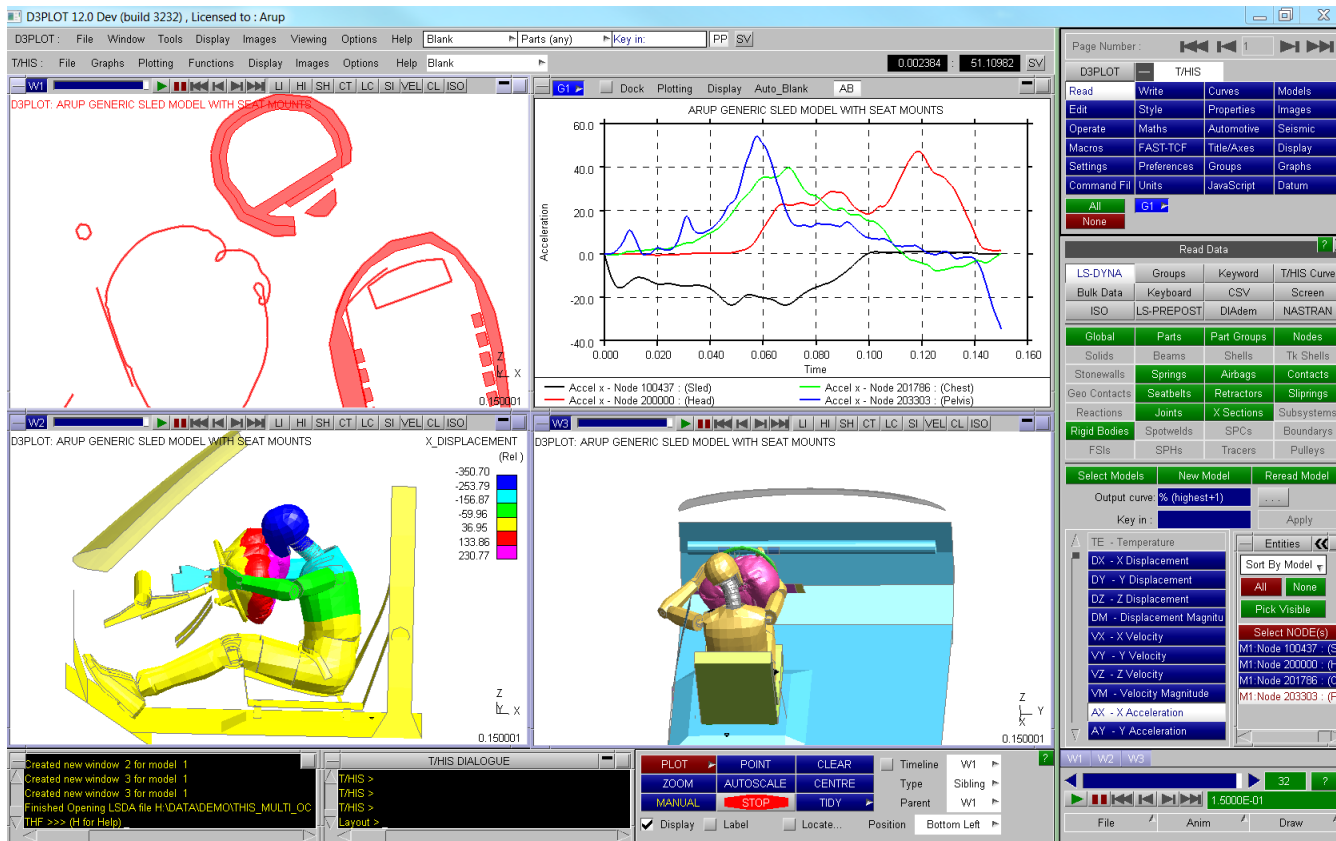


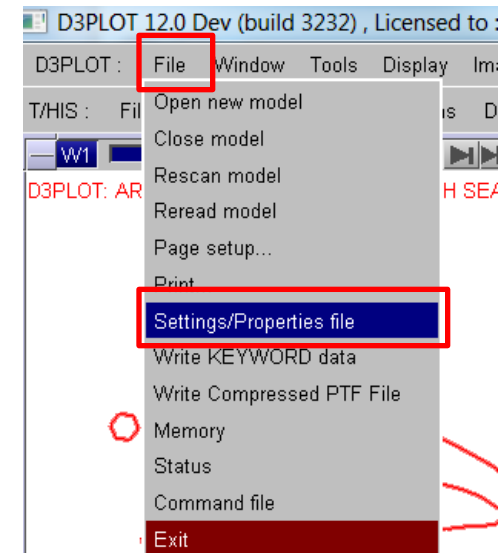
# D3PLOT Tips

# Multiple Models

Q1. A single model has been post-processed. How can the same post-processing be applied to a different single model?



Step 1: Save settings file

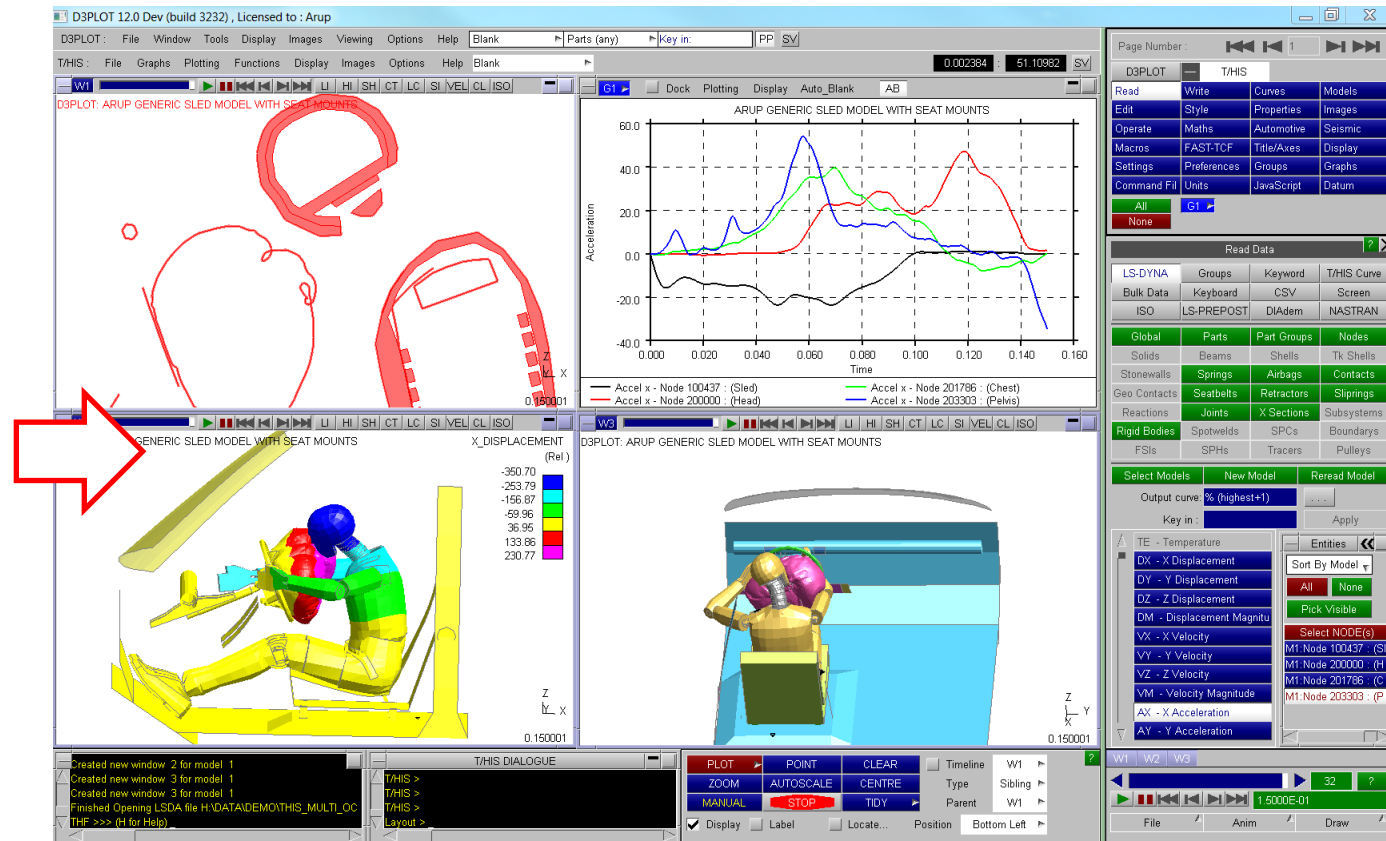


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Q1. A single model has been post-processed. How can the same post-processing be applied to a different single model?

Step 2: Start new D3plot session with a different model

Step 3: Read settings file

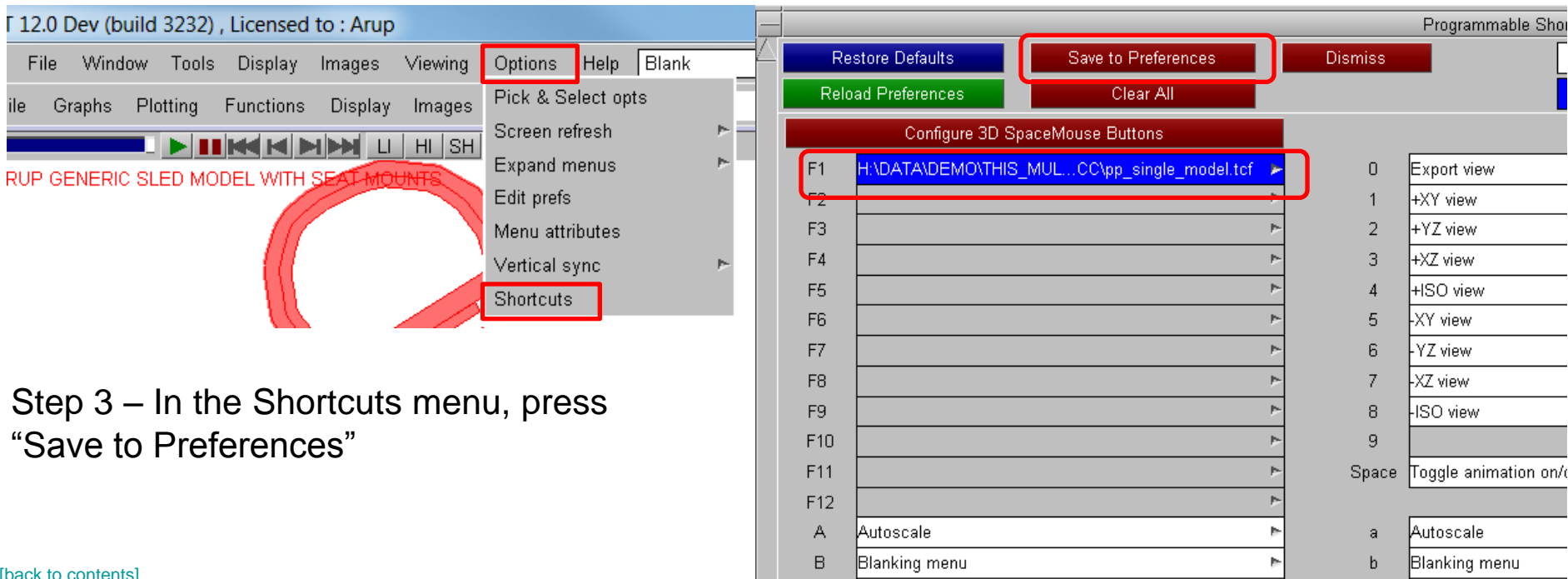


Q2. How can I do that without having to browse for the settings file? Method 1:

Step 1 – Write the dialog box command to read a settings file in a “command file”:

```
/UTILITIES SETTINGS READ H:\DATA\DEMO\THIS_MULTI_OCC\pp_single_model.set
```

Step 2 – Add a new shortcut linking the command file to the F1 key (or you could use any other keyboard key):



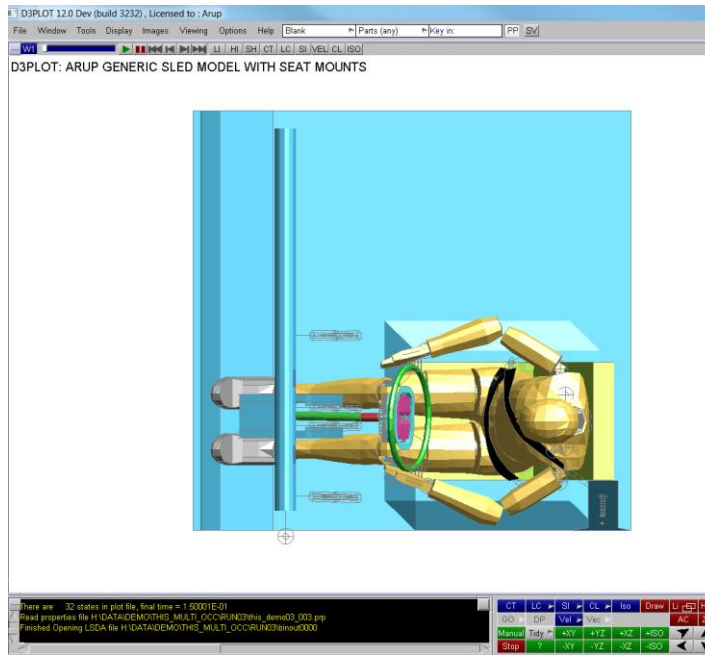
The screenshot shows the Oasys D3PLOT software interface. The 'Options' menu is open, and the 'Shortcuts' option is highlighted. The 'Configure 3D SpaceMouse Buttons' dialog box is open, showing a list of function keys (F1-F12, A, B) and their corresponding actions. The F1 key is assigned the command 'H:\DATA\DEMO\THIS\_MULTI\_OCC\pp\_single\_model.tcf'. The 'Save to Preferences' button is highlighted in the dialog box.

Step 3 – In the Shortcuts menu, press “Save to Preferences”

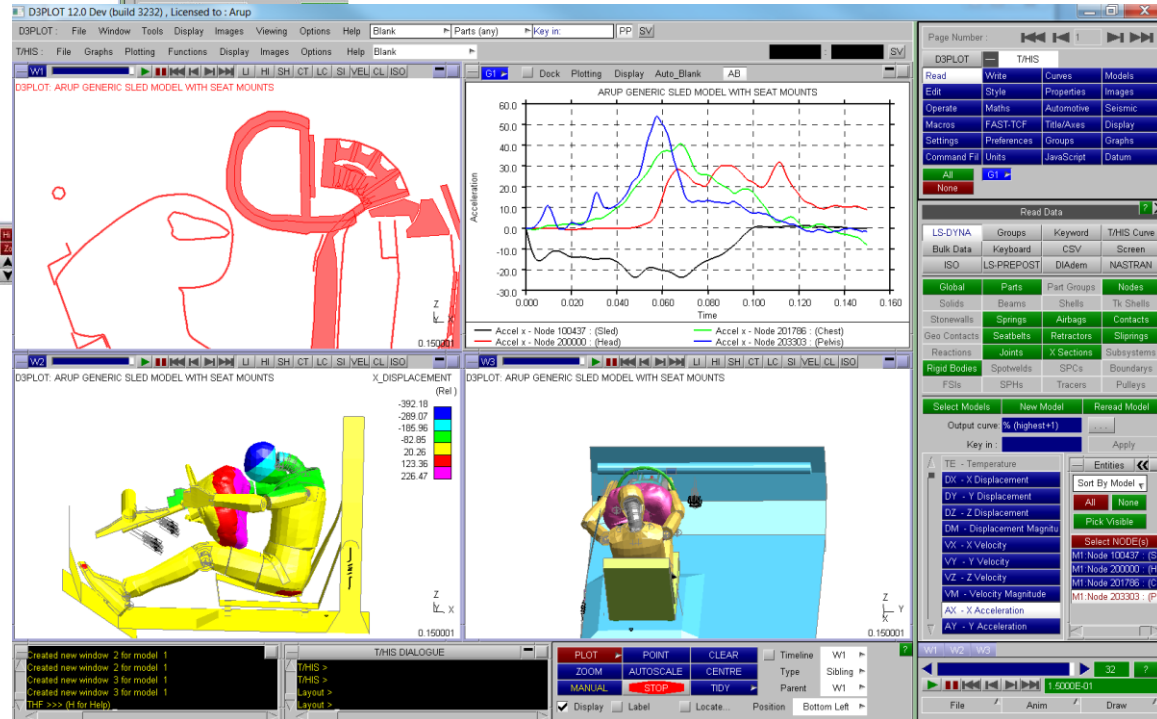
[\[back to contents\]](#)



# Multiple model tips



Step 4 – Open any model, press F1 to apply the settings.



