



Altair

HyperWorks

Altair MotionView 2019 Tutorials

MV-6000: Plotting Basics

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MV-6000: Plotting Basics

Introduction

In this tutorial you will learn to:

- Import a MotionSolve result (plot) file for plotting curves
- Plot multiple curves in a single window
- Plot multiple curves in different windows on a single page
- Save your work as a session (mvw) file

Theory




The **Build Plots** panel allows you to import plot files that can be plotted in a 2D layout. The panel allows you to control what curves are to be plotted either in single or multiple windows.


Tools

The **Build Plots** panel can be accessed in any one of these three applications: MotionView, HyperView or HyperGraph.

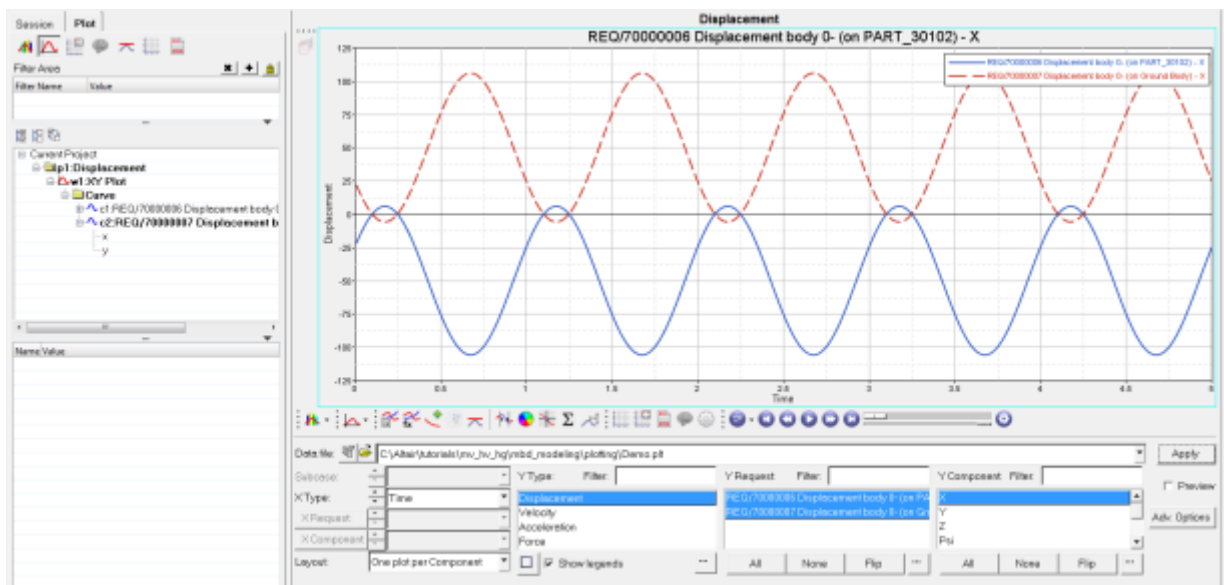
Copy the `Demo.plt` file, located in the `mbd_modeling\plotting` folder, to your <working directory>.

Step 1: Opening a plot file.

1. Start a new **MotionView** session.
2. Select **HyperGraph 2D** from the **Select application menu**,  , on the toolbar.
The toolbar is located right below the plot window.
3. Click the **Build Plots** icon,  , on the toolbar.
4. Click the **Open File** icon,  , on the **Build Plots** panel.
5. Select the file `<working directory>\Demo.plt`.
6. Click **Open**.
This file contains several curves.
7. Confirm that **Time** is selected under **X Type**.
8. For **Y Type**: click on **Displacement** to select it.
The **Y Request** text box displays the data available in the file.

9. Click the **Y Request** expansion button  to view the Y Request list.
10. Press CTRL button on the keyboard and click on **REQ/70000006** and **REQ/70000007** (or left-click and drag the mouse to select both **REQ/70000006** and **REQ/70000007**). Click **OK**.
11. Select **X** under **Y Component:**.
12. Set **Layout** as **one plot per Component**.
13. Click **Apply**.

Two curves are plotted in the plot window, each with its own line type and color. The legend identifying the curves is located in the upper right hand corner of the plot.




Single plot window with multiple curves created using the Build Plots panel



Step 2: To build multiple curves on multiple plots using the plot file.

In this step you will select multiple curves and plot them in multiple windows.

1. Stay in **Build Plots** panel.
2. Leave **Time** selected under **X:**.
3. Leave **Displacement** selected under **Y Type:**.

4. Leave **REQ/70000006**, and **REQ/70000007** selected under **Y Request:**.
5. Press CTRL and under **Y Component:** select **X, Psi, MAG** and **RMAG**.
6. Select **One plot per Component** from the **Layout** pull down menu , located in the lower left corner of the panel.

