



Altair

HyperWorks

Altair HyperWorks Desktop 2019 Tutorials

HWD-0070: Summary Tables Using Report Overlay

HWD-0070: Summary Tables Using Report Overlay

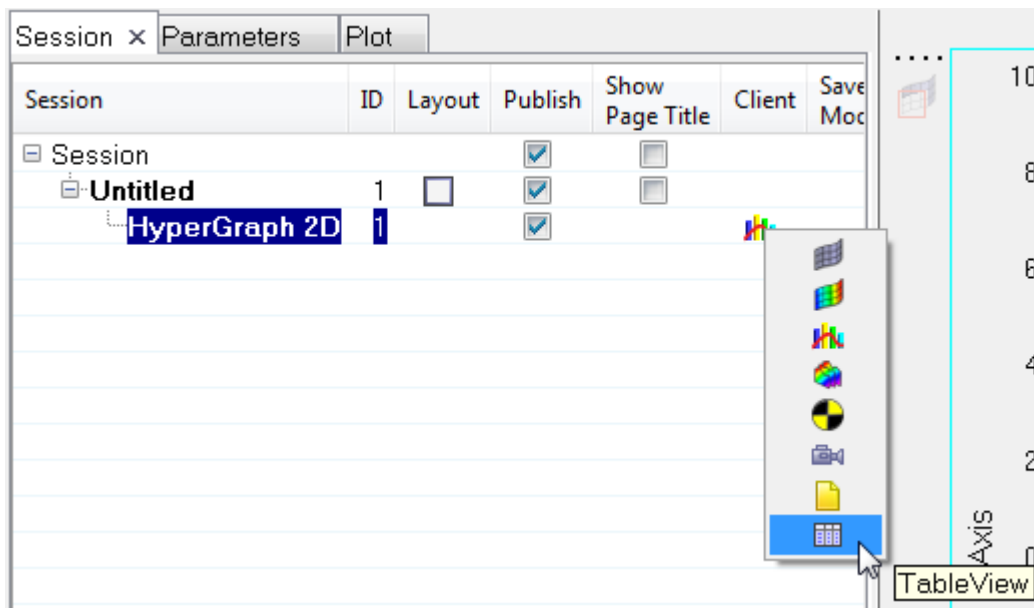
In this tutorial you will learn how to:

- Use the Append as Row and Append as Column overlay modes in TableView
- Use the Parameters Browser
- Use the Flexible Reports Panel to overlay a report

Tools

TableView creates an Excel-like spreadsheet inside of HyperWorks Desktop. You can use Templex expressions inside of a cell to synchronize with HyperGraph and create summary tables that update accordingly using report templates. Value-dependent formatting allows for the easy detection of critical key performance indicators (KPI's). Basic spreadsheet functionality to format and edit table cells is also available. You can copy data from TableView and paste it into an Excel spreadsheet, and vice versa.

