



Altair

HyperWorks

Altair HyperGraph 3D 2019 Tutorials

HG3D-2010: Editing Surface Plots


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In this tutorial, you will learn how to:

- Work with the **Axes** panel
- Edit curve attributes
- Contour line plots
- Use the **Edit Legend** dialog

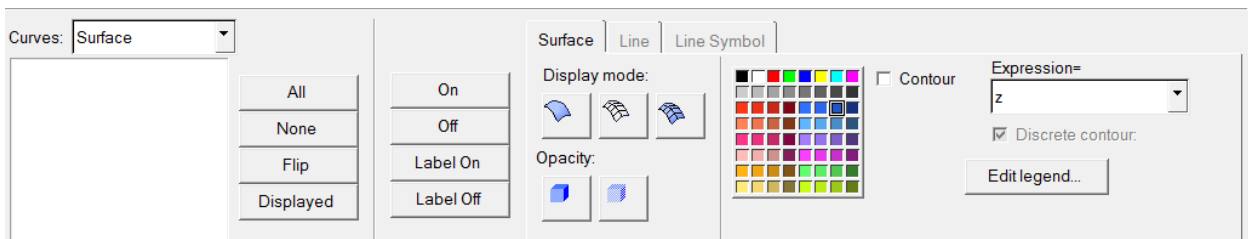
Tools

The **Curve Attributes** panel can be accessed one of the following ways:


- From the toolbar, click the **Curve Attributes** icon, .
- Or
- From the menu bar, select **Curves > Curve Attributes**.

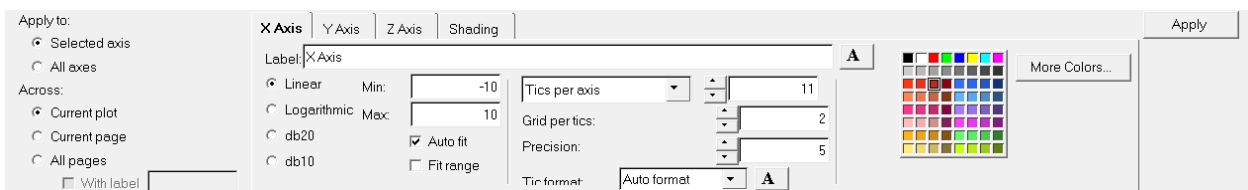
Surface attributes, such as **Surface** style, color, and weight are on the **Curve Attributes** panel. This panel also allows you to contour the surface and edit the legend.

Surface List: The **Surface** list displays the names of all surfaces in the active window.



The **Axes** panel can be accessed one of the following ways:

- From the toolbar, click the **Axes** icon, .
- Or
- From the menu bar, select **Annotations > Axes**.

