

IMASViz tutorial

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DE LA RECHERCHE À L'INDUSTRIE





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About the IMASViz project



- Started in 2016 (~ 1 year of effective development)
- Written in Python3.7, uses libraries:
 - PyQt5 for graphical user interface (GUI)
 - Pyqtgraph for plotting functionalities (plugins can also use matplotlib)
 - Sphinx for generating documentation (.pdf, .html etc.)
- Project sources hosted at git.iter.org (Visualisation/VIZ)
- IMASViz deployed on GateWay, ITER HPC and WEST
- Latest documentation is available on:
 - the GIT repository:
 - .pdf: <u>https://git.iter.org/projects/VIS/repos/viz/browse/doc/IMASViz.pdf</u>
 - .zip containing .html documentation (open index.html file in web browser): <u>https://git.iter.org/projects/VIS/repos/viz/browse/doc/IMASViz_documentation_html.zip</u>
 - PSNC webpage: <u>https://docs.psnc.pl/display/WFMS/IMASViz+v2</u>

IMASViz key strengths



- GUI reflects the Physics Data Model
- No prior knowledge of signals names required
- Use of IMAS Access Layer and UDA for remote access
- GUI/Scripting: API dedicated to data selection in the PDM and plotting
- Quick data comparison between signals from different /shot/run/machine
- Exportable scripts to other platforms
- Tool available for all laboratories using IMAS/UDA solution
- Design of a plugins mechanism for extending available features

About the tutorial

- Running IMASViz on the GateWay
- Loading shot data
 - Opening several shots, loading IDSs
 - Managing shots windows
- Plotting 1D arrays, comparing shots
- Plot configuration
- Selecting data
- Saving a selection
- Applying a selection on a new shot
- Visualizing 0D and 1D data embedded in time slices
- Using UDA: displaying the magnetics IDS from a JET shot
- Exporting data to a new IMAS pulse file
- Example of using the plugins Equilibrium plugin

Running IMASViz on the GateWay

1. In a new terminal, execute the following command in order to load the

> module load imasenv # or any other specific <u>imasenv</u> module version
 > module switch imas-viz/2.3.0 # A suitable IMASViz module might be already loaded by the <u>imasenv</u> module

1. With the environment set, run the IMASViz by simply typing the following command:

> viz

An empty dialog window will appear

X IMAS_VIZ	(ver	sion 2,3,0)	_ — ×
Local data so	urce	Experiment data source	
User name	g2us	er	
Tokamak			
Shot number			
Run number	0		
		Open	

Note: IMASViz documentation can be accessed by running the command > viz-doc

- 1. The Local data source tab should be selected (default on IMASViz run).
- 2. In the text boxes set:
 - a. User name: g2dpc
 - b. Tokamak: aug
 - c. Shot number: 36440
 - d. Run number: 1
- 3. Press **Open** button

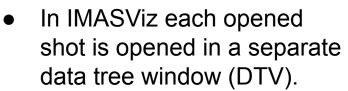
An empty data tree view (DTV) window will appear (see next slide).

X IMAS_VIZ	(version 2.3.0)	_ — ×
Local data so	urce Experiment data source	
User name	g2dpc	
Tokamak	aug	
Shot number	36440	
Run number	1	
-		
	Open	



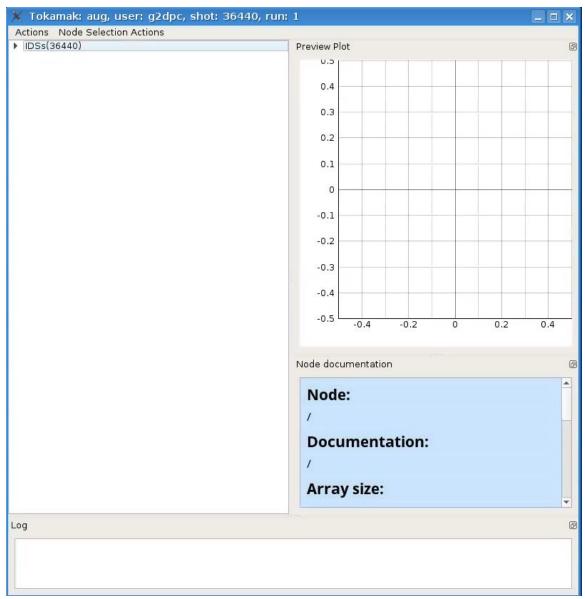
GUI overview: Data Tree View (DTV)





- The main components are:
 - Menu bar (on top)
 - Data tree browser (left)
 - Preview Plot widget (top right)
 - Node Documentation widget (bottom right)
 - Log window (bottom)

NOTE: closing the window with the cross button only hides the DTV. Deleting DTV can be performed (see next slide)





Right clicking on the main GUI tab allows you to show/hide or delete a shot window

X IMAS_VIZ	(ver	sion 2.	3.0)			
Local data so	urce	Experi	ment data sou	rce		
User name	g2dp	2				
Tokamak	aug					
Shot number	36440)				
Run number	1					
Show/Hid	de	Þ	Views	•	Shot:36440 Run:1 Tokamak:aug User:g2dpd	
💼 Delete		•				
				Open		

Opening IDSs



In the DTV, filled IDSs are marked by blue color.