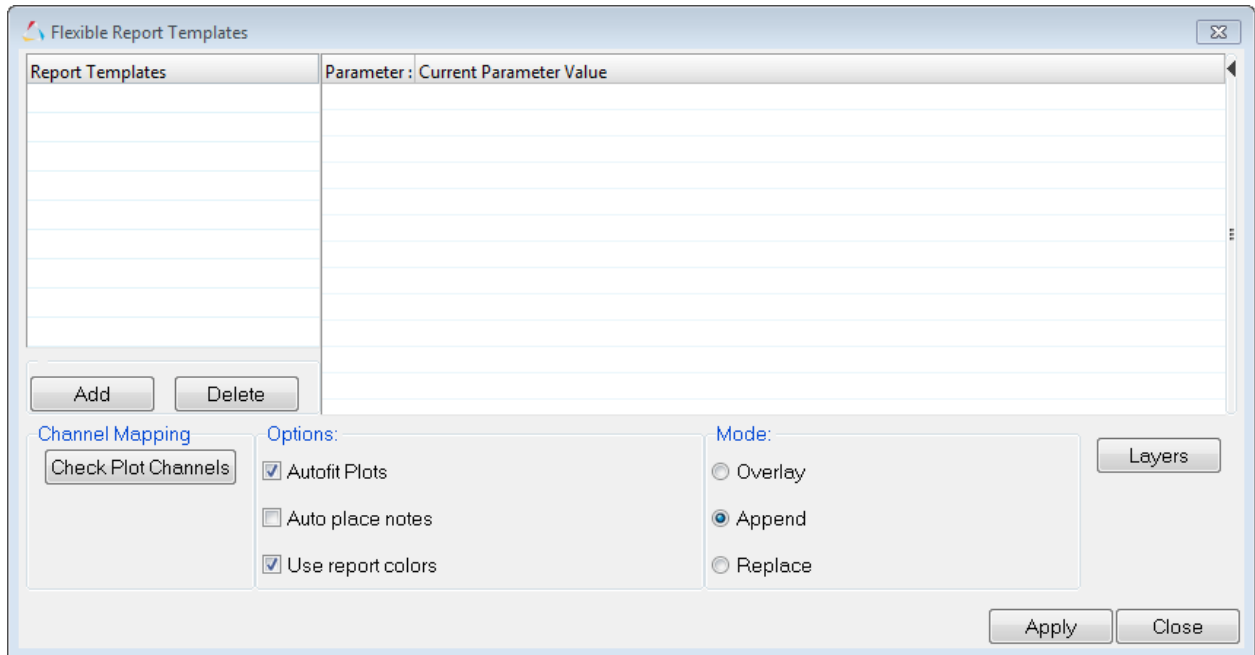
To access TableView, select **TableView** from the client selector context menu in the Session browser.



TableView option

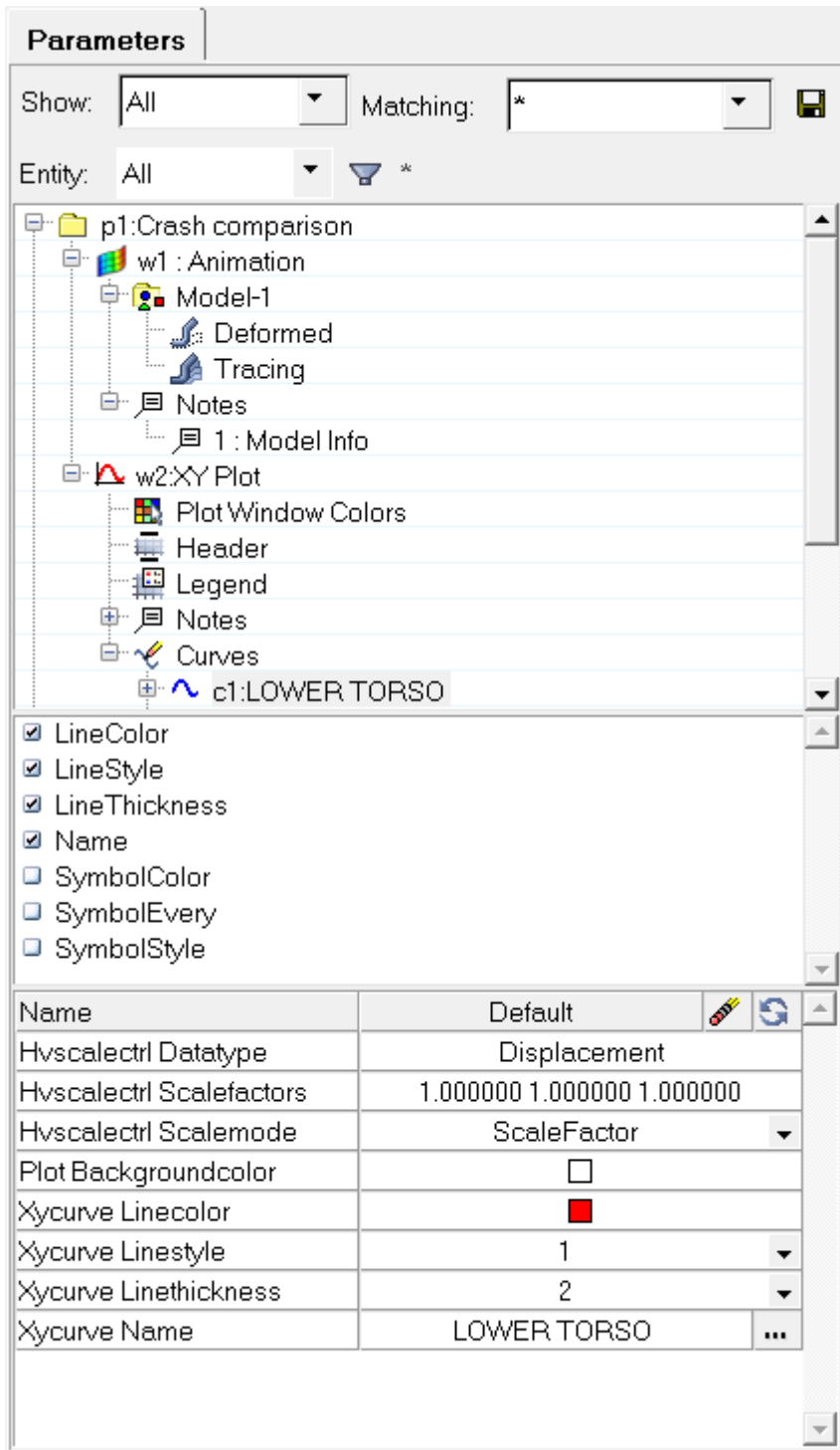
To access the **Flexible Reports Templates** panel, click the **Open Report Panel** icon, , from the **Reports** toolbar.