Press F1

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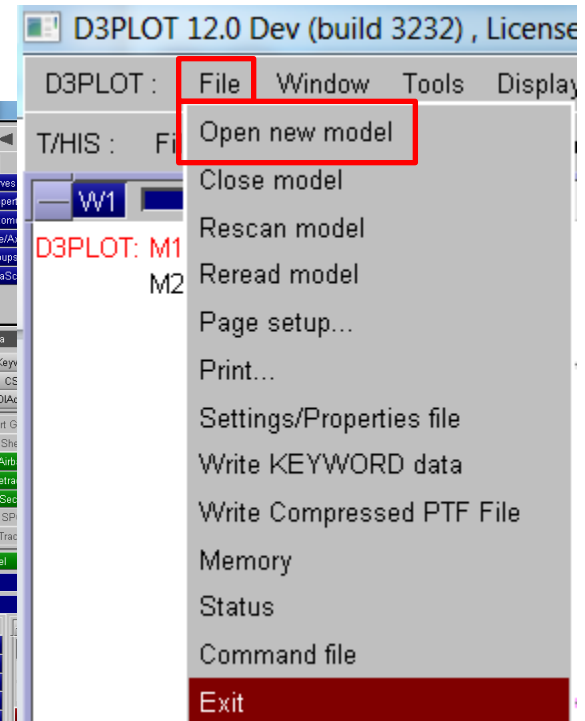
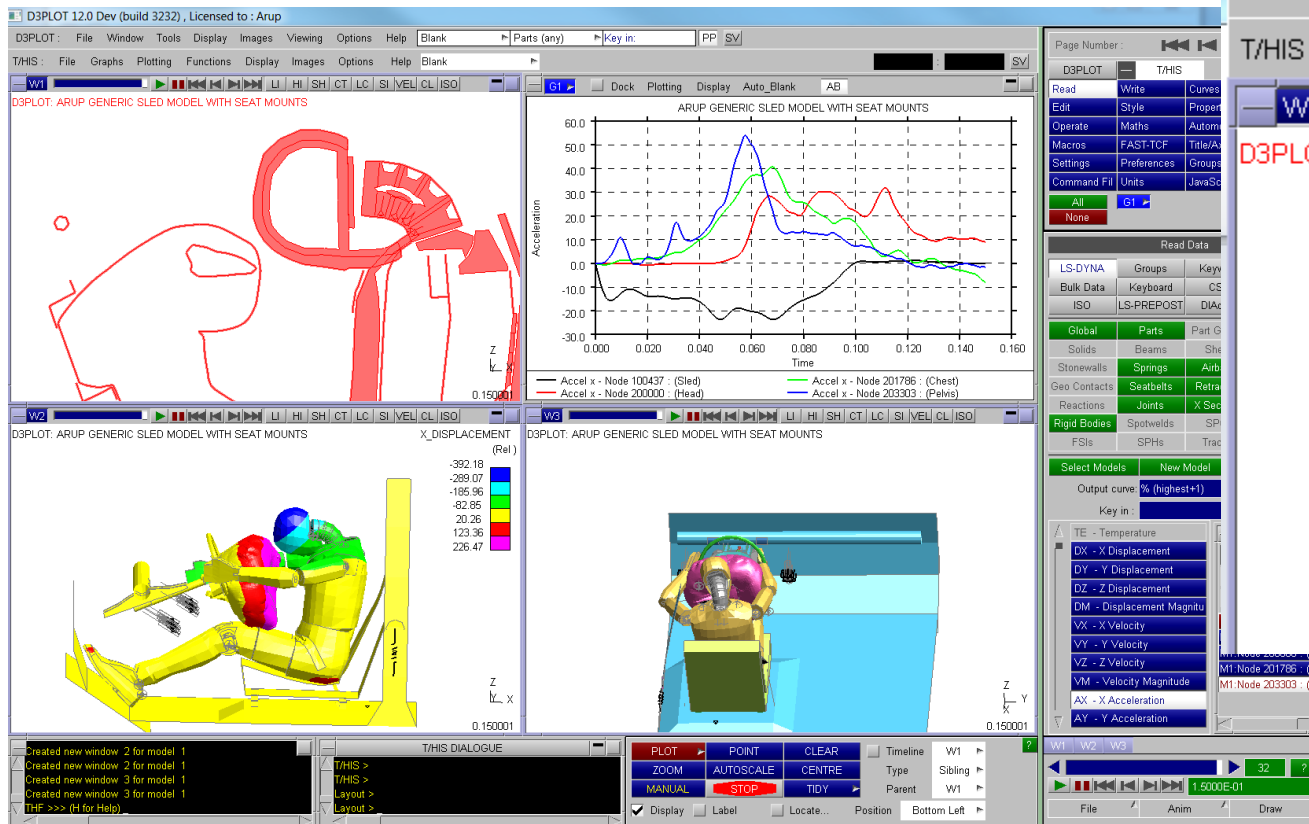
Q2. How can I do that without having to browse for the settings file? Method 2:

Step 1 – Copy the settings file into the folder containing the new model

Step 2 – Open the model. The settings file will be applied automatically.

Q3. A single model has been post-processed. How can I add more models into the same session in order to compare the results?

Step 1: File=>Open New Model

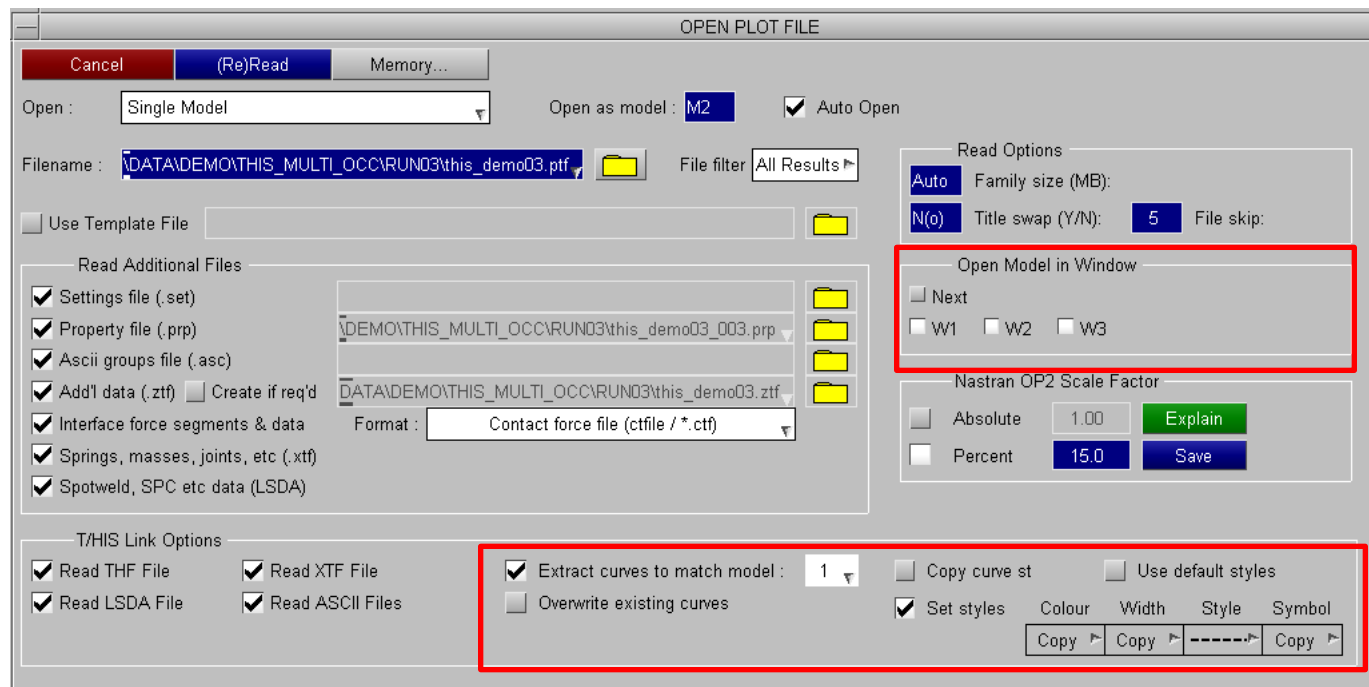


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Q3. A single model has been post-processed. How can I add more models into the same session in order to compare the results?

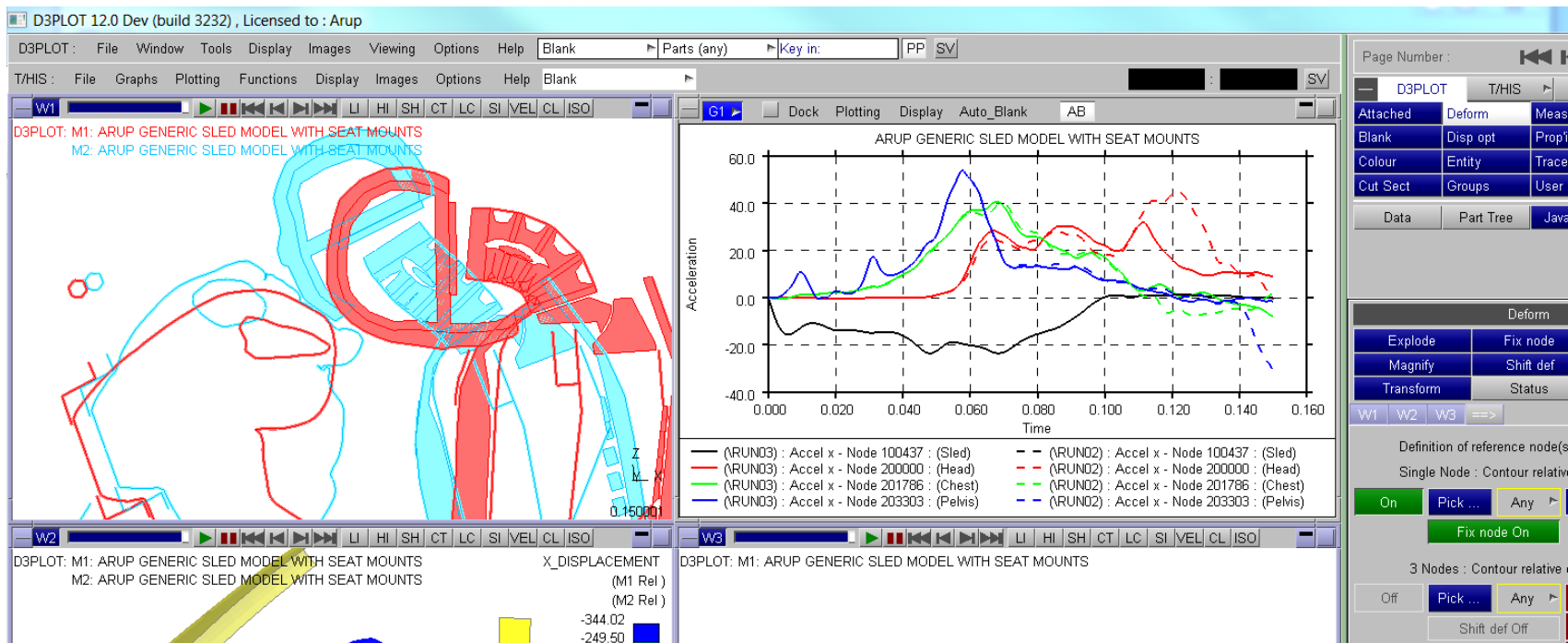
Step 2: BEFORE BROWSING FOR THE MODEL, tell D3PLOT that you want the new model opened in the same windows as the existing model (not in a “next” window), and request T/HIS to make the same curves as for the existing model:



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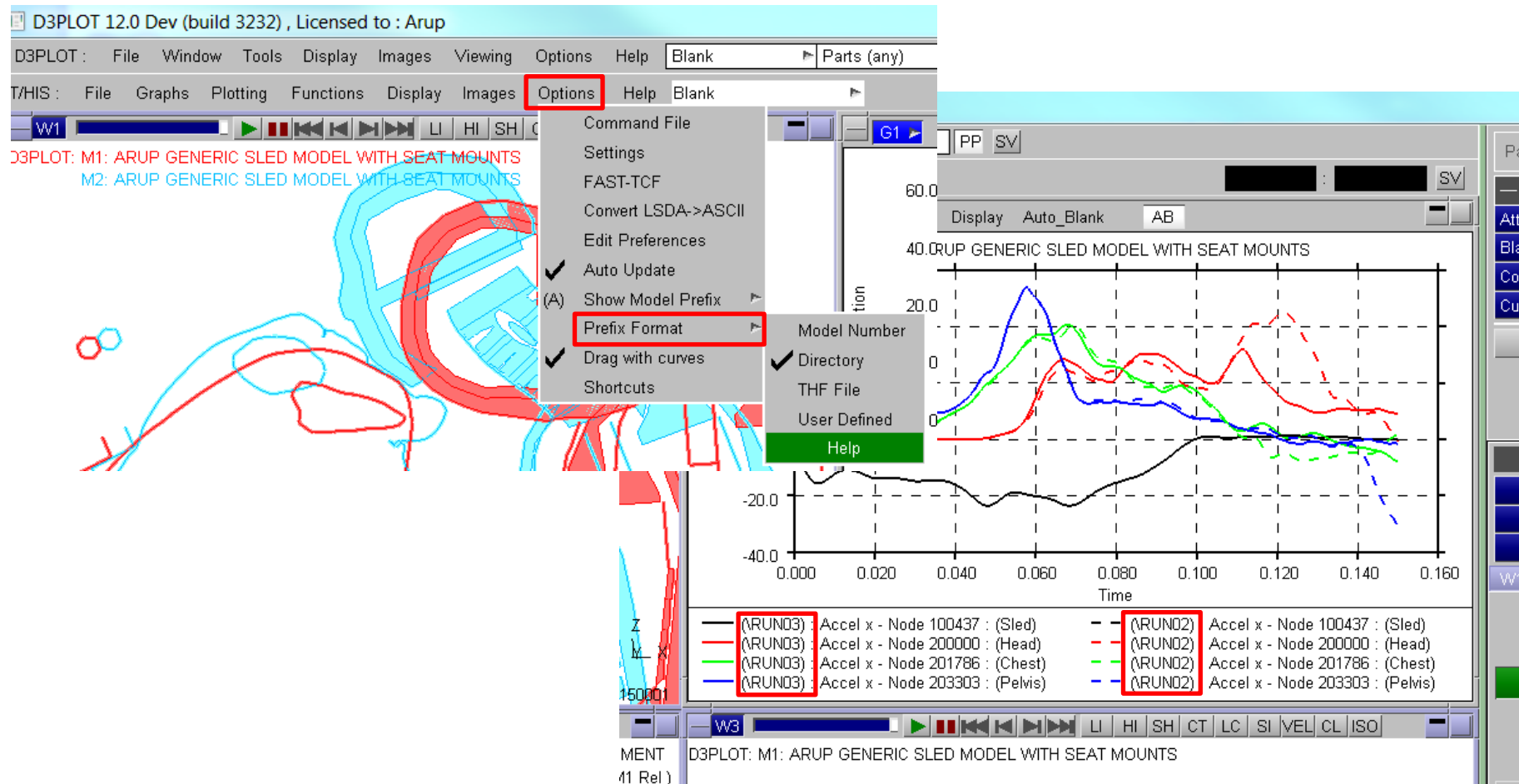
Q3. A single model has been post-processed. How can I add more models into the same session in order to compare the results?

