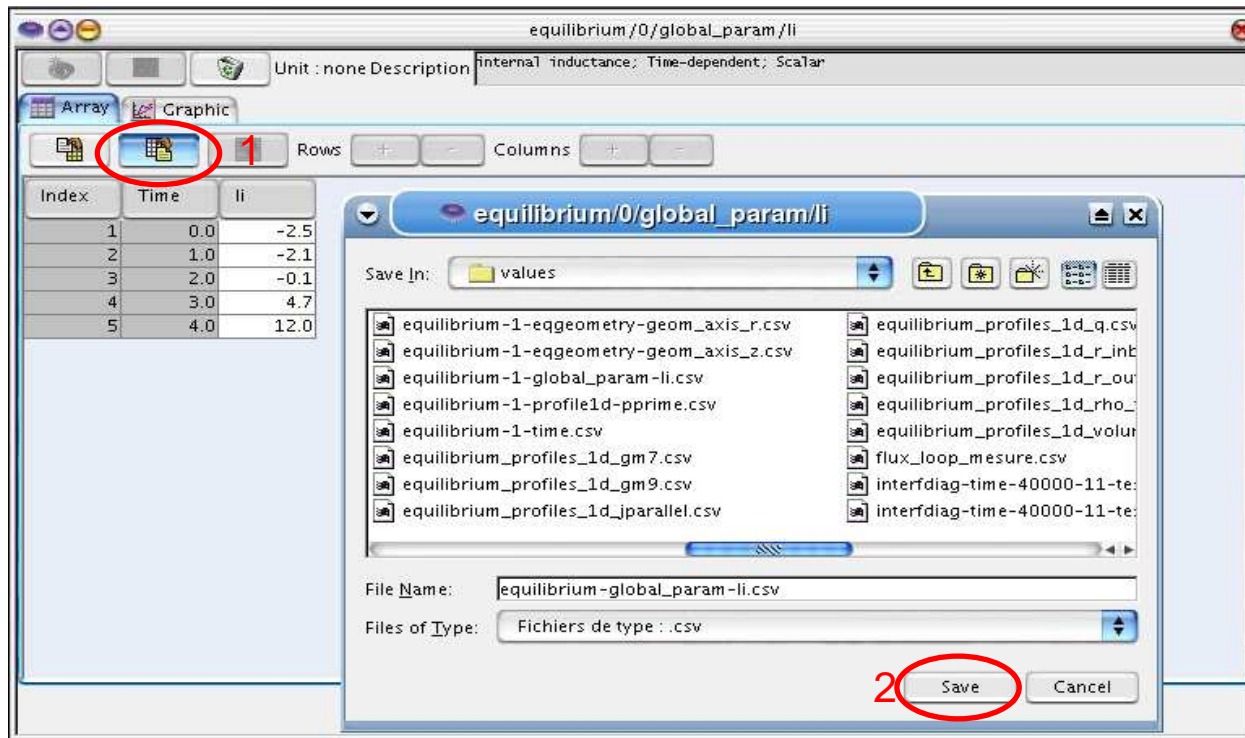
Modify Cancel

Study loaded : UAL connected = Yes

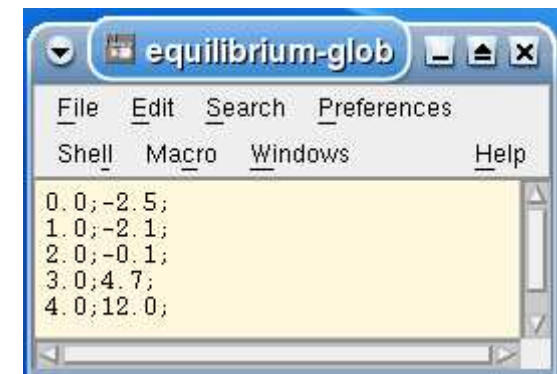
- Editing an empty Cpo Occurrence :
 - Fill the time first
- Graphic edition possible
 - add, move, delete points, add functions between 2 points
- Export/import data
 - Modification are stored in memory until the user's saving action
 - Do not forget to save the study too