The **Flexible Report Templates** panel allows you to add or overlay predefined page sets to the current session. This replaces the **Reports** panel from earlier HyperWorks Desktop versions. The panel allows you to easily compare test and simulation data. In addition to the standard Report panel features, Channel Mapping is available, which allows you to reconcile mismatched channels (Type, Request and Component data). You can save the reconnected channels to a configuration file and use this file later. From the panel, you can directly edit parameter attributes for parameters created with the Parameter browser.



The **Parameter** browser, which is used with report templates, lets you parametrize almost everything in a session file or report template and automate a variety of analysis processes in HyperWorks Desktop. The reality of automation is that it is not always desirable to re-apply automation scripts exactly as they were originally defined. To remedy this, the Parameter browser includes a graphical user interface for defining parameters that can be changed when an automation script is executed. After the parameters are defined, you can save the automation script and run it from the Report Templates panel.

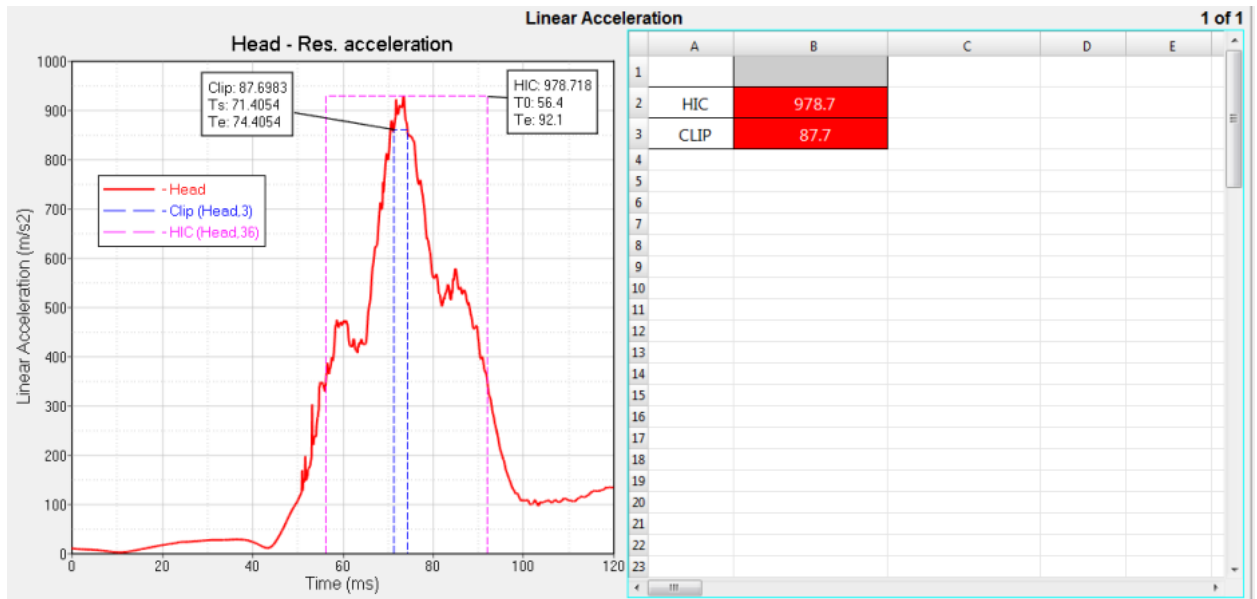
To display the browser, click **View > Browsers > HyperWorks > Parameters**.