To open an IDS (in this case **nbi IDS**):

- 1. In the DTV, right click on the **nbi**
- In the available selection, select the wanted occurrence (in our case Occurrence 0) (note: same can be achieved by double clicking on the IDS label)

Reading the IDS might take a few seconds, depending on the size of the contents found in the IDS.

 Click on the arrow beside the **nbi** label. The IDS tree structure will be shown

ne Get nbi data for occurrence 🔰	Occurrence 0
ntms pellets	Occurrence 1
penets pf active	Occurrence 2
pf_passive	Occurrence 3
polarimeter pulse_schedule	Occurrence 4
	Occurrence 5
	Occurrence 6
	Occurrence 7
	Occurrence 8
	Occurrence 9

nbi	
▼ 00	currence 0
•	ids_properties
	Array of unit with 8 element(s)
	code
•	time [s] (flt_1d_type)
neutr	on diagnostic

Navigating through database

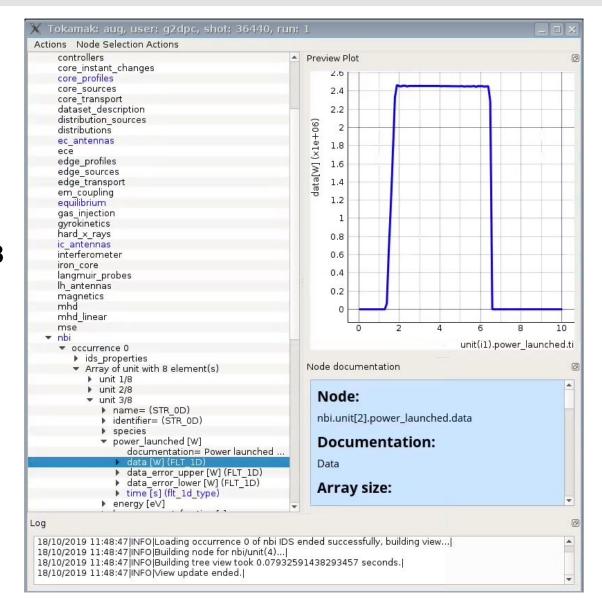
The tree view allows navigating through the database.

1. Navigate to and select:

≻ nbi

- Array of unit with 8 element(s)
- ➤ unit 3/8
- power_launched [W]
- ➤ data [W] (FLT_1D)

A **Preview Plot** will be displayed (top right window) and **Node Documentation** will be populated, displaying some basic info.



Plotting 1D arrays



To create a basic plot:

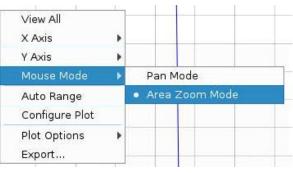
1. Right click on data [W] (FLT_1D)

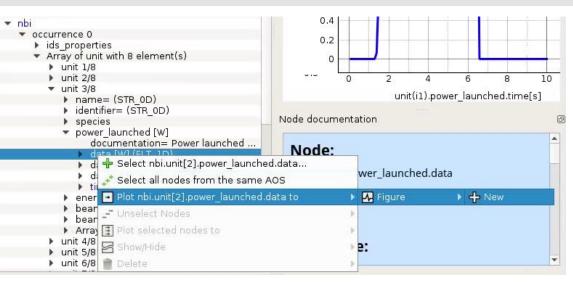
Plottable data is marked by blue color.

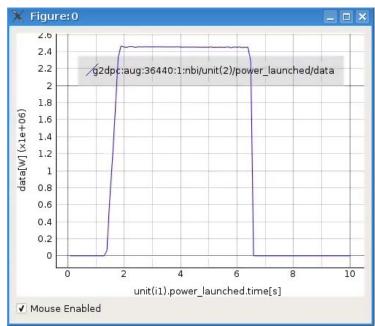
- 2. In the open menu select:
 - Plot nbi.unit[2].power_launched.data to
 - ➤ Figure
 - ≻ New

A new window with the plotted data will be shown.

NOTE: Right clicking within the plot window displays a menu from which many available features for plot analysis such as setting the mouse button mode to **Zoom to area**, exporting the plot to matplotlib window etc.







Plotting data to existing figure

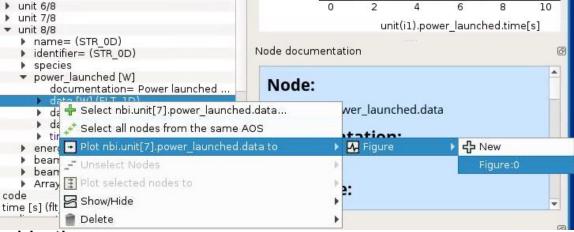


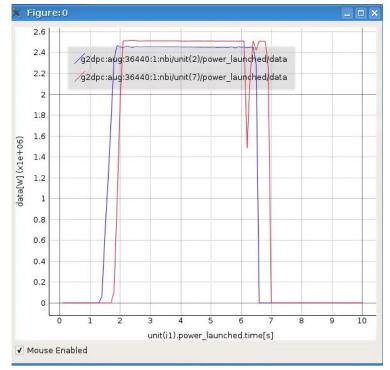
IMASViz allows adding plots to already existing plots.