Step 3: Browse to find the new model. D3PLOT automatically generates graphs, and puts the new model in the same windows. You will need to set colour-by-model for the new model. If the views have been changed, re-read the settings file.



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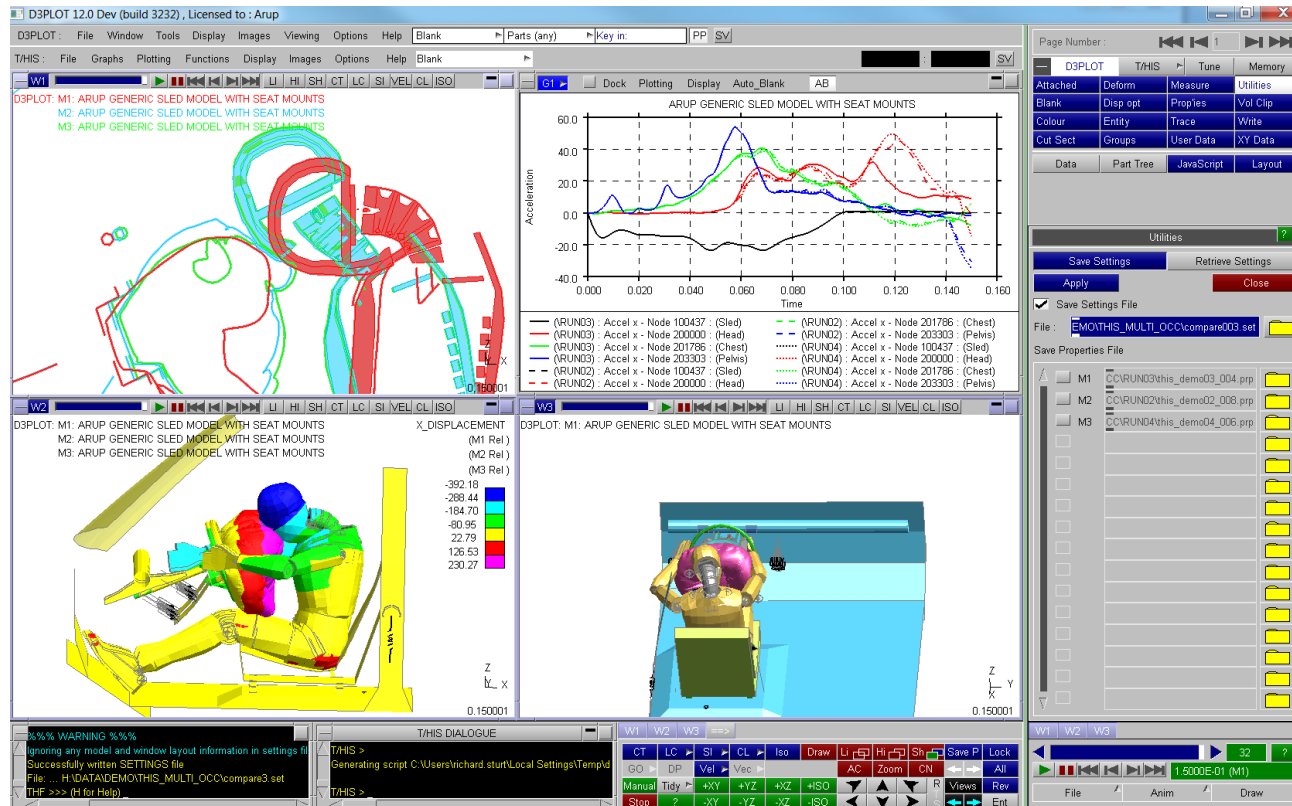
Q4. In graphs of results from multiple models, how do I know which graph is for which model?



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Q5. Is there an easier way to compare multiple models, where the same post-processing is required each time I compare?

Step 1: Post-process multiple models (the maximum number of models that you will want to compare in future). Write a settings file.

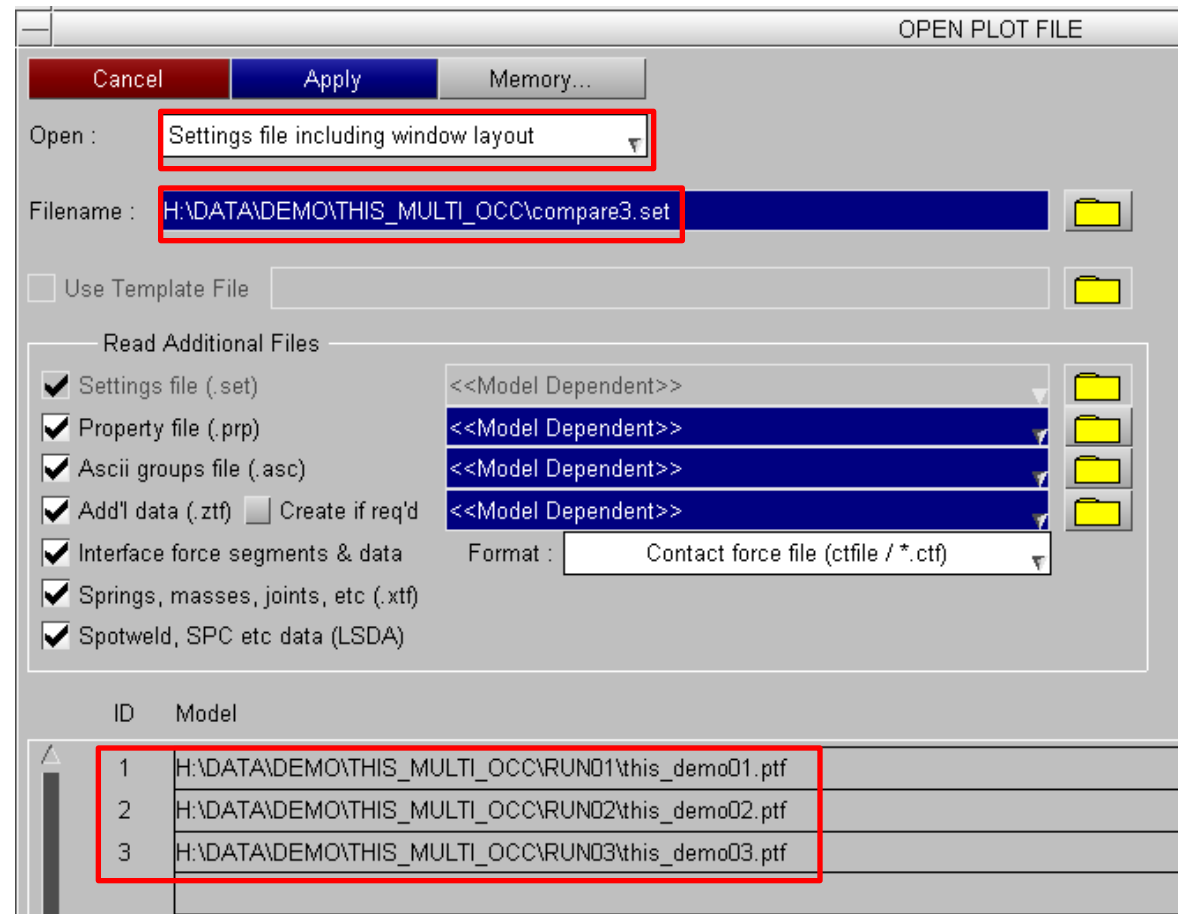


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Q5. Is there an easier way to compare multiple models, where the same post-processing is required each time I compare?

Step 2: When opening a new session of D3PLOT, don't immediately choose a model. Instead, use the option "start from settings file".

The models to be compared can now be selected.



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Q6. How can I tell D3PLOT to make several particular images each time I post-process?

Step 1a – Work in D3PLOT to make the 1st image. Record settings file pic1.set.

Step 1b – Work in D3PLOT to make the 2nd image. Record settings file pic2.set.


Step 1c – Work in D3PLOT to make the 3rd image. Record settings file pic3.set.

Step 2 – In a text editor, create a command file:


```
/UTILITIES SETTINGS READ path\pic1.set  
/image jpeg pic1.jpg  
/UTILITIES SETTINGS READ path\pic2.set  
/image jpeg pic2.jpg  
/UTILITIES SETTINGS READ path\pic3.set  
/image jpeg pic3.jpg
```

Step 3 – Add a new shortcut linking the command file to the F1 key (or you could use any other keyboard key). Save shortcuts to preferences (same as Question 2).

Step 4 – Press F1 to post-process.

- In Version 11.1, there is a bug affecting settings files that can sometimes cause D3PLOT to crash. To work around this bug, we recommend to work in the following order:
  - Open all the D3PLOT windows and arrange their contents.
  - Open T/HIS from within D3PLOT and arrange the graphs 
  - Record settings file.

The bug may occur if you work in this order:

- Open some D3PLOT windows and arrange their contents.
- Open T/HIS from within D3PLOT and arrange the graphs
- Open more D3PLOT windows and arrange their contents.
- Record settings file <= this settings file may be corrupt 

# Model Properties

# Export Model Properties



How can the properties in one model (colour, blanking, transparency, ...) be copied to another?

In this example, 4 similar models have been read into 4 separate windows.

1. Set up blanking, colours, etc in one model.

2. Right-click on the model in the Part Tree, use Export.

The screenshot displays the Oasys D3PLOT software interface. It features four separate windows, each showing a 3D model of a vehicle interior with a driver figure. The top-left window is labeled 'WV1' and the bottom-right window is labeled 'WV4'. A text box in the top-left window states: 'In this example, 4 similar models have been read into 4 separate windows.' A text box in the bottom-left window states: '1. Set up blanking, colours, etc in one model.' A text box in the bottom-right window states: '2. Right-click on the model in the Part Tree, use Export.' The right side of the interface shows the 'D3PLOT' menu with options like 'Blank', 'Deform', 'Measure', 'Utilities', 'Coarsen', 'Disp opt', 'Prop'ies', 'Vol Clip', 'Colour', 'Entity', 'Trace no', 'Write', 'Cut Sect', 'Groups', 'User Data', and 'XY Data'. Below this is the 'Part Tree' panel with a list of models: 'M1 (A)', 'M2 (AR)', 'M3 (AR)', and 'M4 (AR)'. A right-click context menu is open over 'M1 (A)', showing options like 'Blank', 'Unblank', 'Only', 'Find', 'Opts', 'Type', 'Include', 'Assembly', 'Refresh', 'Clear', 'Sel all', and 'Select'. The 'Export...' option is highlighted in red, and a sub-menu is visible with options like 'All Properties', 'Blanking', 'Display Mode', 'Colour', 'Transparency', 'Lighting', 'Overlay', and 'Explain this'.

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# Export Model Properties

File Window Tools Display Images Viewing Options Blank Parts (any) Key in: D3PLOT T/HIS Memory

W1

MAXIMISE  
MINIMISE  
RAISE  
LOWER  
SAVE->BITMAP  
Edit Window  
=> Full Size  
Export View  
Delete Window

Note that the view is a property of a window, not of a model, therefore it cannot be exported from the Part Tree.

To make the views the same across all windows – right-click on square in top-left corner, “Export view”

A new alternative is to use shortcut 0 (zero key), when the mouse is in the window that has the “correct” view.

W2 W3 W4

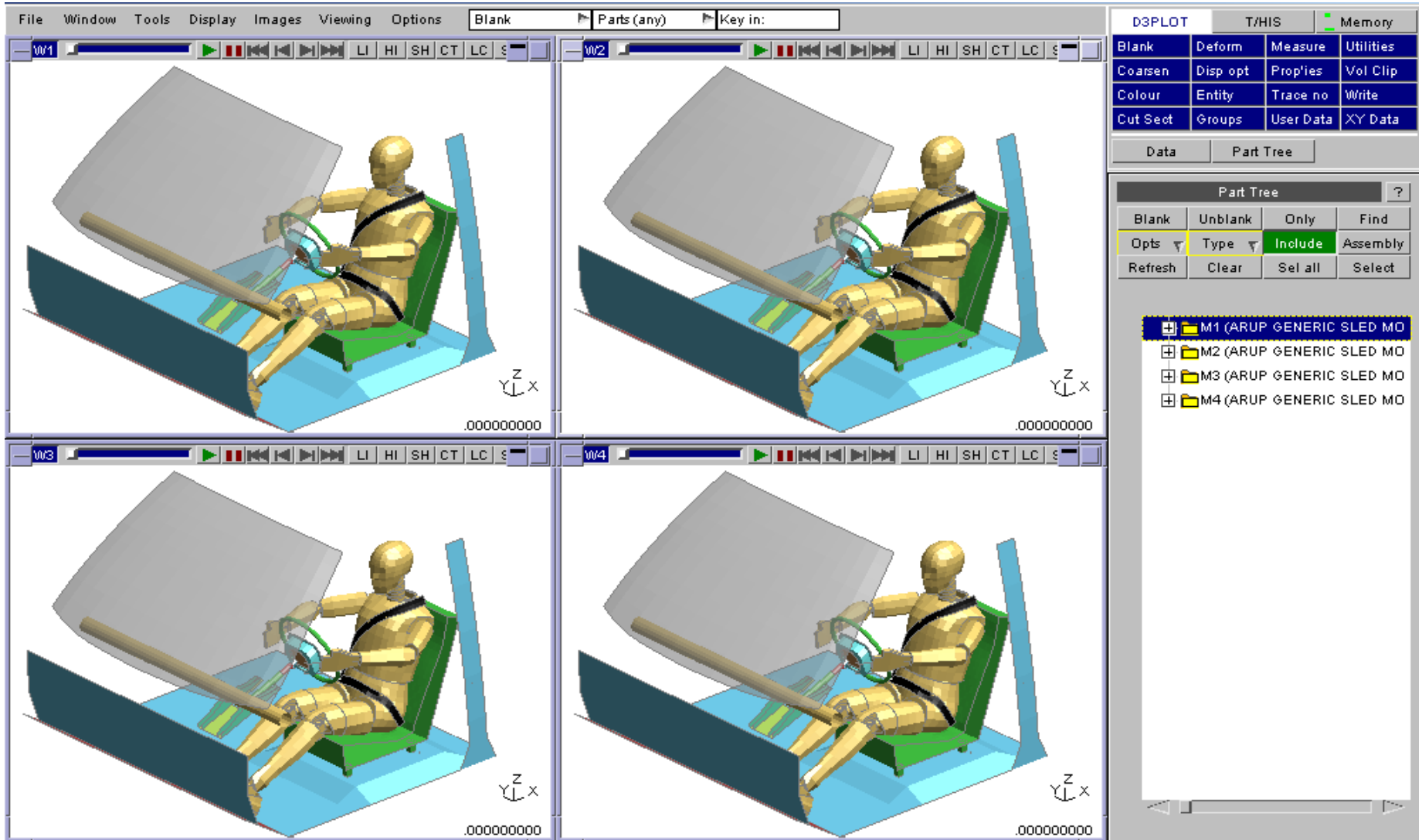
M1 (ARUP GENERIC SLED MO)  
M2 (ARUP GENERIC SLED MO)  
M3 (ARUP GENERIC SLED MO)  
M4 (ARUP GENERIC SLED MO)