Exercise 1: Append as column overlay mode in TableView

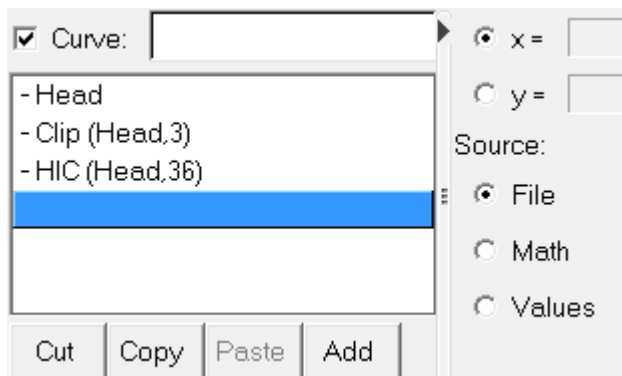
Step 1: Open Session File tableviewoverlayed_append.mvw.

1. From the **File** menu, click **Open > Session**.
2. Select the file ../tutorials/mv_hv_hg/reports/tableviewoverlayed_append.mvw and click **Open**.



Step 2: Empty curve for header label.

1. The session file contains an empty curve with one blank field in it. From the curve list in the **Define Curves** panel in HyperGraph, click the space below the HIC curve to select the empty curve.



This blank curve will act as a placeholder for a column heading to be displayed later in the tutorial.

2. Click the TableView window to make it the active window. Double-click on cells B1:B3 to view the Templex references in the header cells as well as the HIC and Clip values.

	A	B
1		{p1w1c4.label}
2	HIC	978.7
3	CLIP	87.7


Blank cell with Templex label reference

	A	B
1		
2	HIC	{hic(p1w1c1.x,p1w1c1.y,36)[0],%.1f}
3	CLIP	87.7

HIC curve Templex reference

	A	B
1		
2	HIC	978.7
3	CLIP	{clip(p1w1c1.x,p1w1c1.y,3)[0],%.1f}

CLIP curve Templex reference

3. Return to HyperGraph. Click the **Curve Attributes** icon, , from the HyperGraph 2D toolbar.
4. From the **Curve** list, click the blank space below the HIC curve (essentially selecting the fourth curve) to select the empty curve, and click **Label Off**.

Step 3: Add and delete rules in TableView.


Note This step is to be used for training purposes only, to learn how rules are added and deleted. It is not necessary to perform this step for this tutorial to work. The rules are already added to the table in this demo session.

1. Click the right-side window to activate TableView.

2. From the toolbar, click the **Conditional Formatting** icon, .

The **Conditional Formatting** panel can be used to define value-dependent rules and apply them as attributes within the selected cells. This allows you to easily detect critical key performance indicators (KPI's).

3. Click **New Rule** to add a rule.

- Click the cell under the **Operator** column and select the greater than sign from the drop-down menu.
- Under **Value**, enter 900.
- Leave the **Text Color** as black.
- Under **Cell Color**, click the color palette and select red.
- Under Cells, click in the field to activate it.
- Click the arrow at the end of the active cell, , then click the cell from the graphical area to apply this rule to the selected cell. For this tutorial, select the cell **B3**.