Example:

- In DTV, navigate to nbi.unit[7].
 power_launched.
 data...
- 2. Right click on the node and in the open menu select:
 - Plot nbi.unit[7]. power_launched.data to
 - ➤ Figure
 - ➤ Figure:0

The plot will be added to the previous plot window.





Manually selecting multiple data



IMASViz allows selecting multiple data at once. Selected data is marked by red color.

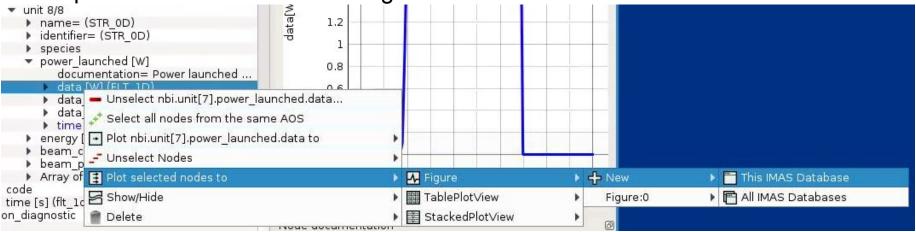
- 1. Right click on the **nbi.unit[2].power_launched.data**
- 2. Select Select nbi.unit[2].power_launched.data...
- 3. Navigate to
 - ≻ unit 8/8
 - > power_launched [W]
 - ➤ data [W] (FLT_1D)
- 4. Select Select

nbi.unit[7].power_launched.data...

<pre> nbi occurrence 0 ids_properties Array of unit with 8 element(s) unit 1/8 unit 2/8 unit 3/8 name= (STR_0D) identifier= (STR_0D) identifier= (STR_0D) species power_launched [W] documentation= Power launched data [W] (FLT_1D) </pre>	1.8 1.6 1.4 1.2 1 0.8 0.6 0.4
 data data data data Select all nodes from the same AO energy [Plot nbi.unit[2].power_launched.dat beam_c beam_c Array of unit 4/8 unit 5/8 unit 7/8 	S
 power_launched [W] documentation= Power launched data [W] (FLT_1D) data_error_upper [W] (FLT_1D) data_error_lower [W] (FLT_1D) time [s] (flt_1d_type) 	d
 unit 8/8 name= (STR_0D) identifier= (STR_0D) species power_launched [W] documentation= Power launched data [W] (FLT_1D) 	0.4 0.2 0
 d Select nbi.unit[7].power_launched.da tin ener Plot nbi.unit[7].power_launched.data bean bean Code time [s] (flt Show/Hide neutron_diagnost Delete 	



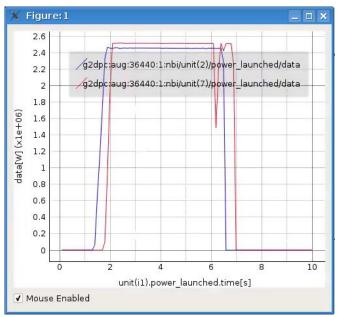
To plot the data from selected signals:



- 1. Right click on one of the selected signals (marked by red color)
- 2. Select:
 - Plot selected nodes to
 - ➤ Figure
 - ≻ New
 - This IMAS Database

A new plot containing both signal data will be shown.

NOTE: when plotting on figures, IMASViz check that data share the same coordinates and the same units, otherwise the plot cannot be performed. This note concerns only figures, not stacked or table plots since data are not sharing plot axis for such plots.



Unselecting signals (1)



To unselect the wanted selected signals:

- 1. In DTV Navigate to the signal
- 2. Right click on signal
- 3. In popup menu select

Unselect <signal_label> ...

 power_laun docume 	ched [W] ntation= Power launched	0.8	
🔹 🕨 data [W]	(FLT 1D)	0.6	
	🗕 Unselect nbi.unit[7].power_la	unched.data	
data_err time [s]		me AOS	
energy [eV]] F Plot nbi.unit[7].power launch	ed.data to	•
 beam_curre beam_powe 	e 🚅 Unselect Nodes		•
Array of be:	a 📑 Plot selected nodes to		•
le e [s] (flt_1d_ty	n 🔄 Show/Hide		▶1
diagnostic	💼 Delete		•

This will unselect the wanted signal.



To unselect **all** signals in the current database either:

- 1. Right click on any signal and select
 - Unselect Nodes
 This IMAS Database
 OR
- 2. in the menu bar select:
- Node Selection Actions
- unselect All Signals
- ➤ All IMAS Databases

data [W] (FLT 1D)	0.6
data — Unselect nbi.unit[7].power_launch	ned.data
 data time Select all nodes from the same A 	os
energy 🛛 🛨 Plot nbi.unit[7].power_launched.d	ata to
peam_c 🚅 Unselect Nodes	🕨 🛅 This IMAS Database
Array of 耳 Plot selected nodes to	🕨 🛅 All IMAS Databases
] (flt_1c Show/Hide	unit(i1).power_launched.time[s
nostic 💼 Delete	•

Actions	Node Selection Actions					
	Save Node Selection	cl	hed 🔺	Preview Plot		
	Display Node(s) selection	D)		2.6		
	Unselect All Nodes	×.	This IM	AS Database		
	Flot selected nodes to	•	All IMA:	S Databases		

This will unselect all signals selected in current database (DTV window).