0.000000000

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# Export Model Properties

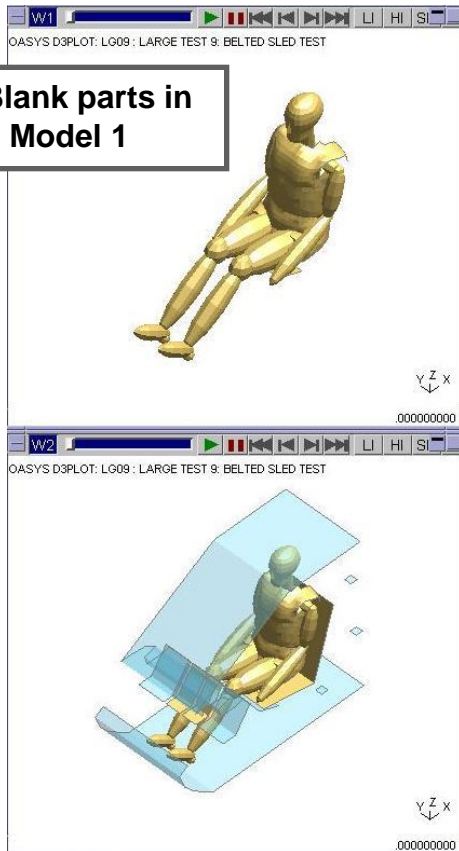


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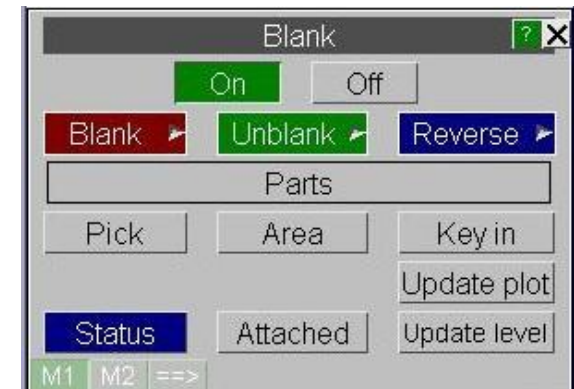
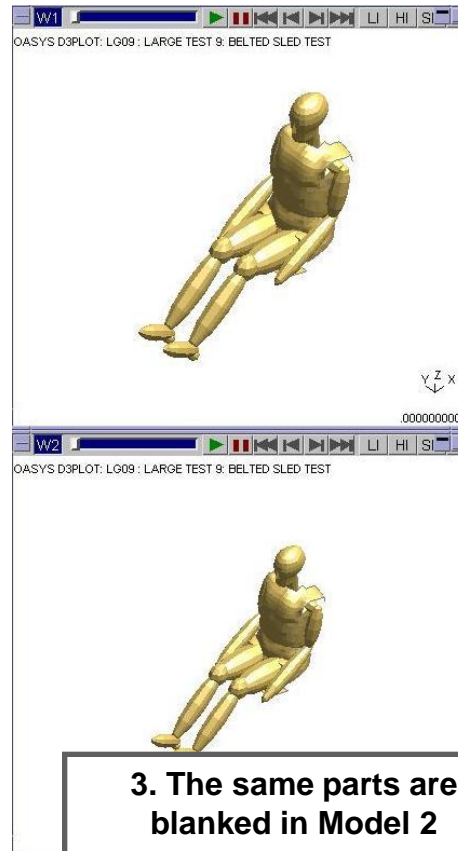
# Export Model Properties

Alternative method - export button is also available on menu tabs – exports from the active model or window (green tab) to all models or windows.

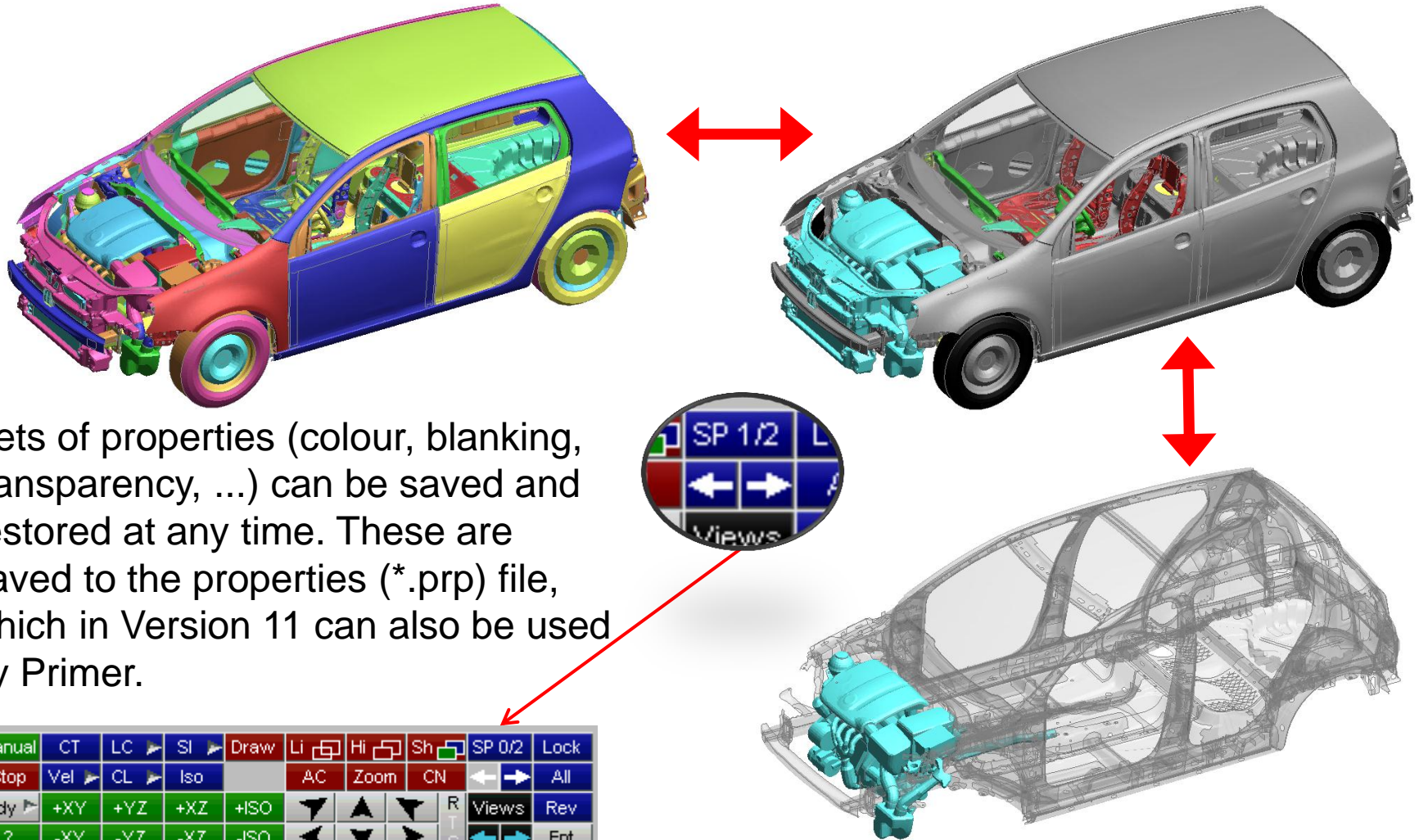
1. Blank parts in Model 1



3. The same parts are blanked in Model 2



2. Use Export button in Blanking menu



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# User Defined Components



# User Defined Components



- User-defined data components for contour plots
- Example 1 – displacement in a local axis system
- The local Z displacement will be calculated by a formula from the global X and Z displacements.

D3PLOT				T/HIS	Memory
Blank	Deform	Measure	Utilities		
Coarsen	Disp opt	Prop'ies	Vol Clip		
Colour	Entity	Trace no	Write		
Cut Sect	Groups	User Data	XY Data		

Name of component

In this example, we calculate a single value for each node

The method used is a simple formula, using maths operations, numbers, and existing data components. Here, DX means x-displacement, DZ means z-displacement

User Data

No user components defined

New... Create a new component

Edit... Edit existing component

Delete... Delete existing component

Status Current user data status

Create Create new component

Cancel Cancel create/edit

☐ Node Scalar Component name: Local Z displacement

☐ Node Vector

☐ So/Sh scalar Scalar Nodal Data

☐ So

☐ Bea

☐ Bea

Data source

☐ Read from file

☒ Simple formula

☐ Javascript file

Explain this

Save component

Reload saved

Give formula:

0.5\*dx + 0.866\*dz

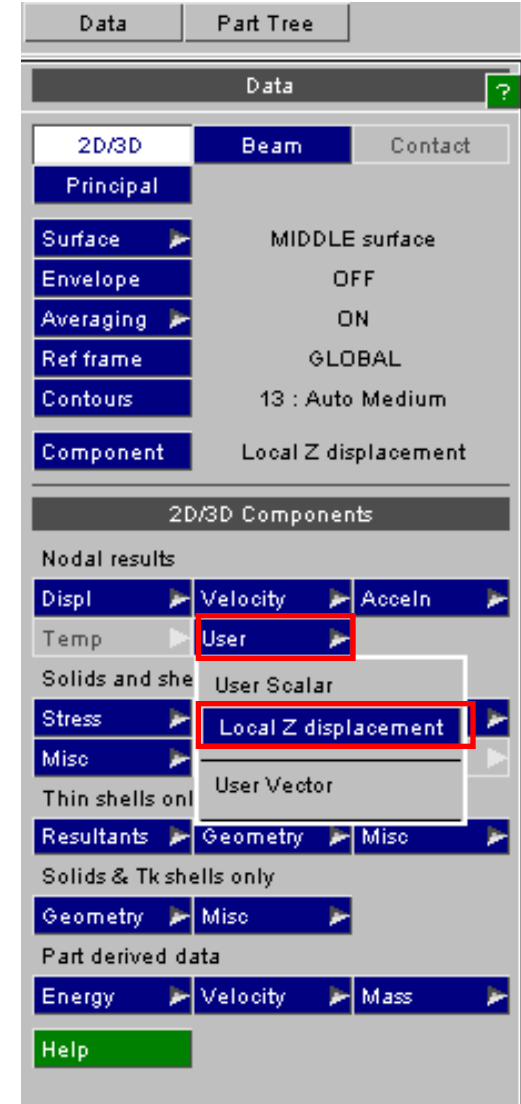
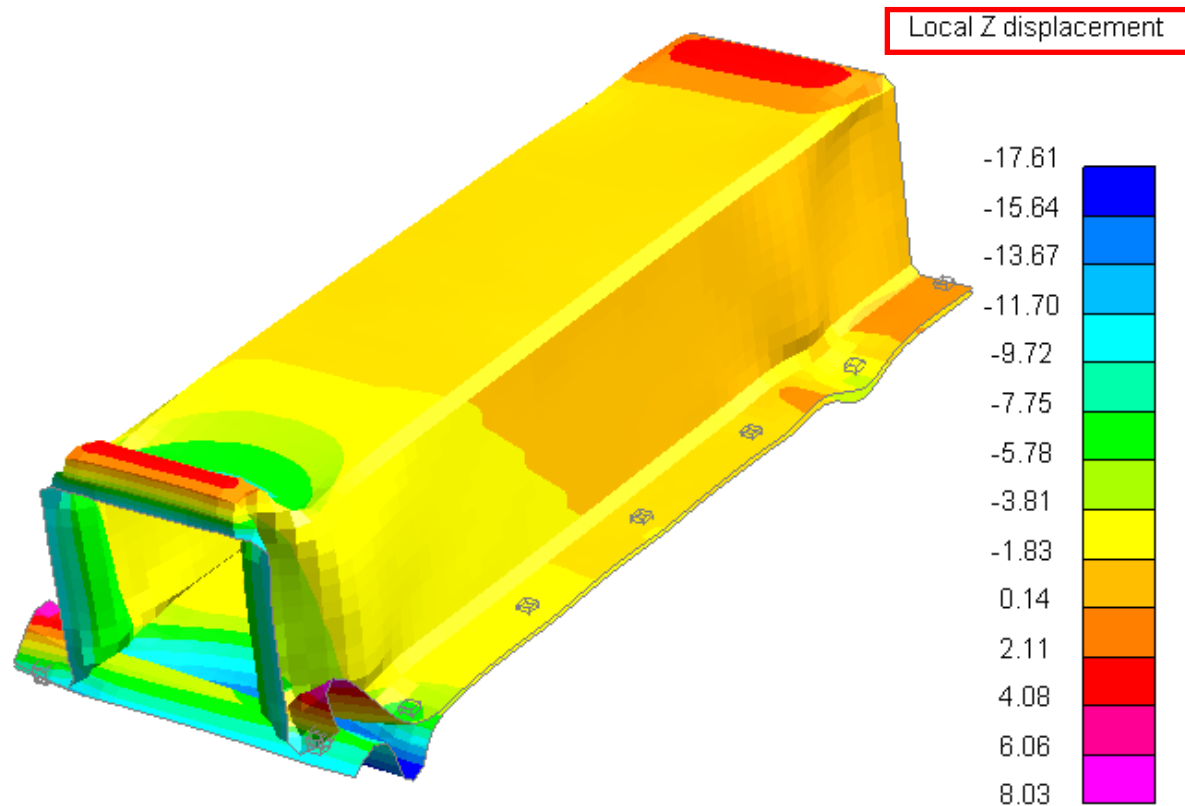
Explanation & data components listed here

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# User Defined Components

Having defined the data component, we can now select it in the Data menu.