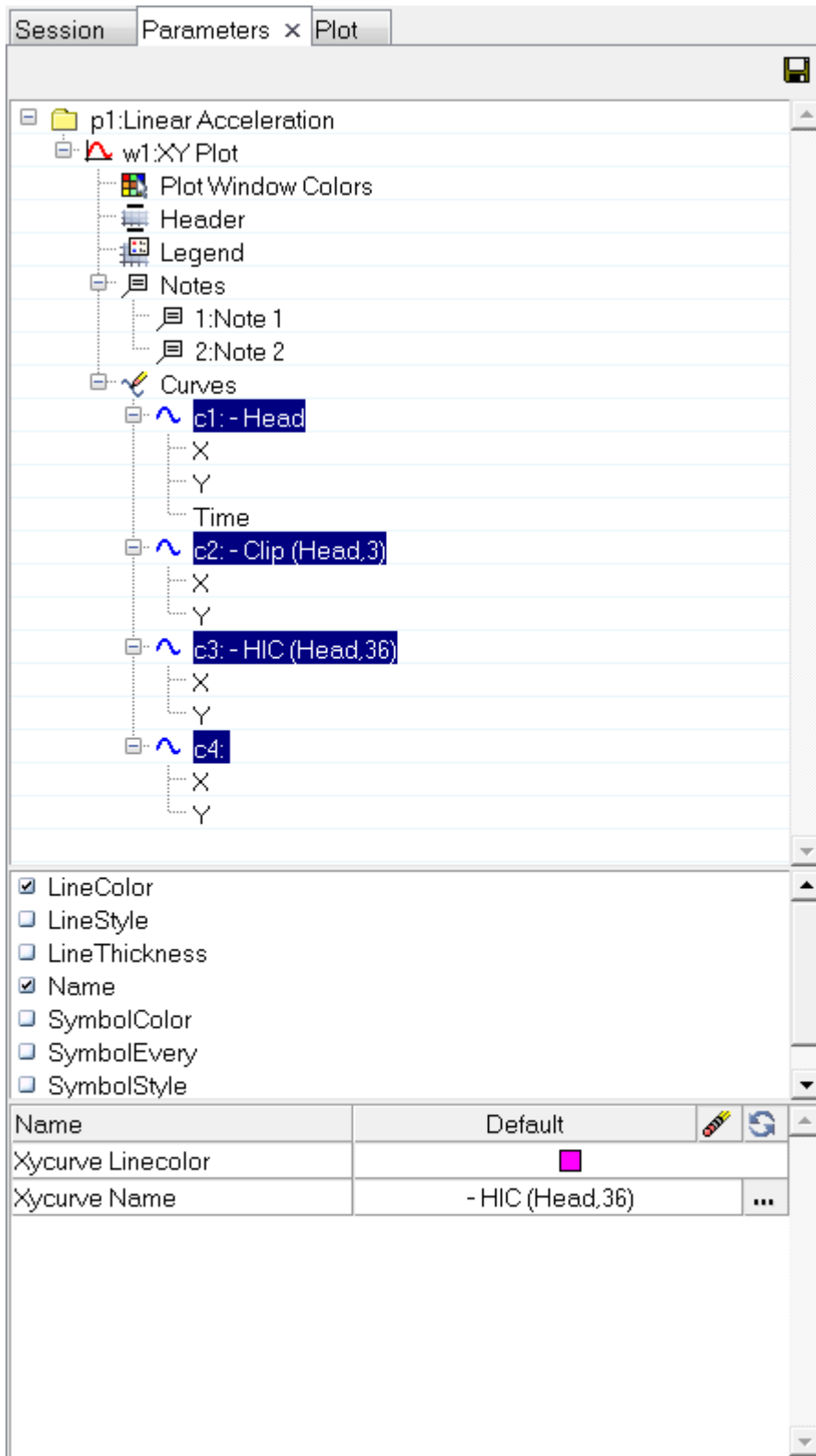
4. Select the row for the rule you just created and click **Delete Rule** to delete it.


Step 4: Create report parameters.

The following step describes how to parametrize the report template so that the prefix that describes the solver run is displayed in the curve name as a prefix, as well as in the table header row. In addition, a parameter is created which ensures that all notes and curves from the report have the same color.