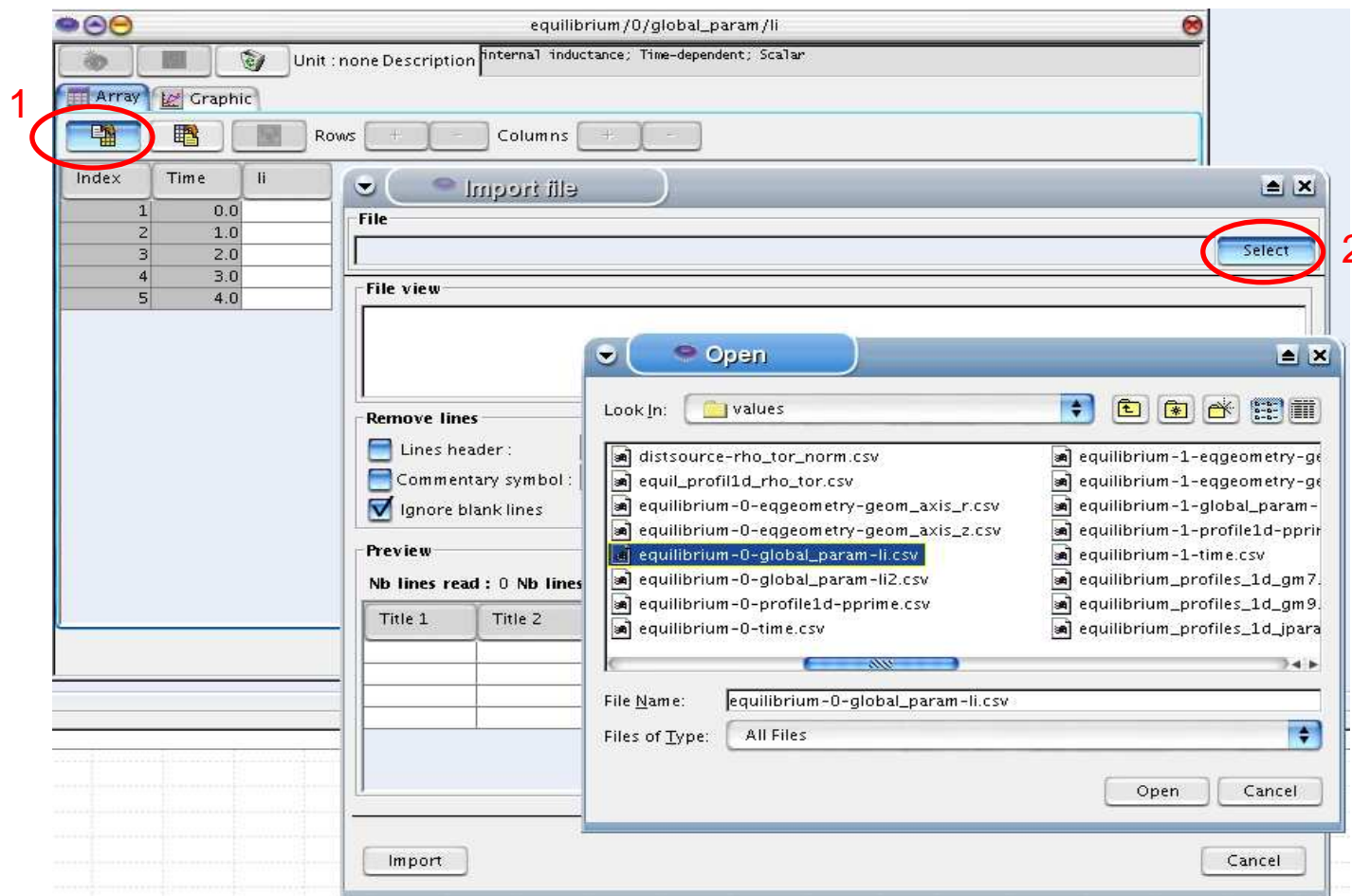
- Click on the ‘Export’ icon
 - Save in a local file in csv format