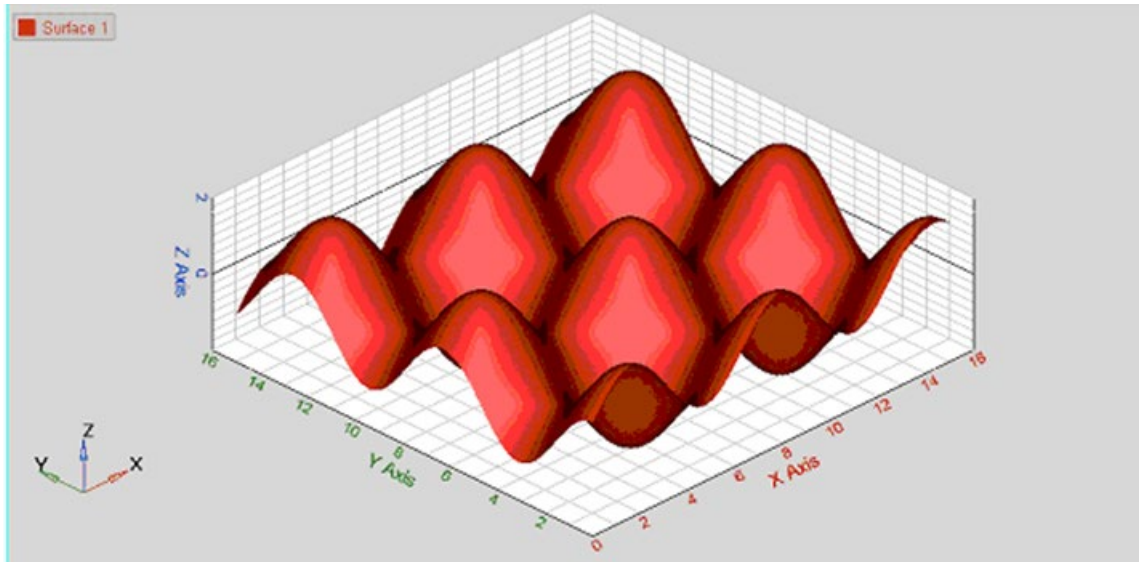


Axis attributes such as labels, color, and scaling can also be modified using the **Axes** panel.


Exercise: Editing Surface Plots

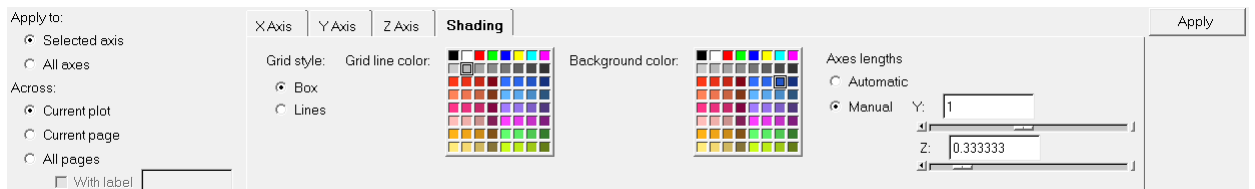
Step 1: Open session file.

1. From the menu bar, select **File > Open > Session**.
2. Select the file `Curve_Attributes_Surface.mvw`, located in the `3dplotting` folder, and click **Open**.

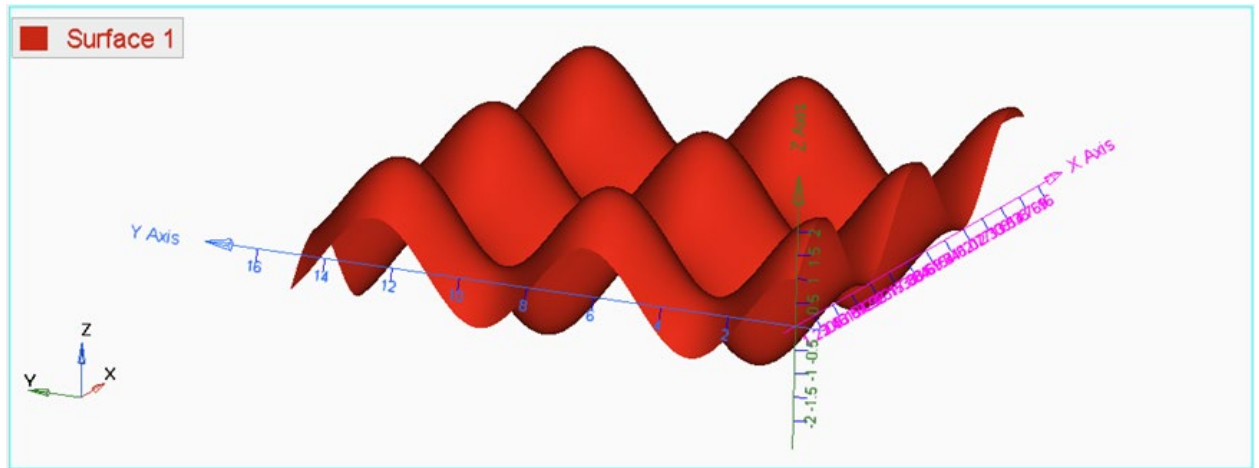


Step 2: Working with the Axes Panel

1. Click the **Axes** panel icon, .
2. Pick a color from the color palette for the **X** axis.
3. Change the number of **Tics per axis**. Note what happens to the values on the **X** axis of the screen.
4. Click on the tabs for **Y** and **Z** axes, respectively, and change the colors of the respective axis.
5. Click on the **Shading** tab.