Selecting all data in the AOS (Array of Structures)

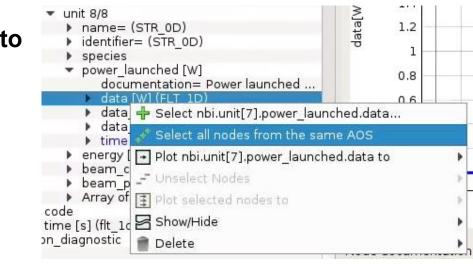


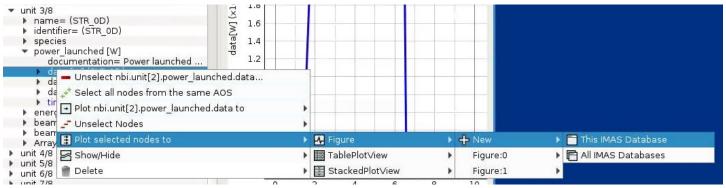
IMASViz allows selecting all data found in the AOS at once:

- 1. Right click on any **nbi.unit[:].power_launched.data**
- 2. Select Select all nodes from the same AOS
- In order to plot the selection, same as before, right click on any nbi.unit[:].power_launched.data again

4. Select:

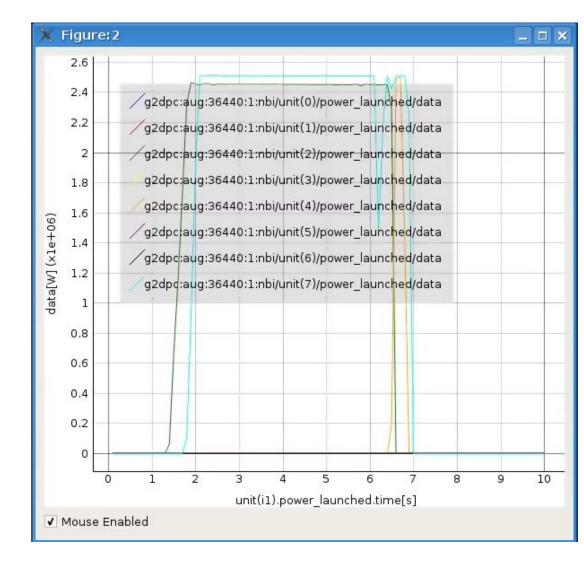
- a. Plot selected nodes to
- b. Figure
- c. New
- d. This IMAS Database







The result of plotting all **nbi.unit[:].power_launched. data** is shown on the right figure.



IMASViz enables some of the plot configuration features (not provided by PyQtgraph library).

- 1. Right click anywhere inside the plot
- 2. Select Configure plot

A Plot Configuration User Interface will be shown

View All	
X Axis	-
Y Axis	-
Mouse Mode	•
Auto Range	
Configure Plot	
Plot Options	•
Export	30

Line Properties	Text properties	s Plot Design	Propert	ies						
ine	Color	Style		Thickness		Symbol		Symbol Size	Symbol Colo	r Symbol Outline Colo
2		Solid Line	•	1.00	*	None	*	10.00		
Z		Solid Line	•	1.00	*	None	•	10.00	•	
2		Solid Line	•	1.00	*	None	*	10.00	•	
		Solid Line	*	1.00	*	None	*	10.00	•	
<u>/</u>		Solid Line	•	1.00	-	None	*	10.00	•	
		Solid Line	•	1.00	*	None	*	10.00	•	
		Solid Line	•	1.00	*	None	•	10.00	•	
7		Solid Line	*	1.00	-	None	*	10.00	:	

Plot configuration: Example



2.6				Line Proper	ties Text prope	erties	Plot D	esig	gn Properties						
2.4	ſ		g2dpc:aug:3644	Line Color	Style		Thicknes	is S	Symbol		Symbol	Size	Symbol Color S	Symbol Outline	e Co
2.2		• •	g2dpc:aug:3644		Solid Line	•	1.00	+	None	•	10.00	-			
2			g2dpc:aug:3644		Solid Line	•	1.00	•	None	•	10.00	\$			
1.8			g2dpc:aug:3644		Solid Line	-	5.00	4	None	•	10.00	\$			
1.6		•	g2dpc:aug:3644		Solid Line	•	1.00	•	None	•	10.00	4			
1.4			g2dpc:aug:3644		Solid Line			-	None	•	10.00	\$			
1.2			g2dpc:aug:3644		Solid Line				None	-	10.00	\$		E.	
0.8	1		• g2dpc:aug:3644)		Solid Line		1	Line L	None	-	10.00	\$			
0.6	4				Solid Line		1	1		-	10.00	1			
0.4								-		_					
0.2	•														
00											_			OK Car	ance
0 1	2 3 4 5 unit(i1).power laun	6 7	8 9 10												