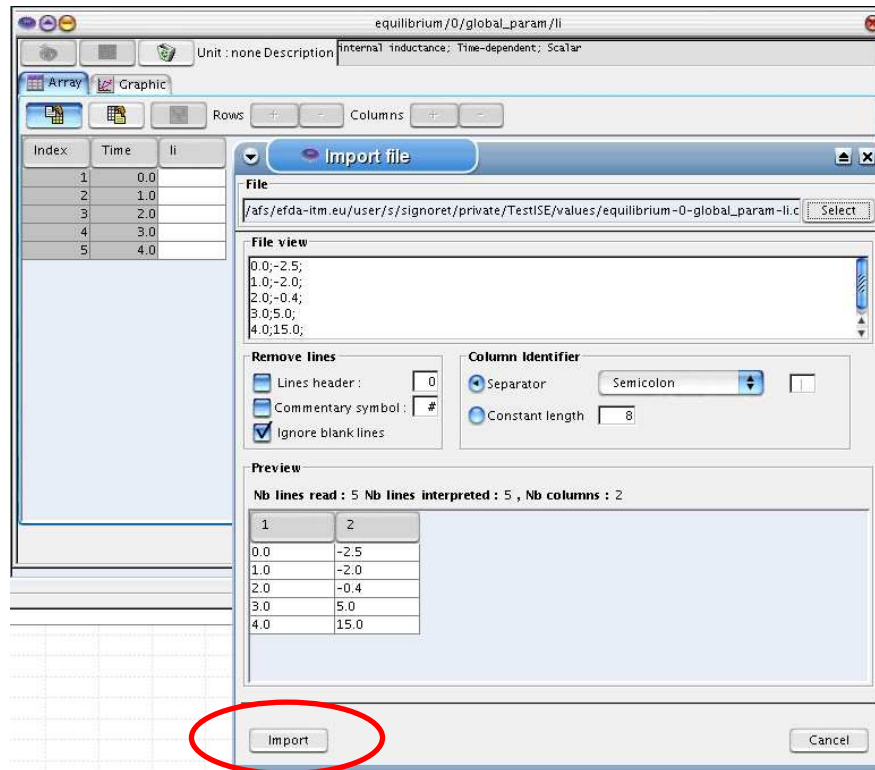
- The file may be edited



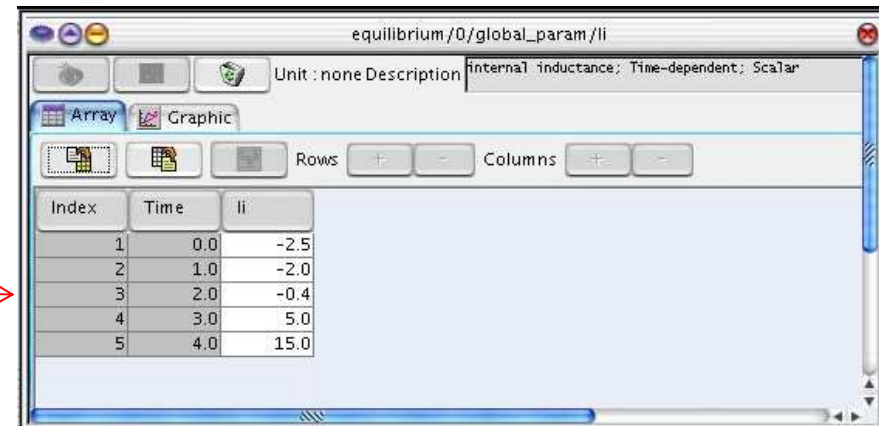
- Click on the import icon
 - Select a local file in csv format



Edition – Import values (2)