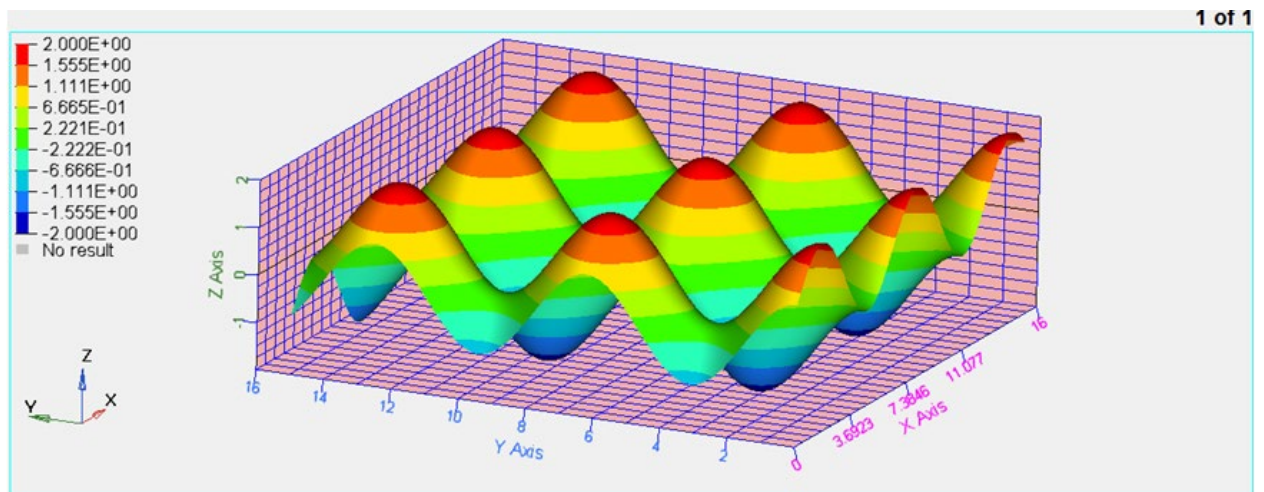
6. Verify that the **Grid style:** is **Box** and change the **Grid line color**.
7. Verify that the **Axes lengths** is set to **Automatic**.
8. Check the **Lines** option for **Grid style**.



9. Change the **Background color** by selecting a color from the palette.
10. Go back to the **Box** option for **Grid Style**.



Step 3: Editing the curve attributes and contouring the plot

1. Click on the **Curve Attributes** panel icon, .
2. Verify that the **Surface** tab is active.
3. Change the **Display mode** of the surface to meshed by clicking  from the **Display mode** options in the panel.
4. Change opacity for the surface to **Transparent** by clicking .
5. Change the **Display mode** back to without mesh lines and to solid opacity.
6. Check the **Contour** option.
7. Select the axis in the **Expressions =** drop-down menu to be **Z** axis.



8. Repeat the previous step for the **Y** Axis.

Step 4: Using the Edit Legend dialog

1. Click **Edit legend**.
2. Experiment with the following:
 - Change the numeric format.
The format automatically changes in the legend box.
 - Change the numeric precision
 - Change the number of levels.
The number of color bands in the legend box automatically changes.
3. Click on a number in the legend box and enter a new value.
4. Press ENTER.
The edited value is displayed in bold font. The remaining values linearly interpolate.
5. Add a header and footer to the legend.
 - Activate the **Header** check box and enter text in the text box.
 - Click the font button  and change the font type and size.
 - Click **OK**.
 - Activate the **Footer** check box and enter text in the text box.
 - Click the font button  and change the font type and size.
 - Click **OK**.
 - Click **Apply**
6. Change the color of a legend band.
 - Click on a color band.
 - Select a new color.
 - Click **OK**.
 - Change another color.
7. Interpolate colors between two color bands.
 - Click **Interpolate**.
 - Click on the first changed color.
 - Click on a second changed color.
 - The colors between the two selected colors are interpolated.
8. Click **Apply**.

Step 5: Save legend settings for future use.

Once you have completed your legend settings, you can save them for future use. Items that can be saved are listed in the Save options section.

1. Activate the check boxes for the attributes you want to save.
2. Click **Save....**
3. Designate a file name.
Files are saved in Tcl format.
4. Click **Save**.
5. Click **Default** to return to the default settings.
6. Click **Open...** to open the saved file and load the previously determined legend settings.

The contour colors and legend are retrieved just as you saved them.