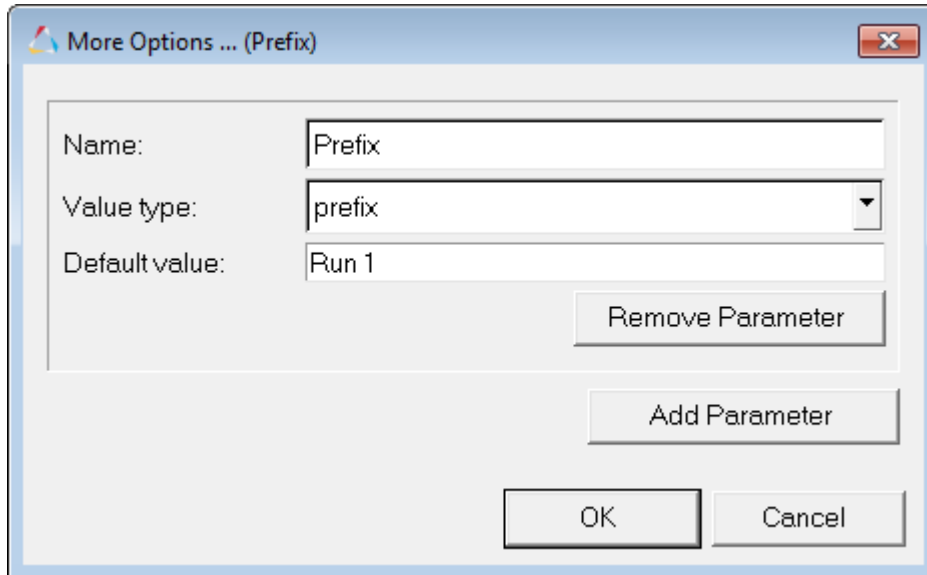
1. Click **View > Browsers > HyperWorks > Parameters** to open the Parameters browser.
2. From the browser, right-click on the top folder, **p1:Linear Acceleration**, and click **Expand All**.
3. Under **Curves**, select **c1: Head**, right-click and select **Select All** from the menu. This selects all the curves.