Note: a menu is available when right-clicking on a plot (including subplot) for:

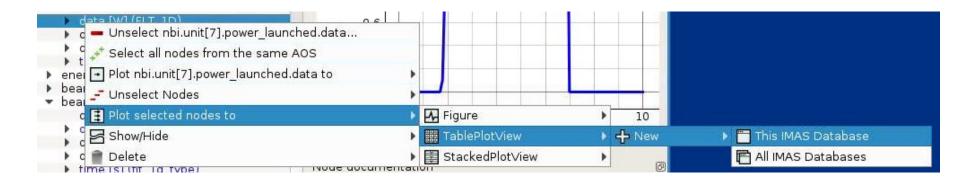
- zooming
- executing filters on the data
- exporting plot to different formats
- ...

View All						
X Axis	•	-				+
Y Axis	Þ					
Mouse Mode	Þ	P	an Mo	de		
Auto Range Configure Plot		• A	rea Zo	om	Mode	
Plot Options	۶					
Export						



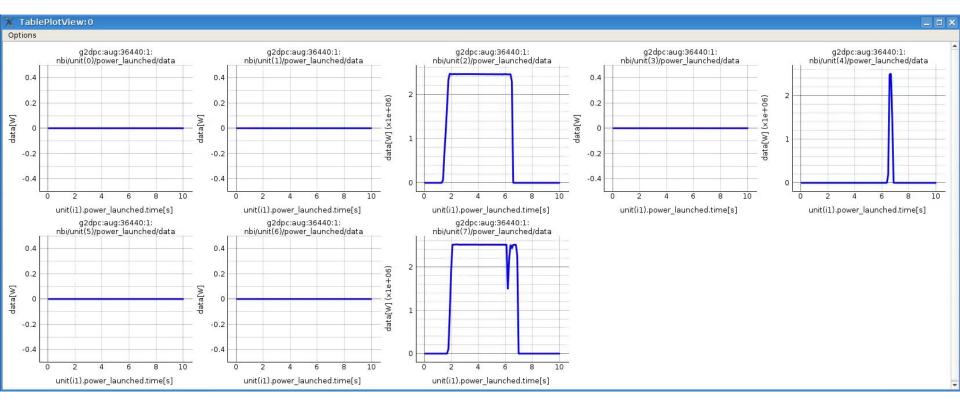
IMASViz provides few features that allow plotting each signal from a selection to its own plot view window. With the selection ready:

- 1. Right-click on any signal (node)
- 2. In the popup menu, navigate to:
 - Plot Selected Nodes to
 - TablePlotView OR StackedPlotView
 - ≻ New
 - This IMAS database



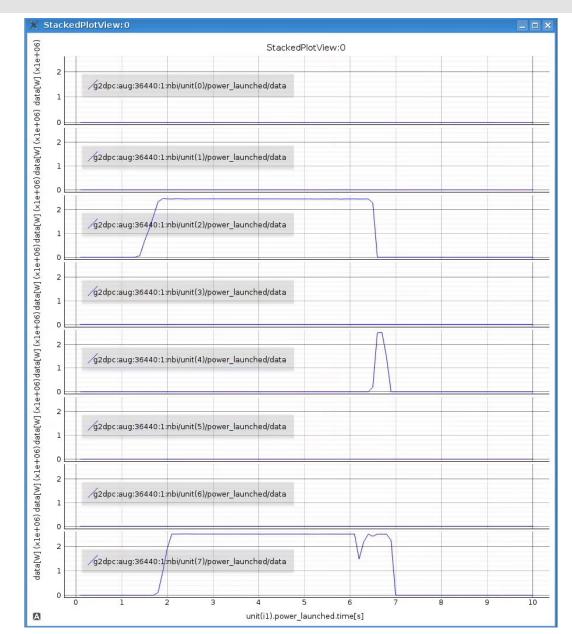
Plotting a selection: Multiplot (2) - Table Plot View





Plotting a selection: Multiplot (3) - Stacked Plot View





Saving a selection



IMASViz allows saving the signal selection and then applying it to another shot.

- 1. In the menu bar, navigate to and select:
 - Node Selection Actions
 - Save Node Selection
- 2. A dialog window will be shown. There a configuration label can be specified. Leave it empty for now.
- 3. Press OK.