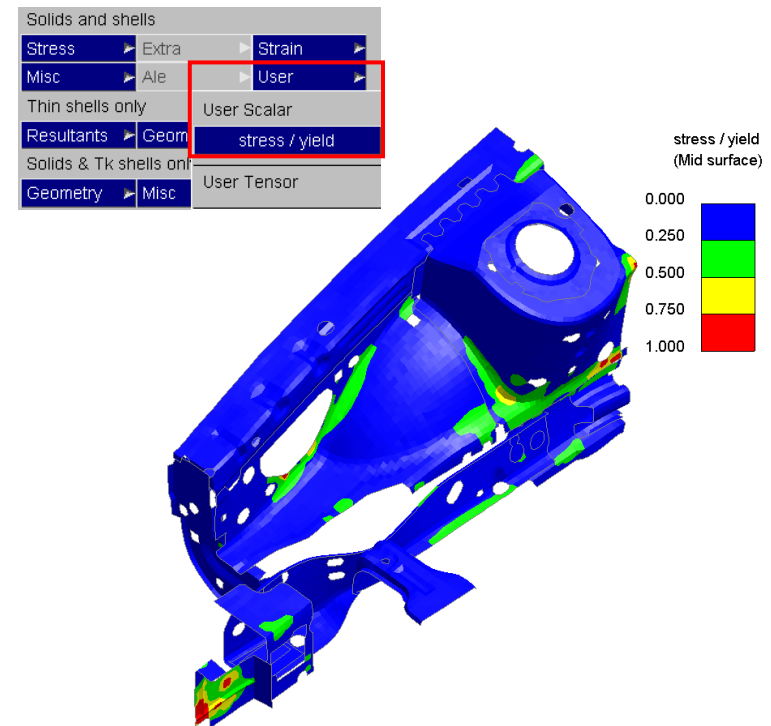
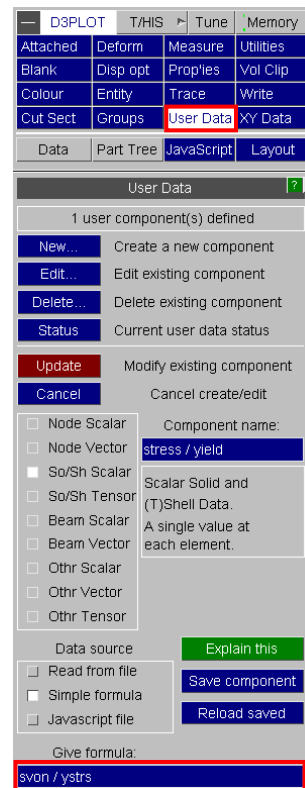
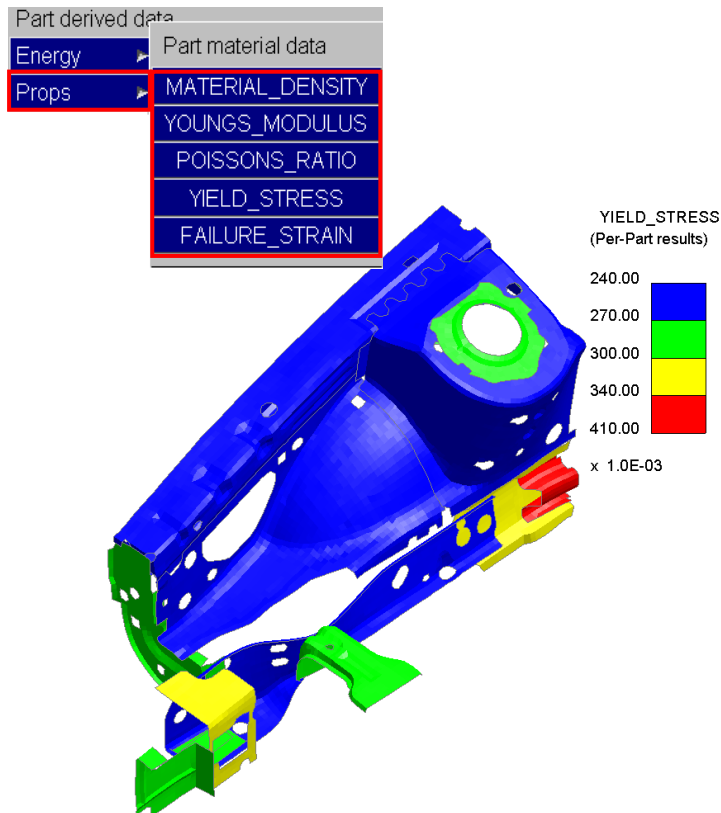


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# Material properties

- Material properties of parts can be contour plotted, used in user-defined components and written out from the WRITE menu.
- These come from the ZTF file created by Primer.

An example of its use could be to create a user defined component to plot stress / yield.

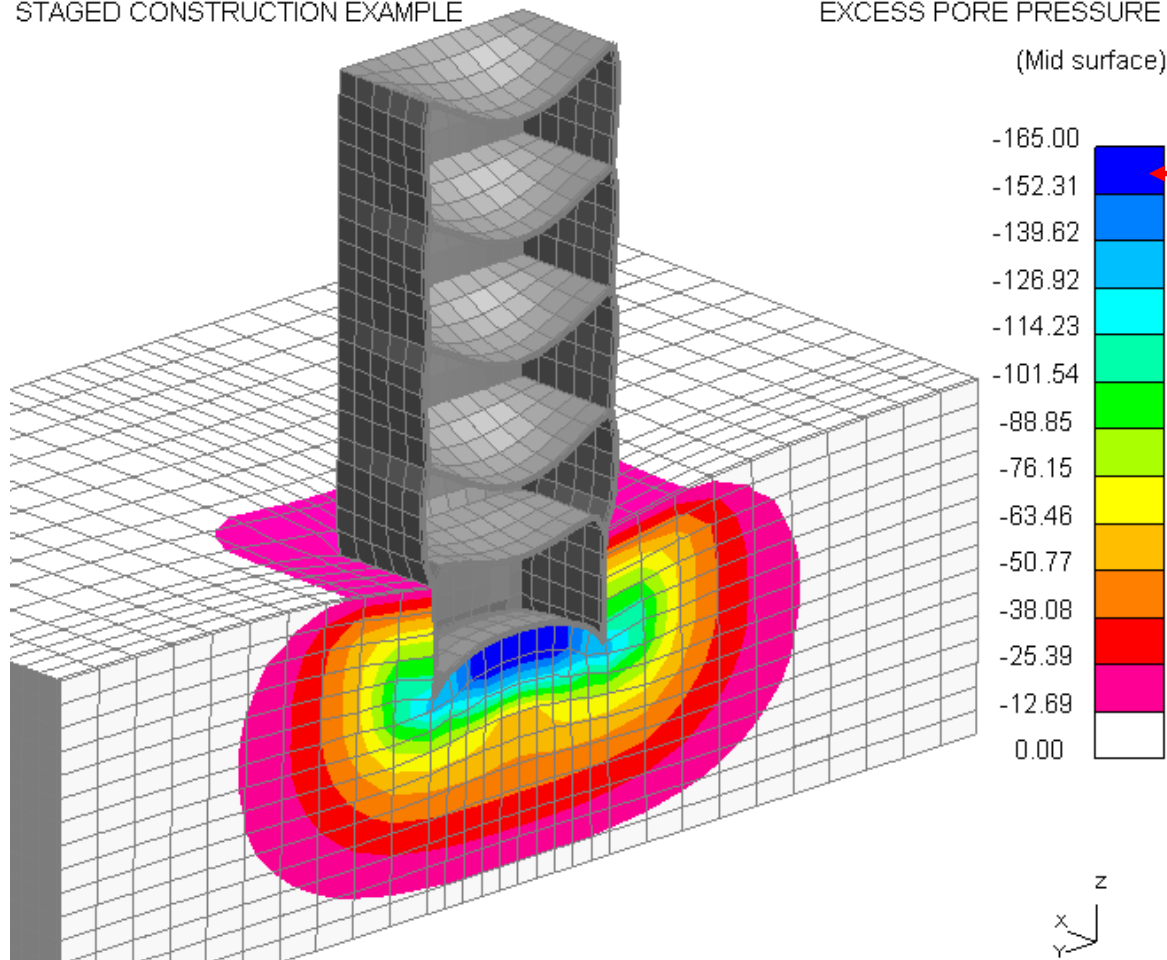


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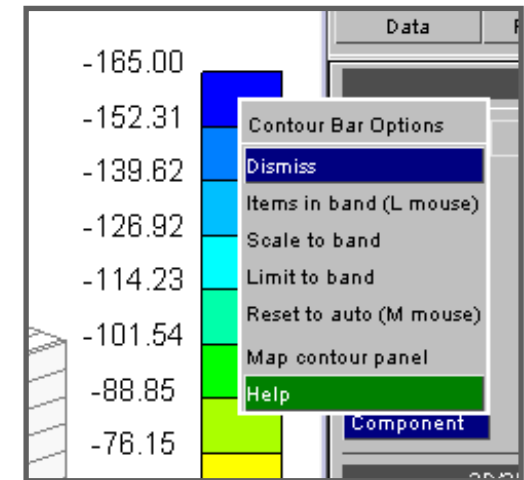
# Contouring

## Finding which elements have a particular contour level:

STAGED CONSTRUCTION EXAMPLE



**Hover over a contour colour. The mouse symbol changes to CONT OPTS. Left-click to display only those elements which have that contour level, or right-click to see more options:**



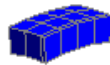
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# Contour Options



Finding which elements have a particular contour level:

Result of left-click on contour bar: only the elements with that contour level are displayed.



These options use the existing “Limiting Values” capability; this menu appears automatically when you click on a contour bar.

Contour limiting values

Option: Limiting ▾

Limiting switch: **On**

Lowerbound value: **-165.0**

Upperbound value: **-152.3**

Action for excluded

☐ Omit

☐ Outline

☐ Draw in black

Auto bands range

☐ Temp max + mi

☐ Full data range

☐ Clamp to limits

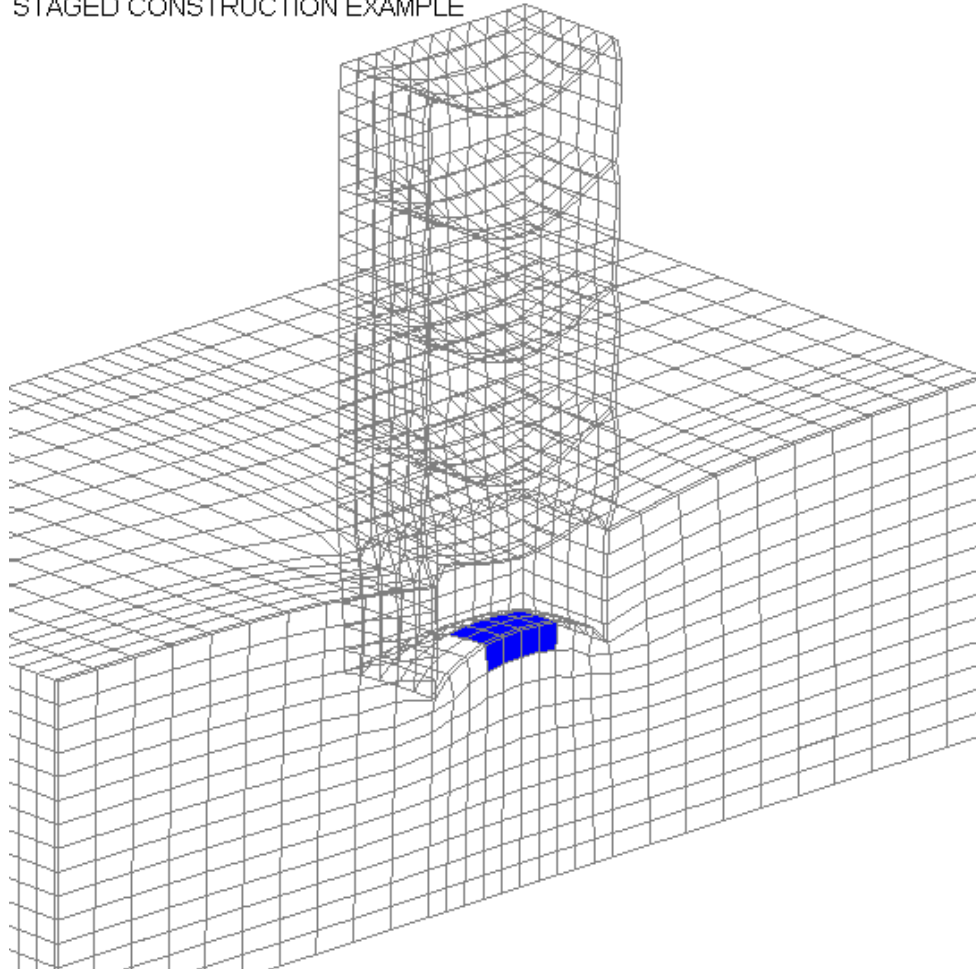
**Help**

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# Contour Options

STAGED CONSTRUCTION EXAMPLE



To see these elements in context, draw the other elements in Outline

Contour limiting values

Option: Limiting

Limiting switch: On

Lowerbound value: -165.0

Upperbound value: -152.3

Action for excluded

☐ Omit

☒ Outline

☐ Draw in black

Auto bands range

☐ Temp max + mi

☐ Full data range

☐ Clamp to limits

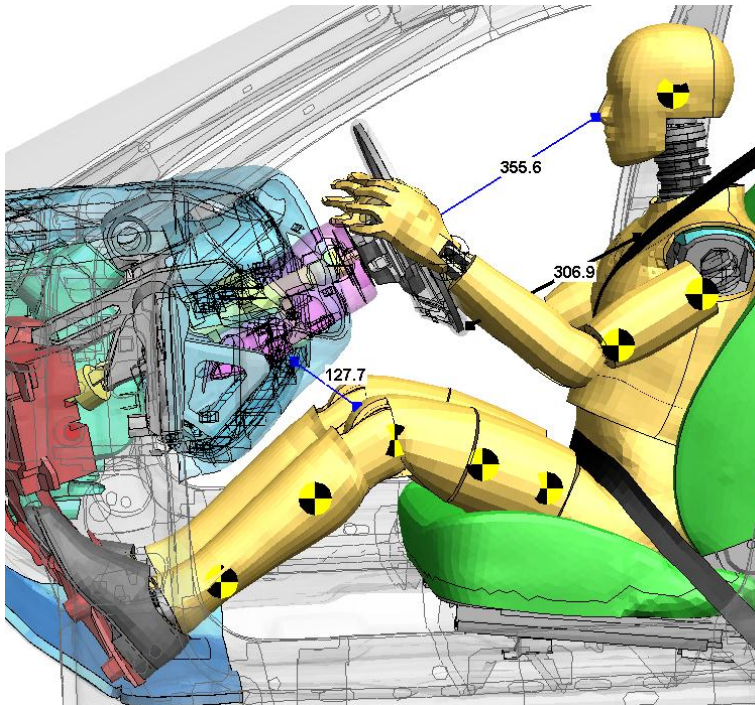
Help

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# Measure

# Measure

- In previous versions of D3PLOT, only one “Measure” could be displayed. From Version 10, up to 100 “measures” may be defined. Each time the user clicks on another pair of nodes, a new “measure” is created.
- The panel shows the status of the “current” measure, which is drawn in a thick black line.