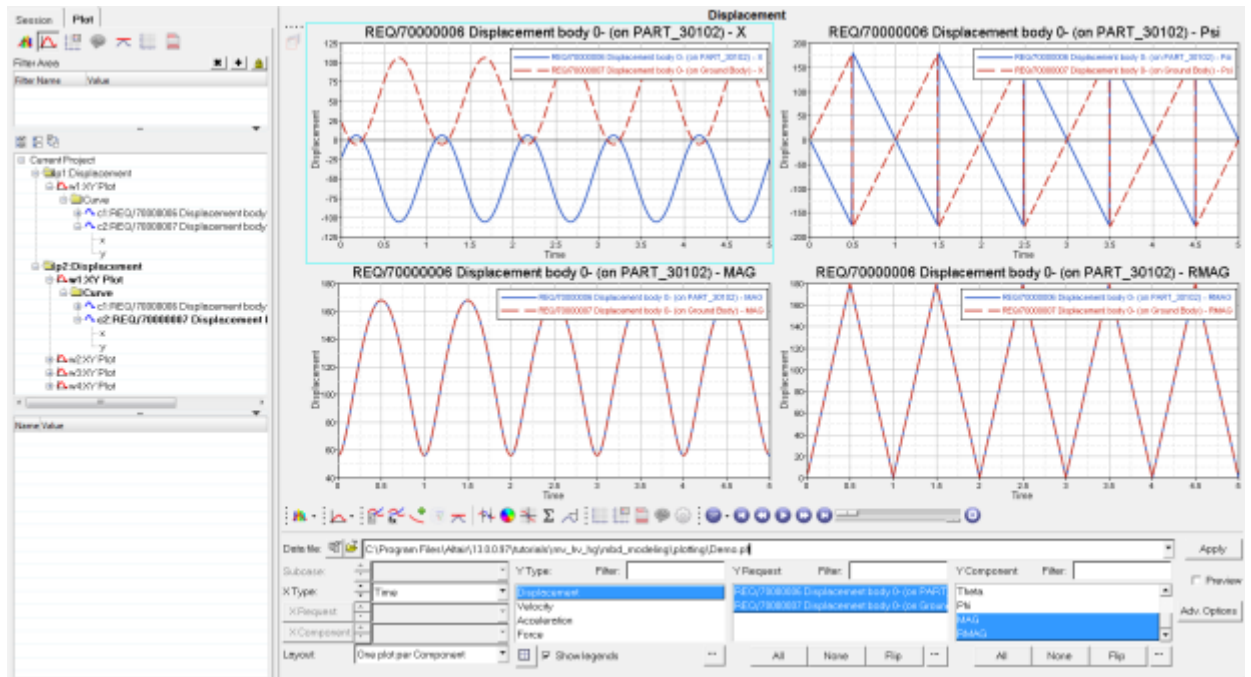
This selection creates one plot for every request selected under **Y component**. There will be four plots created. You could have one page for each plot. However, this tutorial wants all four plots on the same page.

7. Click the **Page Layout** button , located next to the **Show Legends** check box.
8. Select the four window layout option .

The **Page Layout** dialog automatically closes.

9. Click **Apply**.

A second page is added to the page list with four windows and the plots you requested.



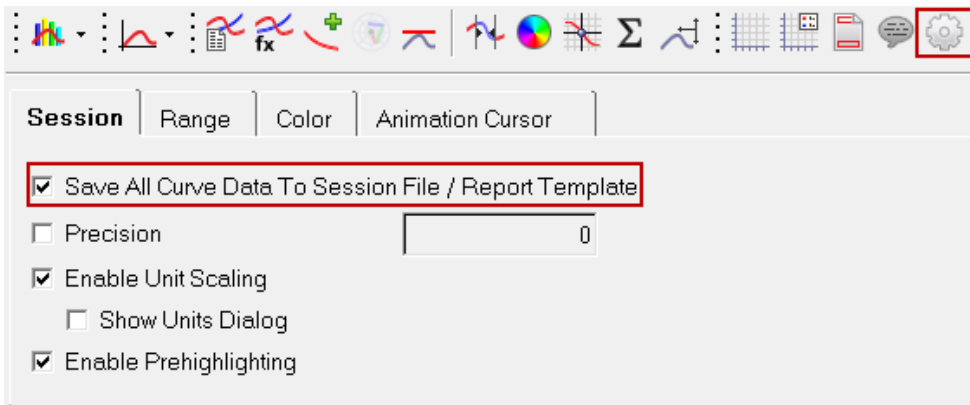
Multiple plots with multiple curves created using the Build Plots panel

Note The procedure to plot and edit curves from other result/request files (for example, .req, .abf, etc.) remains the same as described in this tutorial.

Step 3: To save this work session.

You can save your work with multiple curves in multiple windows on multiple pages as a session file. A session allows later retrieval either for display, printing, or to continue adding more information. The session file is a script with the extension `.mvw`. The contents of an `.mvw` file are all the information in the program that gets recorded in the script file.

Note To save a session as a script file with curve data: select the **Options** panel icon from the **Annotations** toolbar, and activate the **Save All Curve Data To Session File / Report Template** check box (located on the **Session** tab).



1. From the **File** menu, select **Save As > Session**.
2. Select a directory.
3. In the **File name** text box type `Demo1.mvw`.



Save Session As dialog

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4. Confirm that **Session (*.mvw)** is selected from the **Save as type** drop-down menu.
 5. Click **Save**.

This saves your current work session as a session script file called Demo1.mvw.

Step 4: To exit the program.

1. From the **File** menu, select **Exit**.
A dialog displays prompting you to save the session.
2. Click **No**, since you saved the session in the previous step.

For more advanced plotting options, refer to the HyperGraph tutorials.