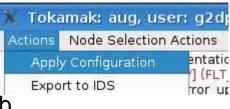
Actions	Node Selection Actions						
	Save Node Selection	ched 🔺 Pr					
	Display Node(s) selection Unselect All Nodes	D)					
	Flot selected nodes to	•					

🗙 Dialo	og	? X
Note. If I	eft empty the lection-18-10	configuration. default name -2019
	ОК	Cancel



To apply the saved selection to a new shot:

- 1. Bring up the IMASViz initial window
- 2. In the text boxes set new values:
 - a. User name: g2dpc
 - b. Tokamak: aug
 - c. Shot number: 36440
 - d. <u>Run number: 4</u>
- 3. Press **Open** button
- Local data source Experiment data source
 User name g2dpc
 Tokamak aug
 Shot number 36440
 Run number 4
 Open
- A new DTV window will appear. There:
- 4. In menu bar navigate to:
 - > Actions
 - Apply Configuration
- 5. In the open window select tab Available Node Selection Configurations
- From the list select the configuration name (if default label was used it should be <u>signalSelection-<day>-10-2019.lsp</u>)
- 7. Press button Apply Node Selection...



ot Configurations	Available Node Selection Configurations	4
111.lsp innsbruck.lsp magnetics_flux_0-: mgno1.lsp mgn_0_1_3.lsp	-13.lsp	
signalSelection-15 signalSelection-18		
signalSelection-20 signalSelection.lsp test.lsp		
test2.lsp	ection Configuration to current IMAS databa	se
	ction Configuration to current IMAS databa	as

_ 🗆 🗙

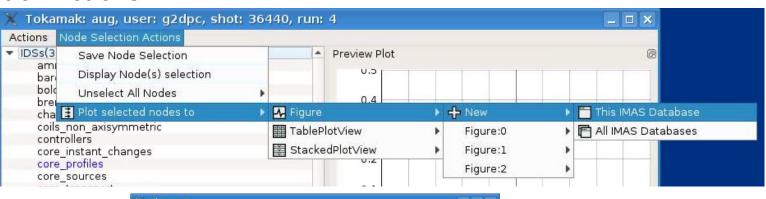


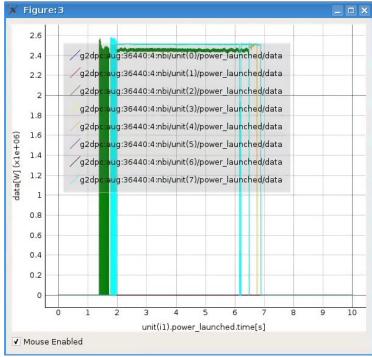
To plot the selected data (no navigation required), in the menu bar select:

Node Selection Actions



- ≻ New
- This IMAS Database







Selections from 36440/4 can be added to existing plot containing data from 36440/1 shot.

In menu bar, navigate to:

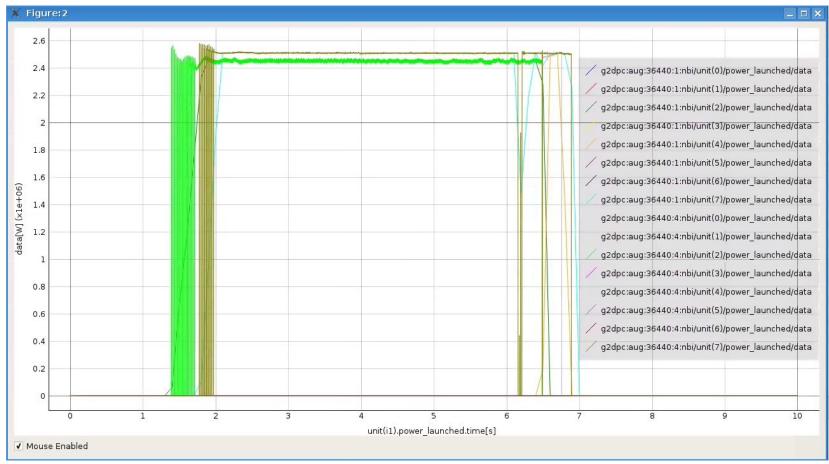
- Node Selection Actions
- Plot selected nodes to
- ➤ Figure
- ➤ Figure:2
- This IMAS Database

🕻 Tokamak: aug, user: g2dpc, shot: 36440, run: 4 📃 🗖						
Actions Node Selection Actions						
 IDSs(3 Save Node Selection ami bar Display Node(s) selection Unselect All Nodes 		Preview Plot				
cha 茸 Plot selected nodes to	Figure		▶ 2	分 New	•	
coils_non_axisymmetric controllers core instant changes	TablePl	Plot∨iew edPlot∨iew	*	Figure:0 Figure:1	*	
core_profiles core sources	Jucke	0.2		Figure:2	•	This IMAS Database
core_transport		0.1		Figure:3	• 🗖 /	All IMAS Databases

Comparing shots (2)



The Figure:2 will get updated with the added plots from the 36440/4 case.



Note: With signals selected in 36440/1 and 36440/4 DTV, the same could be achieved by using (from the menu bar): Node Selection Actions -> Plot selected nodes to -> Figure -> New -> All IMAS Databases



If needed, the plot and the corresponding data can be exported:

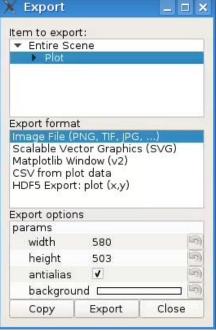
- plot to image,
- plot to .SVG format,
- plot to matplotlib window, and
- plot data to CSV or HDF5 format.

This feature is accessible by

- 1. Right clicking inside the plot window
- 2. In the popup menu, select **Export** ...

A new dialog window will be shown.