Control which Measure is “current”

Delete or Modify the current Measure

D3PLOT T/HIS Tune Memory

Attached	Deform	Measure	Utilities
Blank	Disp opt	Prop'ies	Vol Clip
Colour	Entity	Trace	Write
Cut Sect	Groups	User Data	XY Data

Data Part Tree JavaScript Layout

Measure ? X

☒ Create Measurements

☒ Display Measurements

◀ ◀ 3 ▶ ▶ Delete All

☒ Current ☐ Other

☒ Show All ☒ Display Values

☒ Auto Create ☐ Label Nodes

☐ Draw in hidden mode

☐ Draw in wireframe mode

Point-Point Point angl Node-Node

Node angl Node-Origin

Delete Modify

N602866	-2129.4	431.5	758.2
N1520154	-2418.9	376.5	892.7

Distance: -289.5 -55.0 134.5

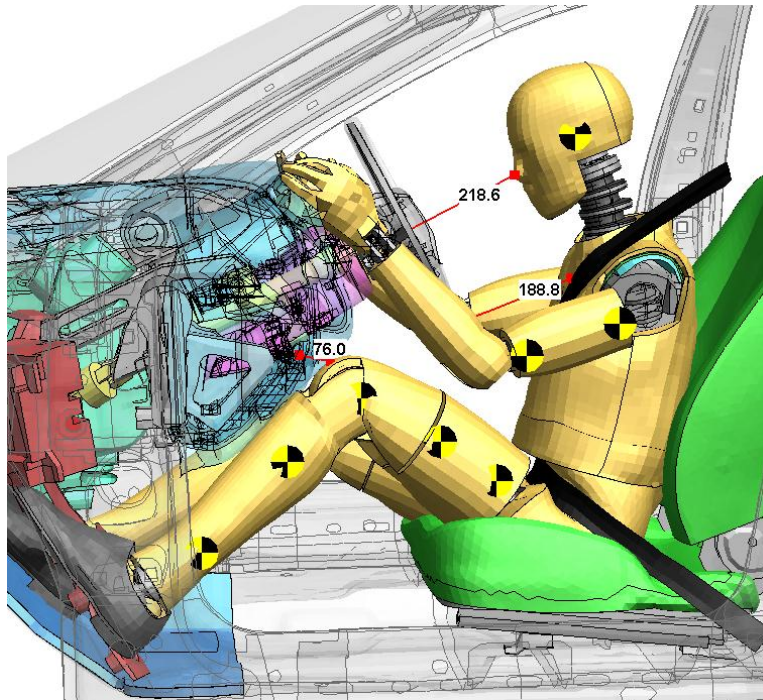
Magnitude: 323.9

Export to XY\_PL Export ALL to XY

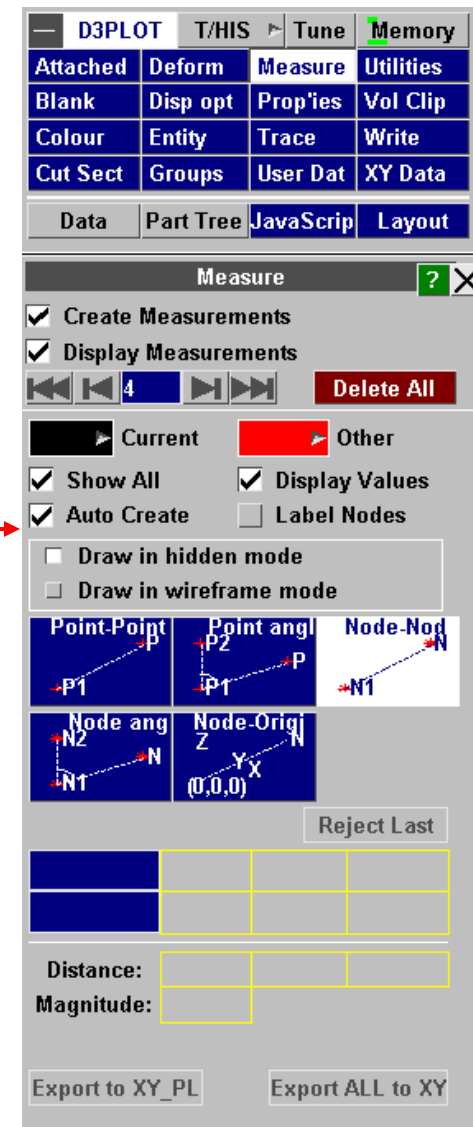


# Measure

- The “measure”s remain visible until deleted.
- The measurement data (distance) is updated automatically when a different time-state is loaded.
- To remove all the “measure”s from the screen, press Delete All in the Measure menu, or press the Delete key on the keyboard.



Formatting  
options

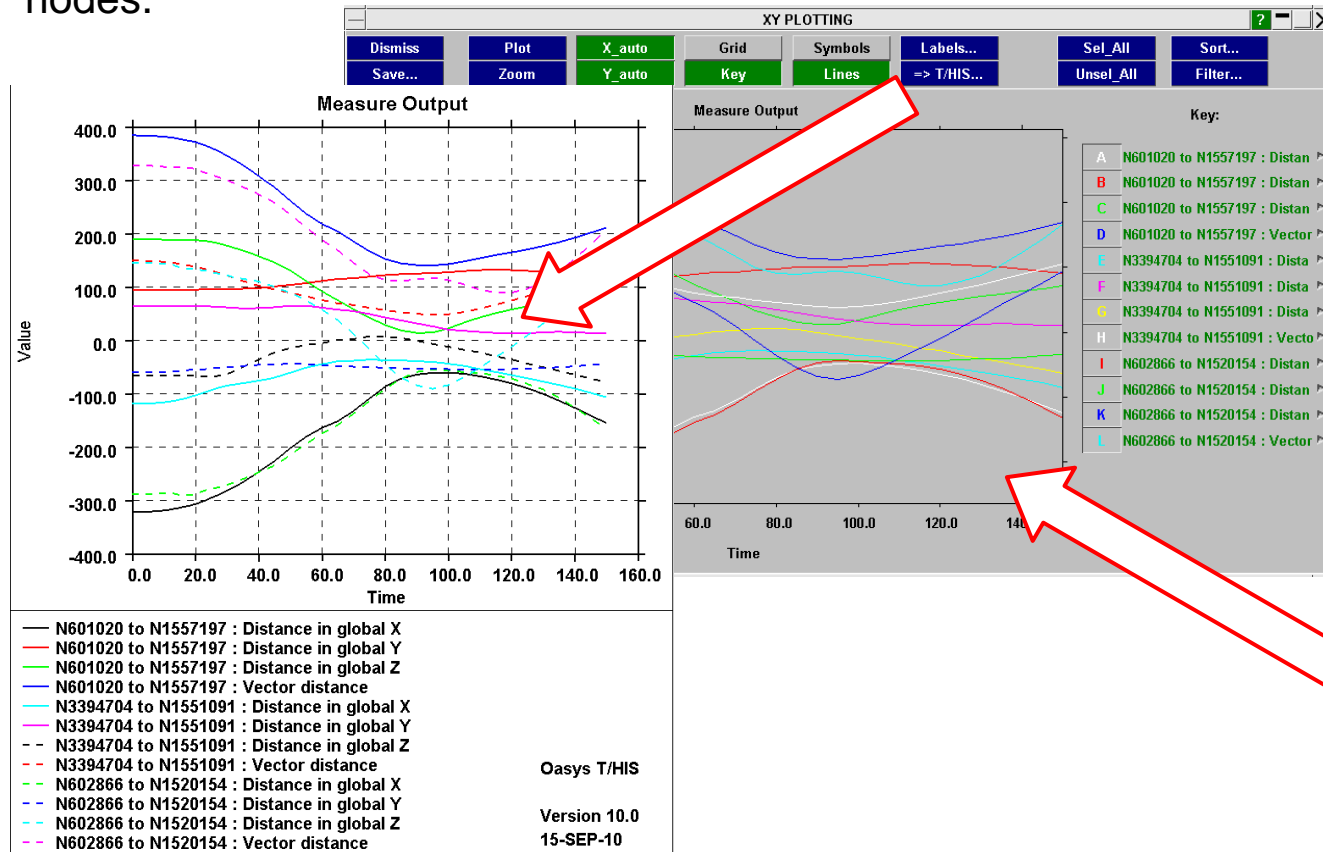


# Measure



The measurements can be exported as time-histories to T/HIS via XY\_DATA.

Separate curves are written for difference in X, Y, and Z-coordinates, and distance magnitude: 4 curves for each pair of nodes.



D3PLOT				T/HIS	Tune	Memory
Attached	Deform	Measure	Utilities			
Blank	Disp opt	Prop'ies	Vol Clip			
Colour	Entity	Trace	Write			
Cut Sect	Groups	User Data	XY Data			
Data	Part Tree	JavaScript	Layout			

Measure

☒ Create Measurements  
☒ Display Measurements

3 Delete All

Current Other

☒ Show All ☒ Display Values  
☒ Auto Create ☐ Label Nodes

☐ Draw in hidden mode  
☐ Draw in wireframe mode

Point-Point Point angl Node-Node  
Node angl Node-Origin  
Z (0,0,0) X Y

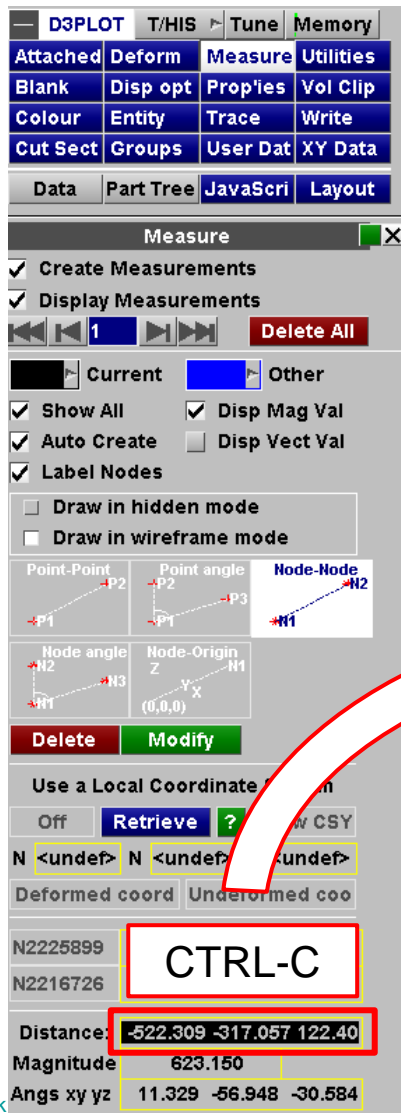
Delete Modify

N602866	-2129.4	431.5	758.2
N1520154	-2418.9	376.5	892.7
	-289.5	-55.0	134.5
Magn	323.9		

Export to XY\_PL Export ALL to XY



# Measure



Measurements in the measure panel can be copied and pasted.

My text file  
Distance is:

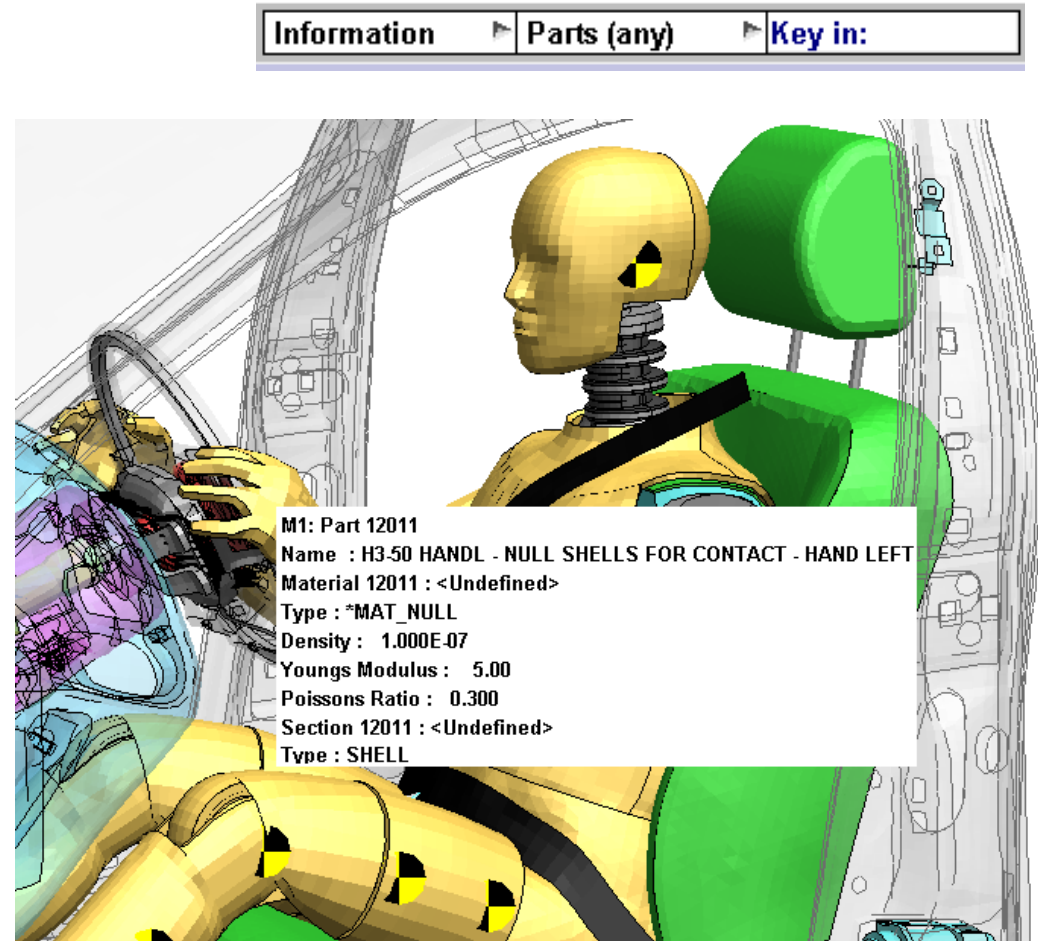
CTRL-V

-522.309 -317.057 122.40

CTRL-C

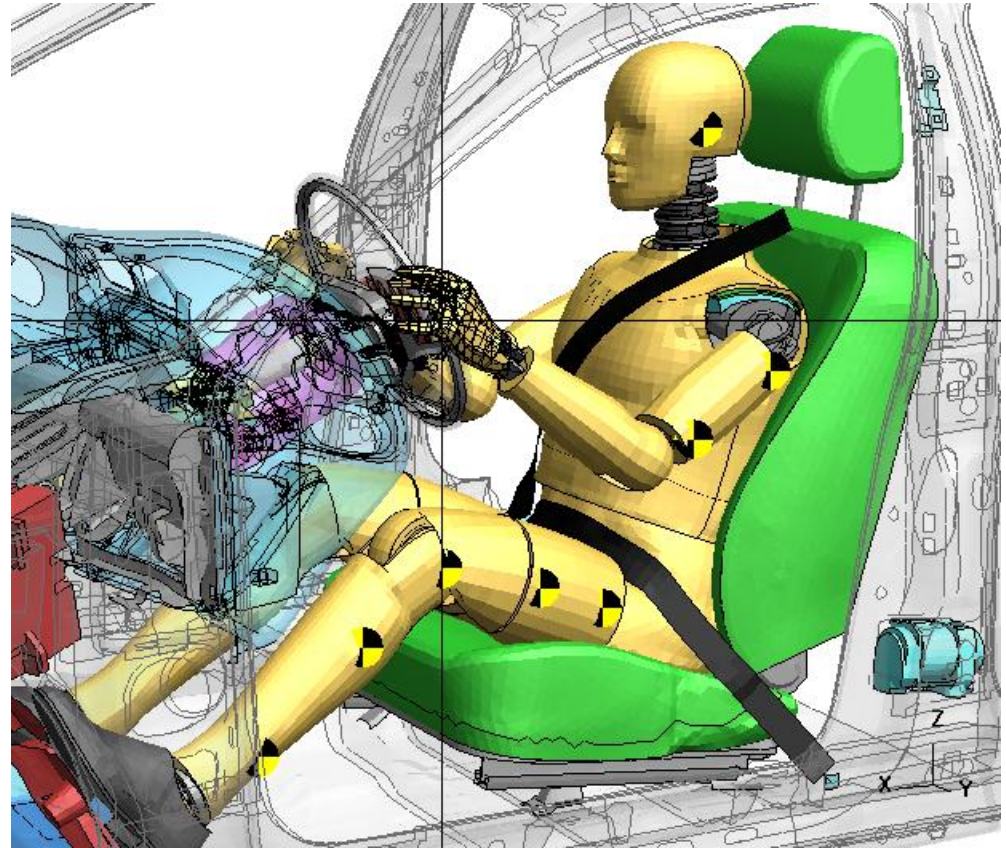
# Quick Pick

- Quick-Pick option Information gives details about Parts or other entities: Part ID, Part title, thickness, material type, density, Youngs Modulus, etc.
- Material data and material type are not included in LS-DYNA's output files, but are passed to D3PLOT by the ZTF file that can be written by Primer.