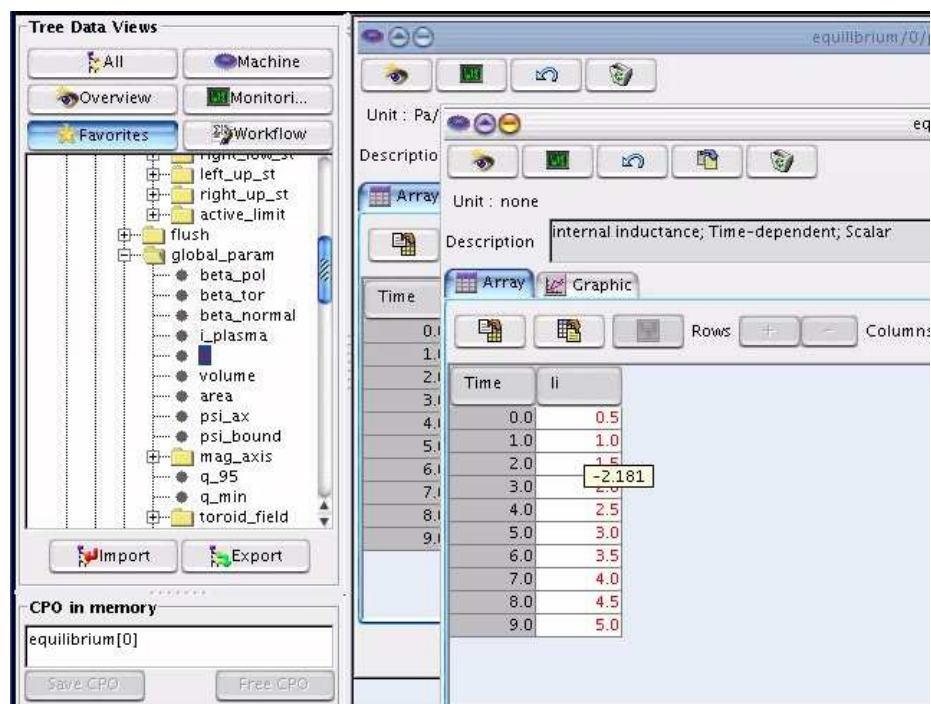


- It is possible to change the type of separator, to ignore some lines in the file (titles, comments, blank lines)



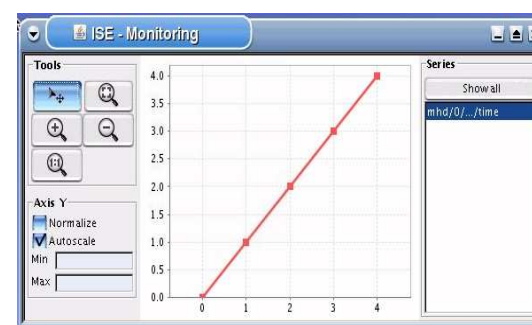
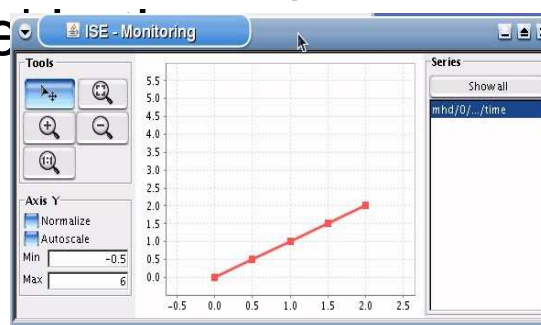
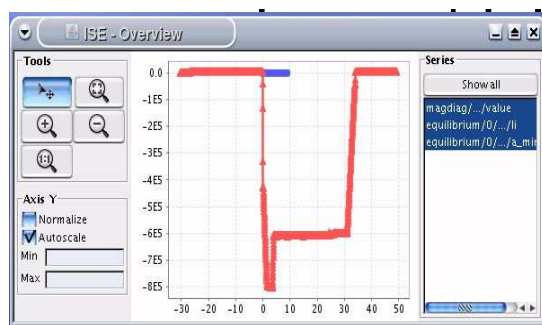
Compare with another dataset

- Menu Data → open compared dataset
 - Select a shot/run in the same database
 - The reference of the compared dataset is stored with the study
- In the Tree view
 - Right-click on an occurrence of a cpo and select “compare datasets”