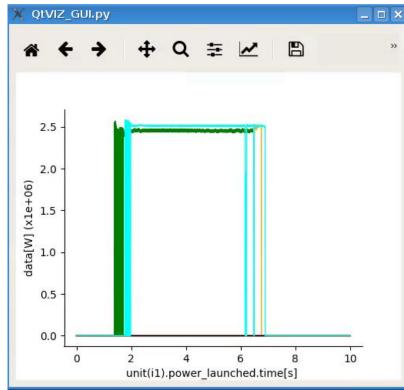


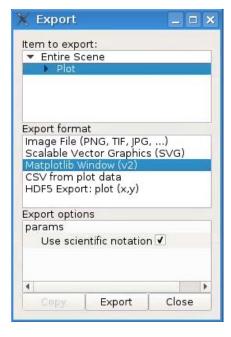


Plot Export Feature (2)

- 3. In the Export dialog window select Matplotlib Window (v2)
- 4. Click Export button

The same plot will then be shown using **Matplotlib**. This way also Matplotlib built-in features can be used on the same data.





Plotting 1D data embedded in time slices (1)



In opened 36440/1 case DTV window:

- 1. Open equilibrium IDS
- 2. In tree view navigate to
 - > equilibrium
 - > Occurrence 0
 - Array of time_slice with 73 elements
 - ➤ time_slice 1/73
 - profiles_1d
 - ➤ f [T.m] (FLT_1D)
- 3. Right click on the node and select **Plot as function of time**

X Tokamak: aug, user: g2dpc, shot: 36440, run: 1 Actions Node Selection Actions	
distributions	 Preview Plot
ec antennas	 Preview Plot
ece	E E
edge_profiles	-4.123
edge_sources	estrar s
edge_transport	
em_coupling ▼ equilibrium	-4.124
▼ occurrence 0	
ids_properties	
vacuum_toroidal_field	-4.125
 Array of time_slice with 73 element(s) 	
✓ time_slice 1/73 ▶ boundary	
 boundary_separatrix 	-4.126
constraints	
global_quantities	-4.127
▼ profiles_1d	E4.127
documentation= Equilibrium profiles (1D r psi [Wb] (FLT 1D)	Ē
<pre>psi(wb)(FLT_1D) psi_error_upper [Wb] (FLT_1D)</pre>	-4.128
<pre>psi_error lower [Wb] (FLT 1D)</pre>	
phi [Wb] (FLT_1D)	
phi_error_upper [Wb] (FLT_1D)	-4.129
phi_error_lower [Wb] (FLT_1D)	
 pressure [Pa] (FLT_1D) pressure_error_upper [Pa] (FLT_1D) 	
<pre>pressure_error lower [Pa] (FLT 1D)</pre>	-2
	- 16
🖡 🕂 Select equilibrium.time_slice[0].profiles	s_1d.t
f Select all nodes from the same AOS	
🕨 🔂 💽 Plot as function of time	
d 🕞 Plot equilibrium.time_slice[0].profiles_1	.d.fto 🕨
Unselect Nodes	
Plot selected nodes to	3
5 Show/Hide	•
Delete	,



In the opened plot window the **time slider** on the bottom can be moved and the plot will update accordingly.

Figure: 10 _ 🗆 × -4.13 g2dpc:aug:36440:1:equilibrium/time_slice(10)/profiles_ld/f -4.14 -4.15 [T.m] -4.16 -4.17 -4.18 -4.19 -0.8 -0.6 -0.4 -0.2 0 -1.2 -1 0.2 equilibrium/time_slice(10)/profiles_1d/psi ✓ Mouse Enabled Time Slider Index Value: 10 Time: 1.2999999523162842 [s]

NOTE: The X-axis corresponds to **coordinate1**, in this case **psi** found under **equilibrium/time_slice(<time index>)/profiles_1d/psi**.

÷	pressure_error_lower [Pa] (FLT_1D) [T.m] (FLT_1D)
	coordinate1=time slice[itime].profiles 1d.psi
	documentation= Diamagnetic function (F=R B_Phi) name=equilibrium.time_slice[0].profiles_ld.f (STR_0D)
▶ f	error upper [T.m] (FLT 1D)



+ New

Ð

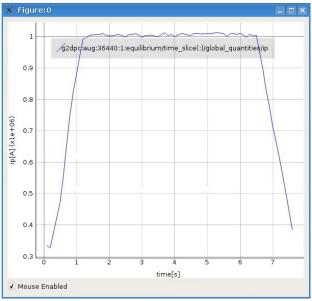
Figure:0

In opened 36440/1 case DTV window:

- 1. Open equilibrium IDS
- 2. In tree view navigate to
 - ➤ equilibrium
 - Occurrence 0
 - Array of time_slice with 73 elements
 beta normal error lower=-9e+40...
 - time_slice 1/73
 - ➤ global_quantities
 - ≻ ip

🕂 Select equilibrium.time_slice[0].global_quantities.ip... ip erro ip errol 💽 Plot equilibrium time_slice[0].global_quantities.ip to 🗛 Figure i 3=-9 ▶ li 3 err 4 5 6 li 3 err 😨 Plot selected nodes to time[s] volume Show/Hide volume volume Delete K Figure: 0

Right click on the node and select **Plot as function of time**.