- Quick-Pick option Find sketches the entity with a cross-hair. This is intended to help locate small entities within a large model.
- Press 'Del' key to remove the cross-hair.

Find ▾ Parts (any) ▾ Key in: 12011



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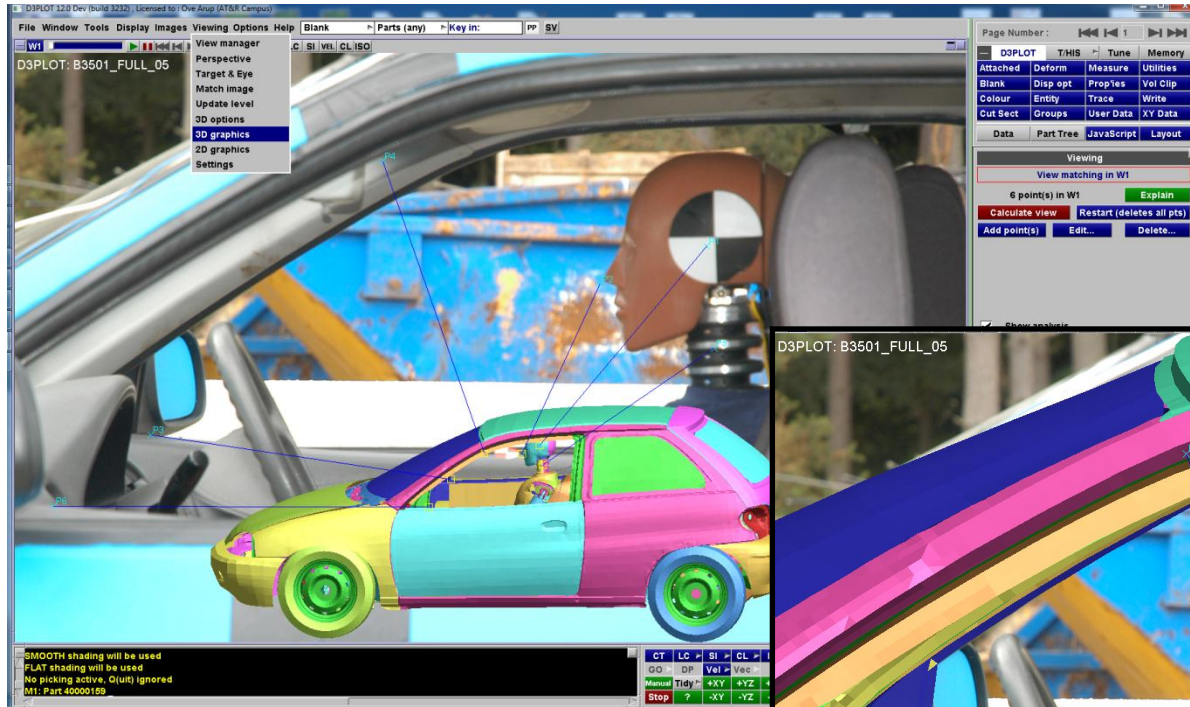


# Image Matching



# Image Matching

The view can be automatically calculated to match a background image or movie.



Select pairs of points on the image and model and D3PLOT will calculate the view.



For a good match, points should be selected at a range of depths (i.e. not in a plane).

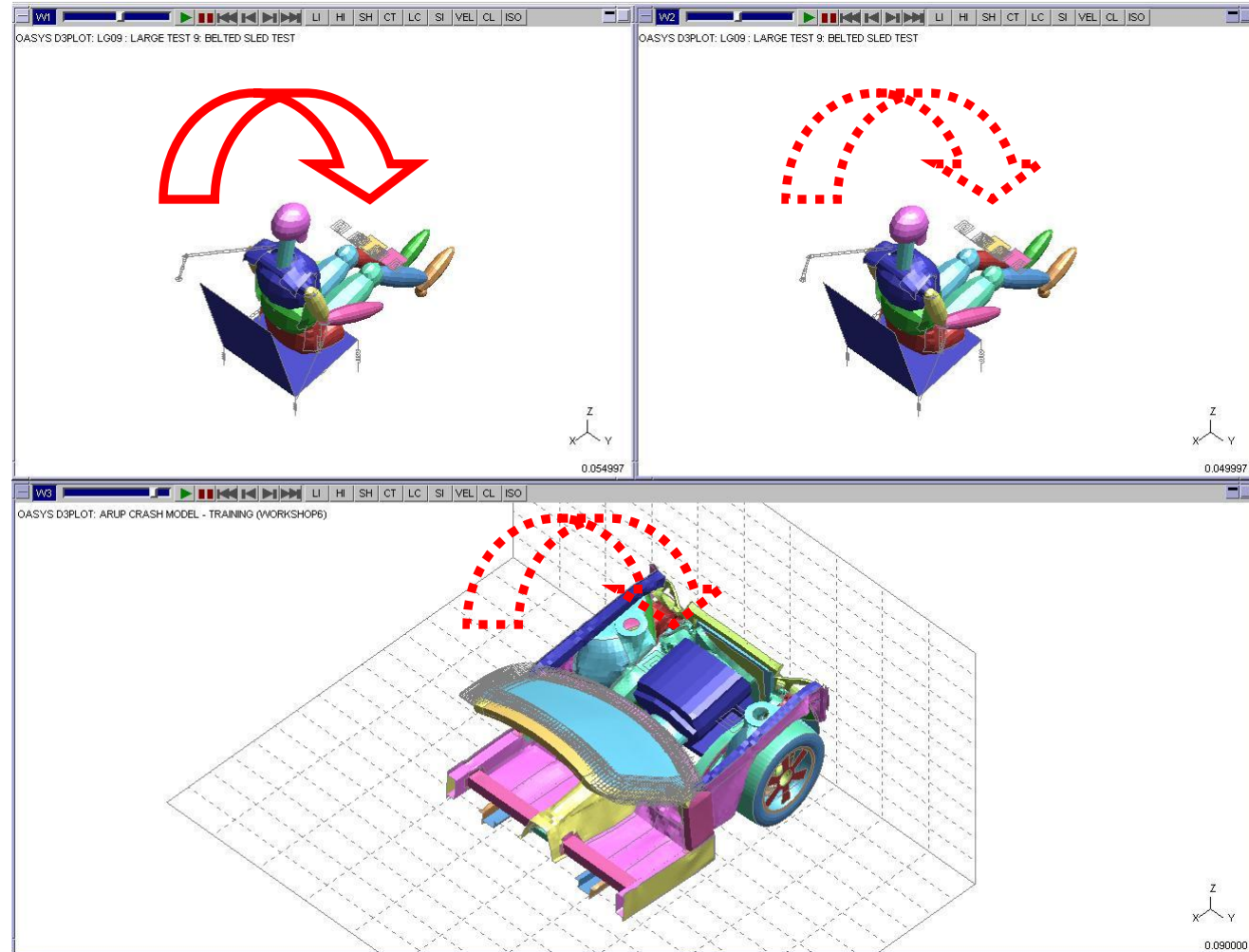
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# Shortcut Keys

- “K” resets entity visibility switches to default settings, or to preference settings if any.
- “X” then “N” to pick a node for cut-section. “D” to drag cut-section.

# Useful Shortcuts

Caps Lock allows dynamic viewing in one window to control other windows



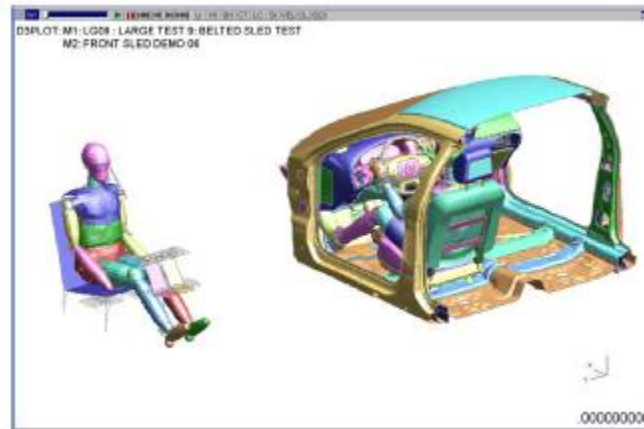
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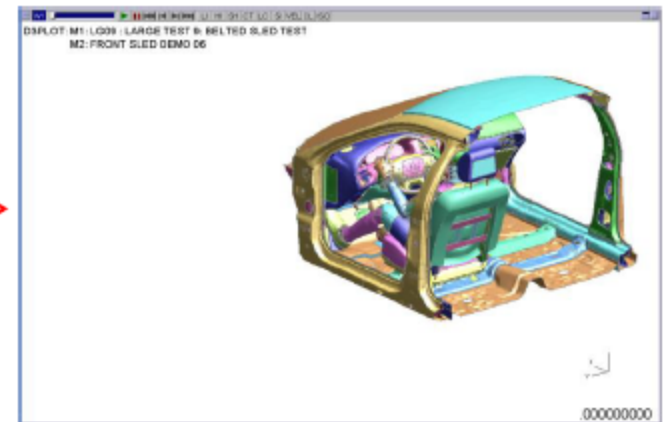
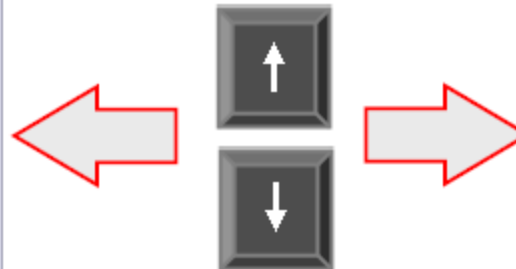
# Useful Shortcuts

Up and Down arrow keys to cycle display of models

Two models in one window



Cycle between the two



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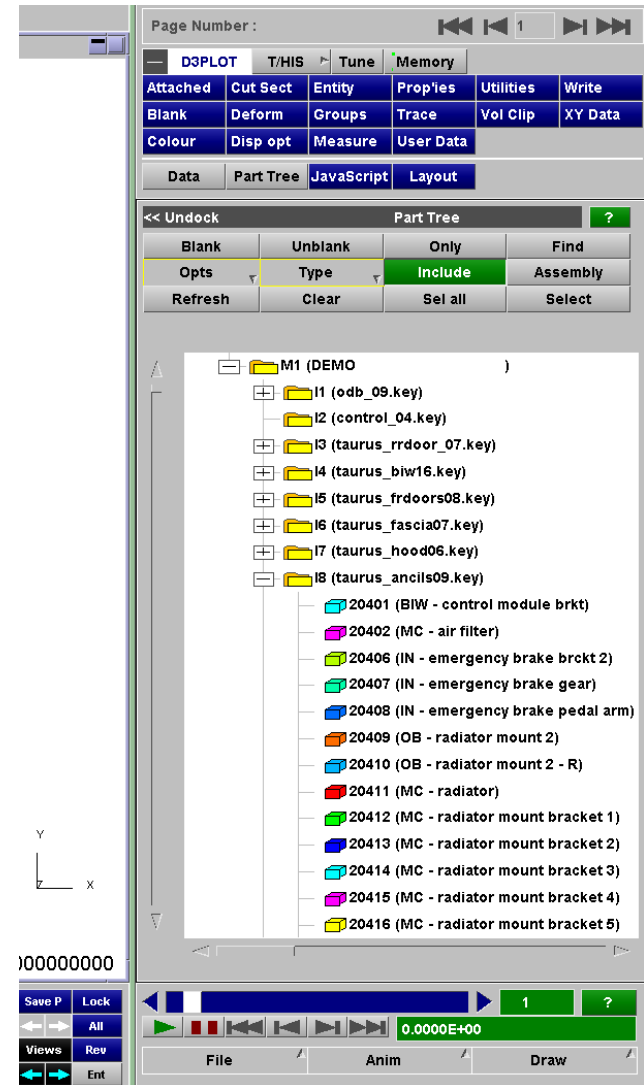
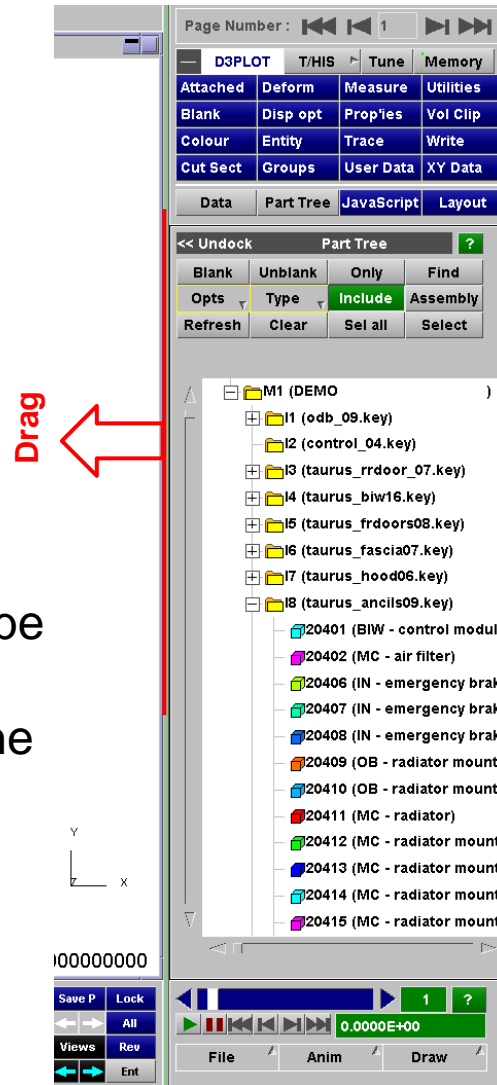
# Ergonomics