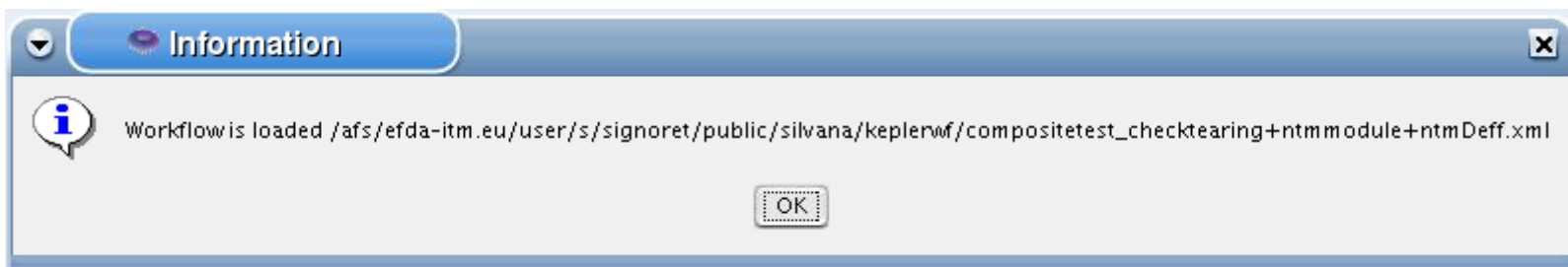
Add data to overview/monitoring

- Add data in the views :
 - Select in the popup menu when you right-click on an element in the tree view
 - Click on the icon when you edit an element in the working space
 - Only vectors can be displayed in the views
 - Several waves can be displayed in the same view
- Delete data :
 - In the Tree data view, right click on an element and

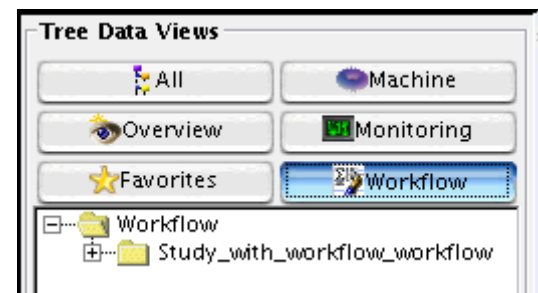


Associate a Kepler workflow

- Menu Data → Select Kepler workflow
 - Choose a workflow in your directories
 - The workflow is saved in the directory in which the study is stored

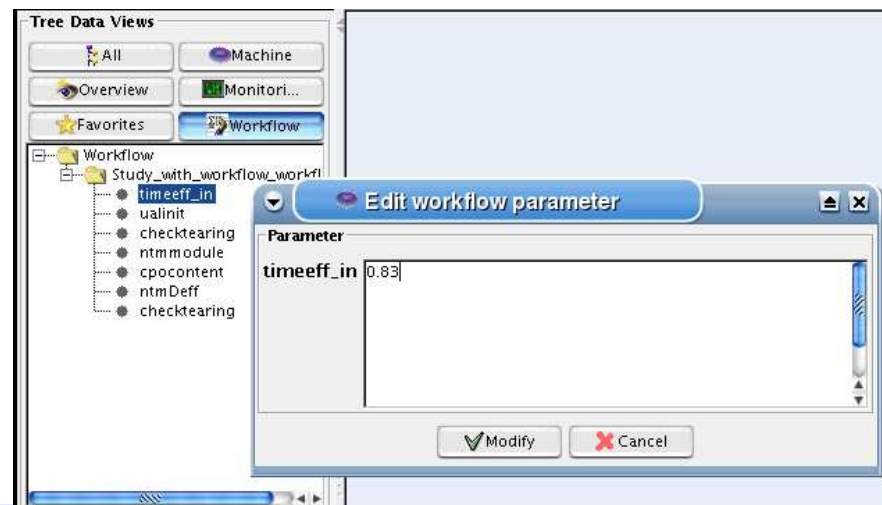


- Its name is the name of the study followed by “workflow”