Using UDA: UDA requirements for IMASViz on the Gateway



TCV, AUG and WEST requires a configuration file for enabling the UDA connection. The file should be located in your home directory. However UDA JET access is public, nothing to set.

Accessing TCV

You have to provide a file '.exp2imas' with the following content in a single line:

TCV username password

The file should be located in your home directory (filename='.exp2imas', do not forget the dot !).

Accessing AUG

You have to provide a file '.exp2imas' with the following content in a single line:

AUG username password

The file should be located in your home directory (filename='.exp2imas', do not forget the dot !).

Accessing WEST

You have to provide a file '.west_tunnel ' with the following content in a single line:

WEST username password

The file should be located in your home directory (e.g. filename='.west_tunnel', do not forget the dot !). 31/10/2019 | Page 34

IMPORTANT: For the UDA to work, ~/logs/uda directory must exist! On the GW this can be done with:

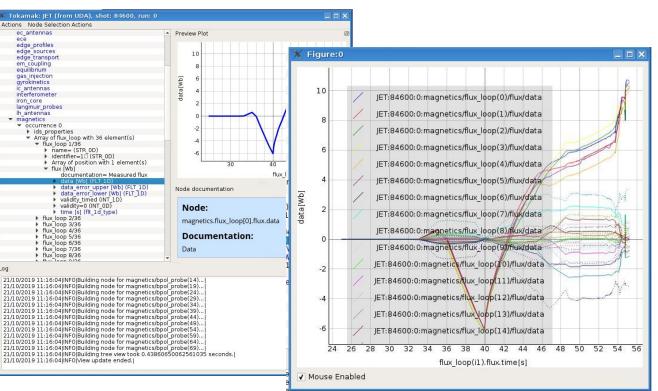
> cd \$HOME
> mkdir logs
> cd logs
> mkdir uda

Using UDA: displaying the magnetics IDS from a JET shot



- Select tab 'Experiment data source' from the main GUI
- 2. Fill the fields according to the picture (shot 84600 from JET)
- Click open (takes a few seconds to load data)
- 4. Load the magnetics IDS
- Right click on one flux_loop and execute 'Select all nodes from the same AOS'
- 6. Plot all selected nodes to a new figure.

Local data sourc	Experiment data source	
Shot number	84600	
Run number	0	
Unified Data Access	JET	•





To export the opened IDSs from the DTV to a new local IMAS pulse files:

- 1. In the menu bar navigate to
 - > Actions
 - Export to IDS
- In the opened window set the database parameters (Note that the Database must exist!)

🗙 Toka	amak: aug, user:
Actions	Node Selection Acti
Appl	y Configuration
Ехро	ort to IDS

🗙 Export	browsed tree view contents to local ID	?	×
	y IDSs, that are CURRENTLY OPENED in the tree view, will be ke sure the database/machine (created using imasdb comn	1999 - 1999 -	
User:	/		
Database:	/		
Shot:			ĺ
Run:			
	ок		
[Cancel		

1. Press OK

Example of using the plugins – Equilibrium plugin



Tokamak: west, user: g2lfleur, shot: 54178, run: 0 _ 🗆 🗙 Actions Node Selection Actions Open the WEST shot IDSs(54178) . Preview Plot amns data U.J barometry bolometer bremsstrahlung visible . E X charge exchange coils non axisymmetric Local data source Experiment data source controllers core instant changes User name g2lfleur core profiles core sources west Tokamak core transport Shot number 54178 dataset description distribution sources Run number 0 distributions ec antennas ece edge profiles edge sources edge transport em coupling gas_injectio 🕂 Equilibrium overview. gyrokinetics Open ic antennas User g2lfleur Equilibrium Shot 54178 Run 0 Machine west Psi with B0=-3.835 [T] at R0=2.370 [m] 1.3 400 [ky] di 200 0.8 Buo 1.2 0.6 0.4 triang q95 triang up -50 --- q_axis -- triang low 0.2 EN----[MA/m2] -10 Z [m] (+)0.0 EII3 -0.2 1250 -0.4 1 200 [[x] pyuw 0 [u] 2.55 [kPa] -0.6 Р -0.8 0 2.5 2.0 3.0 0.025 R [m] ÷ ₩ 2.50 ₩ 2.45 Time = 38.056514739990234 08-288 Z [m] 0 0.025 σ ā. ¥ 0.000 -1e+05 40 60 0.0 0.6 1.0 50 0.2 0.4 0.8 0.0 0.2 0.4 0.6 0.8 1.0 Time [s] rho tor norm rho tor norm y=0.000427702 x=44.8578 B O 圭 Run Stop Enable Grid Time value to draw (press enter) 48.0

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- 1. (g2lfleur,west,54178,0)
- 2. While keeping the **shift** keyboard button pressed, right-click on the 'equilibrium' IDS
- 3. Select the 'Equilibrium plugin'

The Equilibirum overview plugin window will be shown.

The **slider** on the bottom of the window can be used to show data for different time values.