# Resizing Right Hand Menu



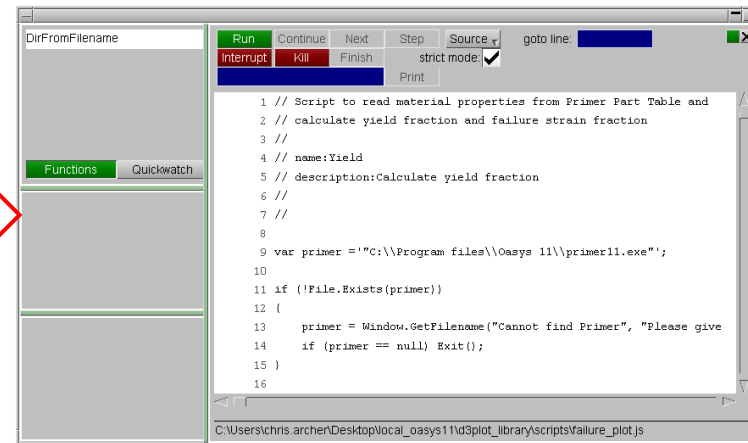
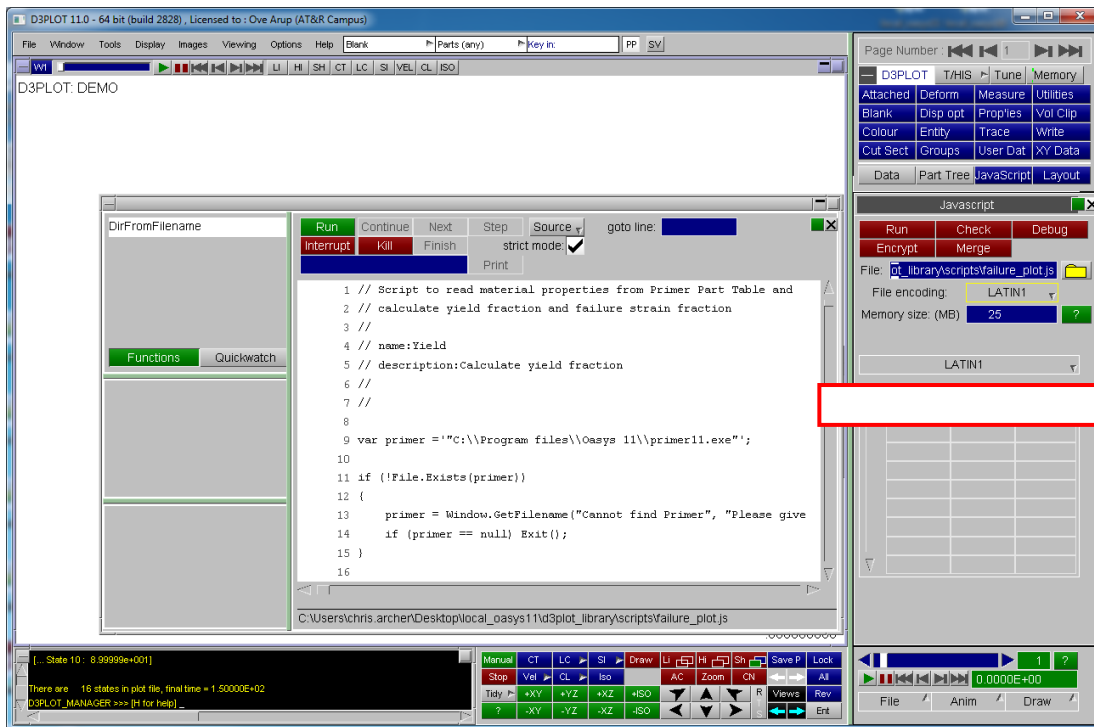
The right hand menu area can be dragged wider – e.g. to reveal long part names in the Part Tree

This also allows the Tools menu buttons to be re-arranged, so more height is available for the docked menus

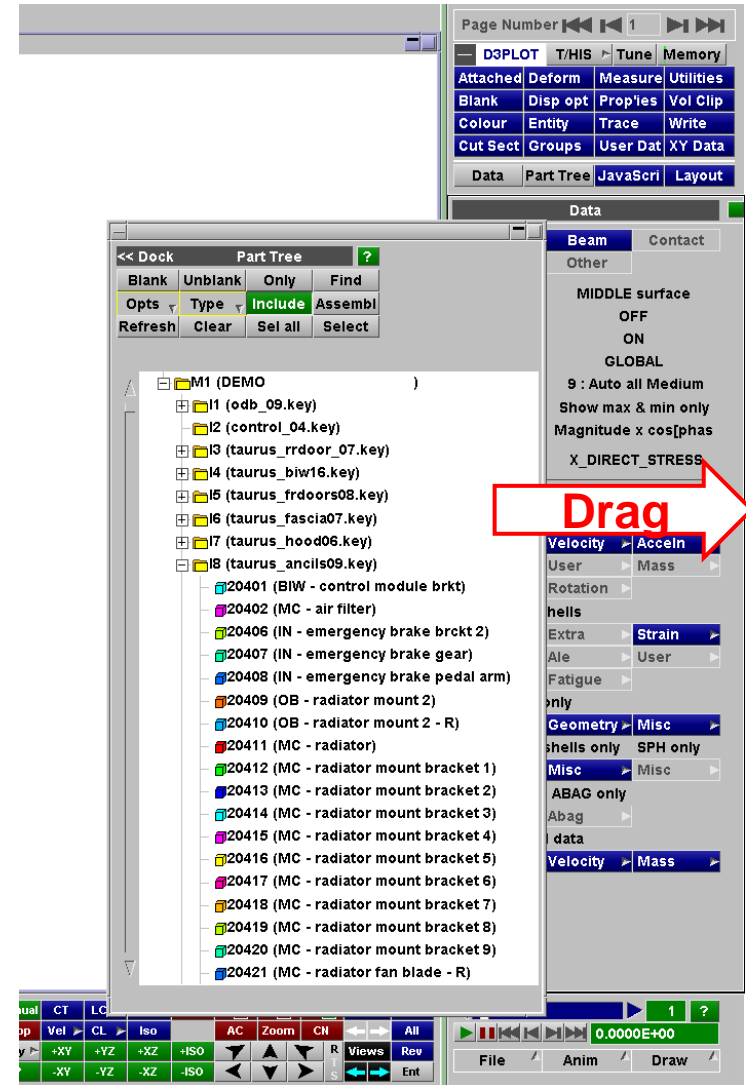
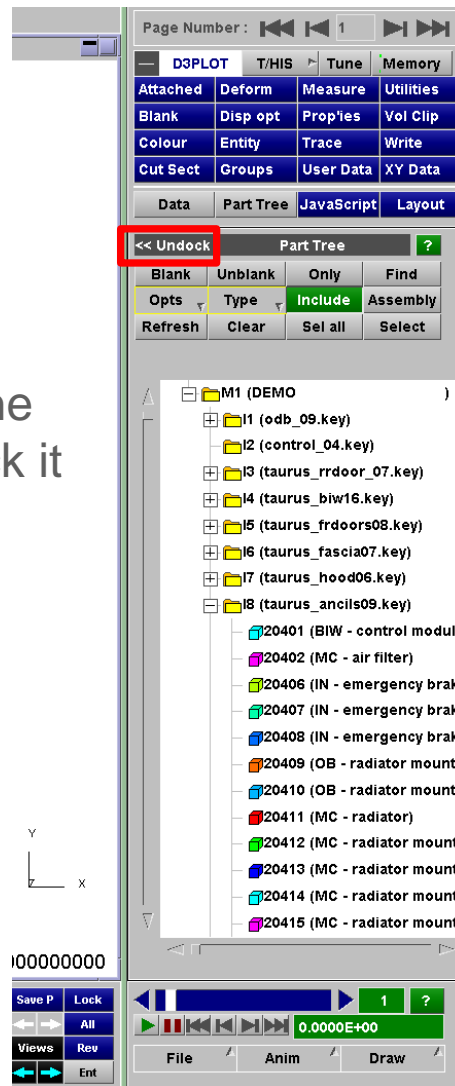


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Floating menus can be dragged outside the main D3PLOT window.  
Useful with wide-screen or dual-screen monitors.

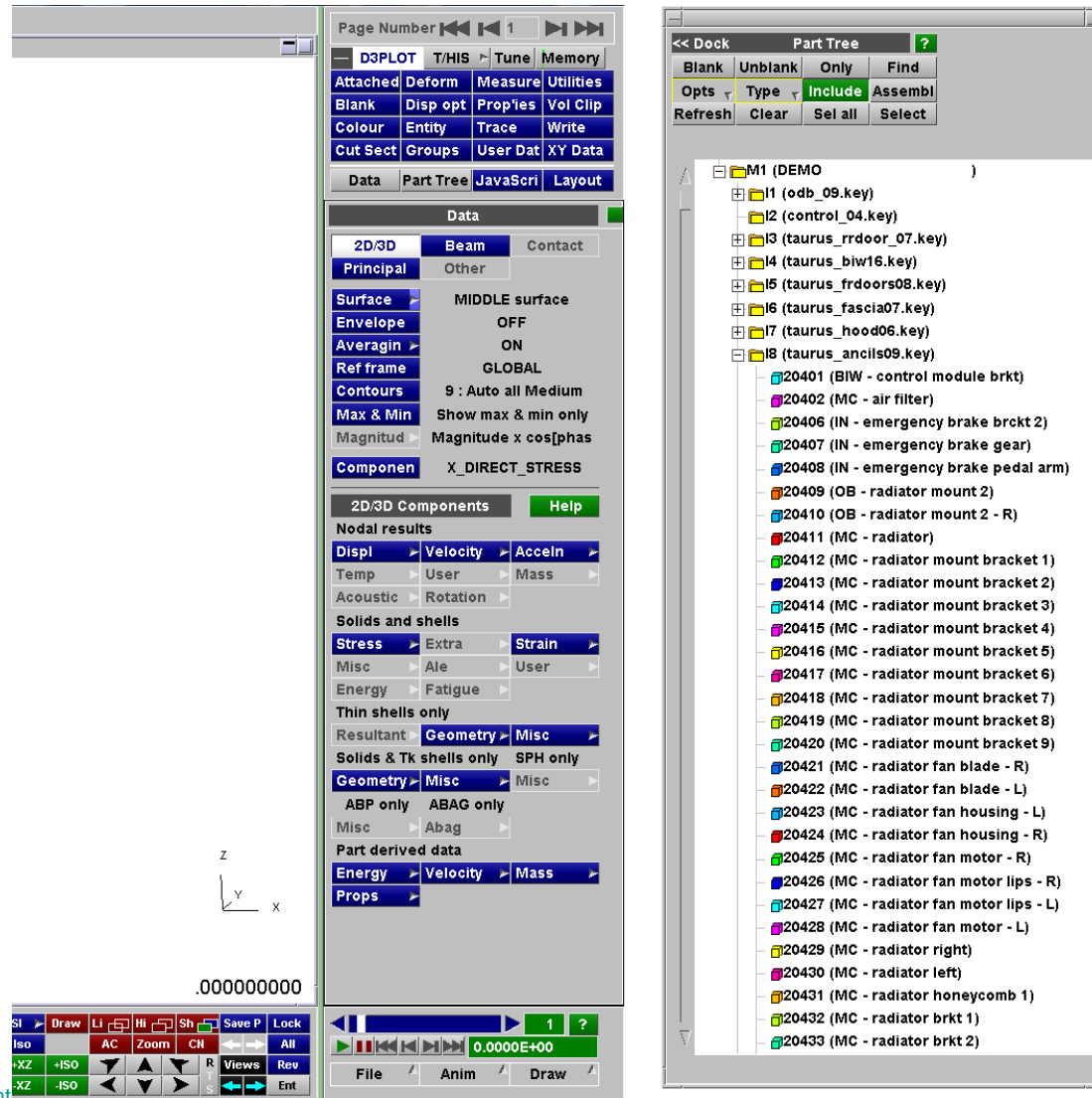


To do this with the Part Tree, undock it first



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Now the Part Tree is always available without obscuring other menus

# Graphics Tuning

# Tuning Graphics Performance



- D3PLOT can be tuned to take advantage of the capabilities of new graphics cards – typically for hardware manufactured from about 2007 onwards.
- These should be turned on by default in v11.
- Speed of animation of large models can be increased up to 5x or more on some graphics cards
- Instructions for doing this are given in the “Explain this” button.
- After tuning the performance, the settings can be saved to the preference file.

Page Number : 1

**D3PLOT** T/HIS **Tune** Memory

Attached	Deform	Measure	Utilities
Blank	Disp opt	Prop'ties	Vol Clip
Colour	Entity	Trace	Write
Cut Sect	Groups	User Data	XY Data

Data Part Tree JavaScript Layout

Utilities ? X

Done

Special graphics options

Line width: 1 Width in pixels

Window siz 1615 954 Pixels

Graphics performance tuning

Use Vertex Arrays ☒

Use VBOs for Verts ☐ for Coords ☐

Use Shaders ☒

Show timing ☒

No delay ☐

Save tuning settings Explain this

Mesh Coarsening Defaults

Automatic Coarsening

☐ Off (default)

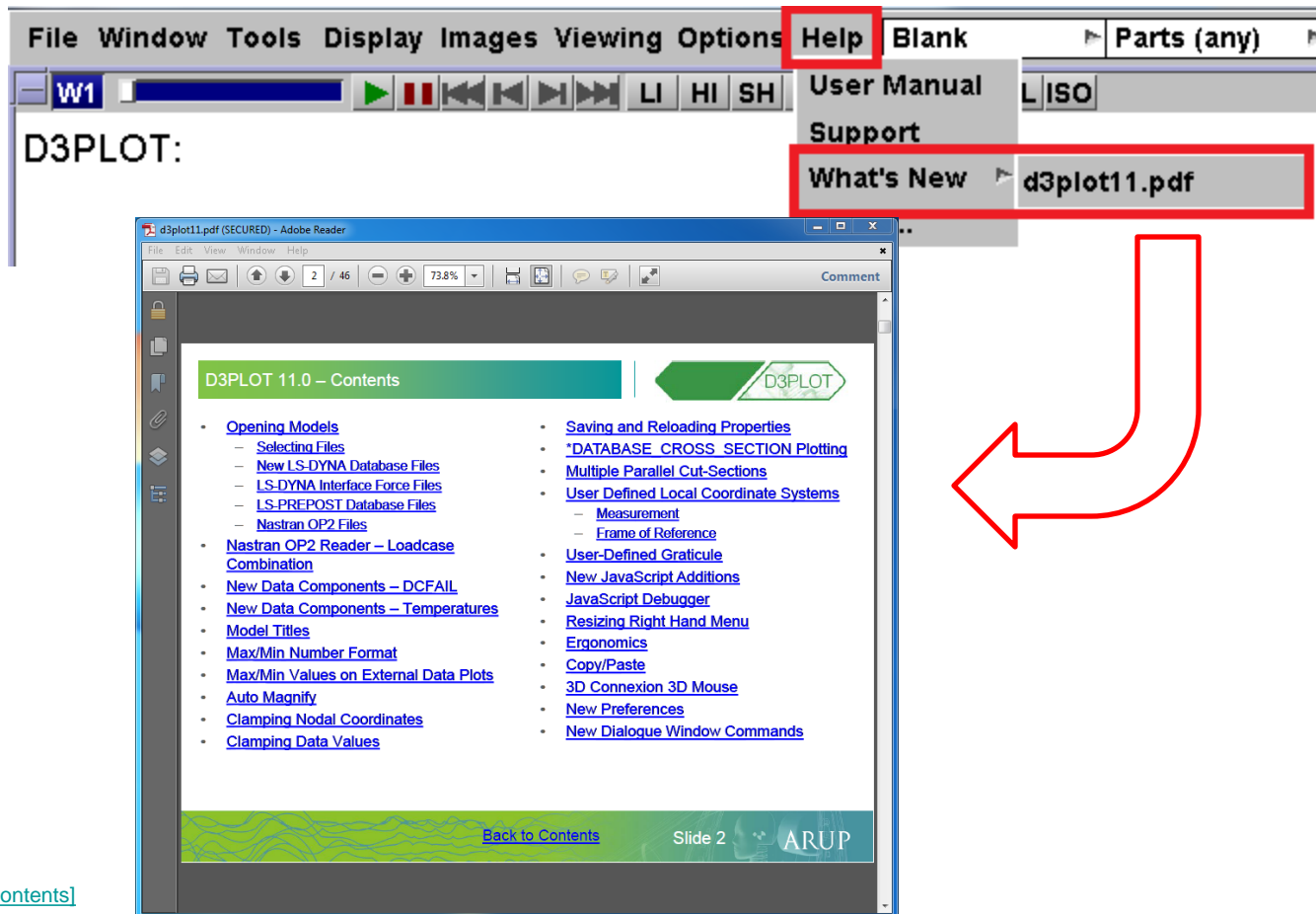
☐ Mild (Slight image degradation)

☐ Severe (Considerable " " )

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# What's new?

A presentation describing the new features in the current version of D3PLOT can be accessed in pdf format from the Help->What's New menu.



# Questions