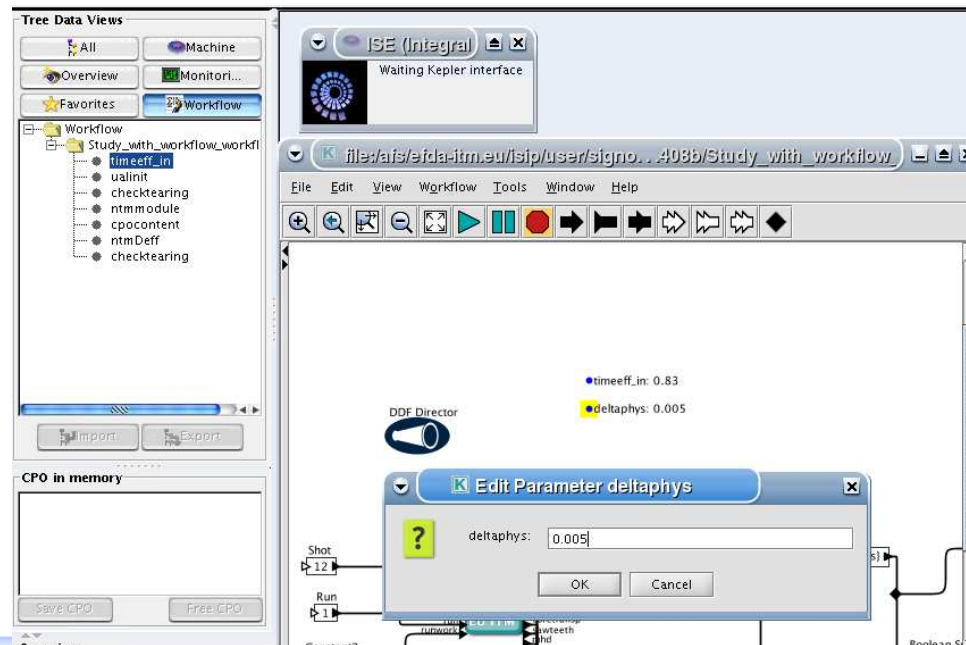
Modify workflow parameters

- In the Workflow view
 - Expand the workflow tree to display :
 - The ITM actors used in the workflow
 - The workflow parameters named xxxx_in (ex: timeeff_in) :
 - to edit them, right-click and choose Edit in the popup menu



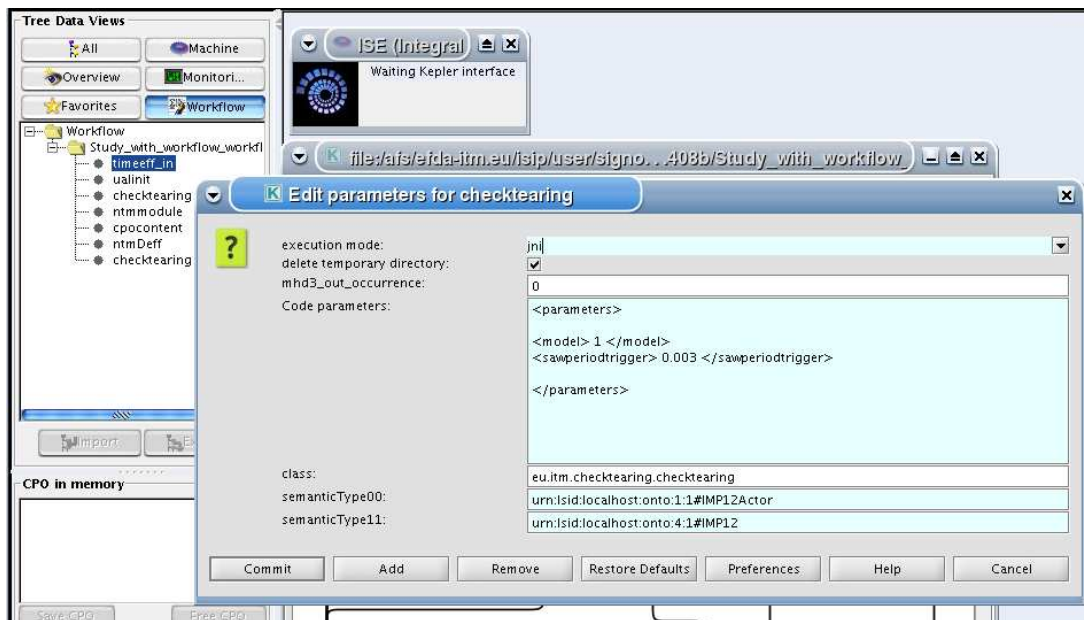
Edit a Kepler workflow within ISE

- Menu Data → Expert Mode
- Menu Data → Edit workflow
 - Launch the Kepler interface to modify the workflow
 - Change workflow parameters values (for the parameters which are not named xxxx_in)



Edit a Kepler workflow within ISE and run

- Add or remove actor



- Edit code parameters for the actors
- Choose 'File → Save' in the Kepler interface
 - All the modifications are carried forward to the workflow associated to the ISE study

- Choose 'File → Exit' or 'File → Close'

➤ Close the Kepler window

– Run the workflow