4. Select **LineColor** and **Name**.



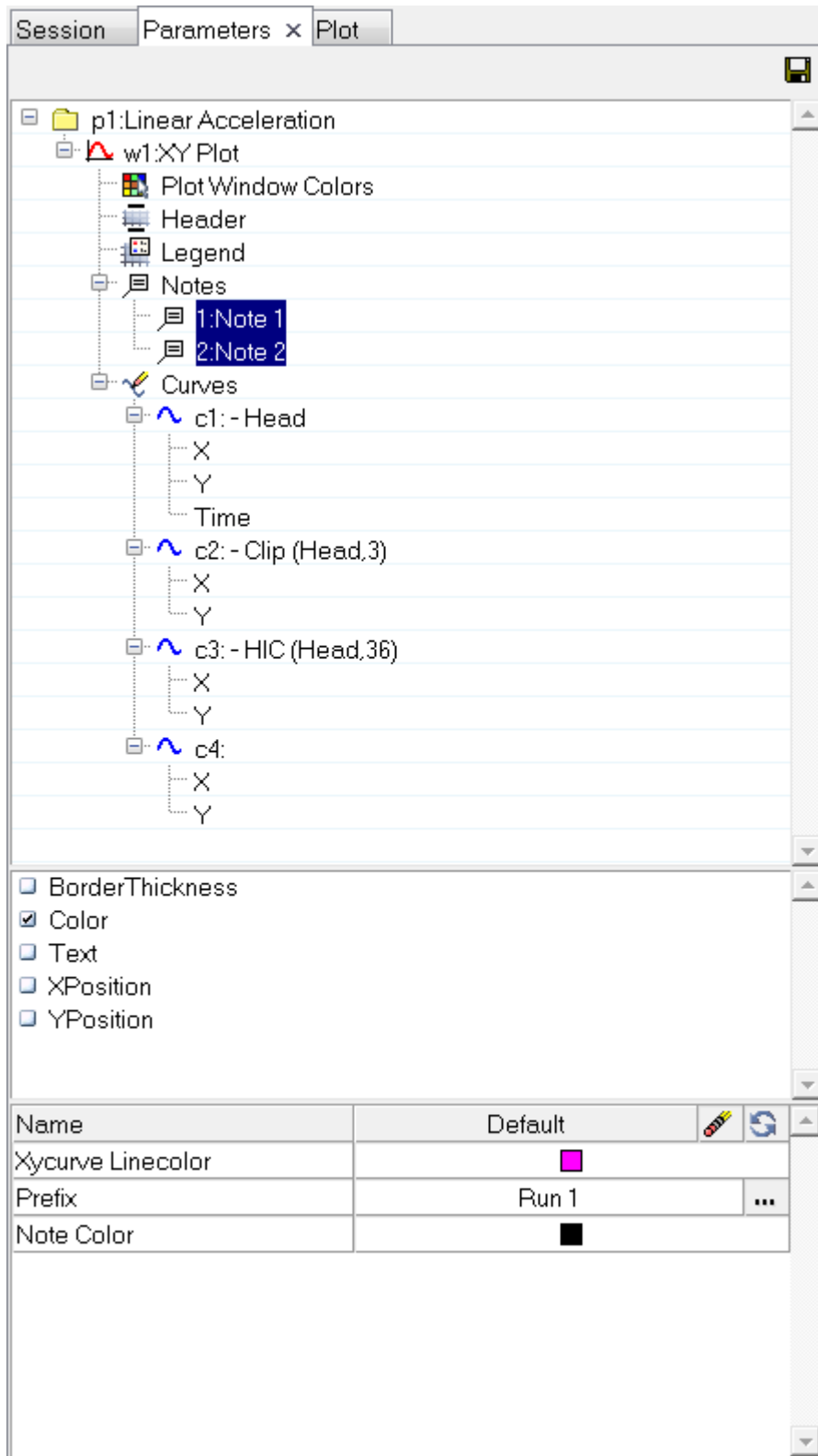
5. Select **Xycurve Linecolor** and **Xycurve Name**.
6. From the parameter property table area at the bottom of the browser, click  on the right side of the row **Xycurve Name** to display the **More Options** dialog.

7. Enter the following:
 - For **Value type:**, select **prefix**.
 - For **Name**, enter Prefix.
 - For **Default value:**, enter Run 1.
 - Click **OK**.

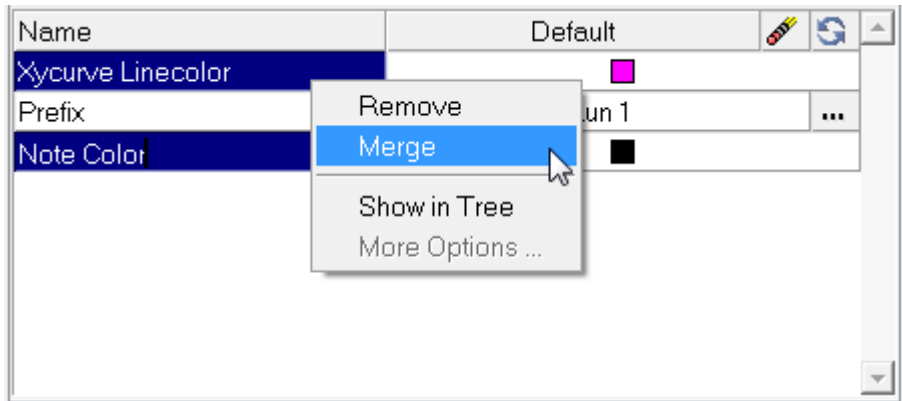


8. Under **Notes**, select notes 1 and 2 from the list.

9. Click **Color**.



10. From the table area at the bottom of the browser, select **Xycurve Linecolor** and **Note Color**, right-click, and select **Merge** from the context sensitive menu.



Name	Default
Xycurve Linecolor	[Pink square]
Prefix	Run 1


If two or more parameters are selected, this option merges them into one automation script parameter.

Note Only parameters of the same type should be merged (for example, color, string, and so on).


11. For **Xycurve Linecolor**, under **Default**, click the color palette and select red.

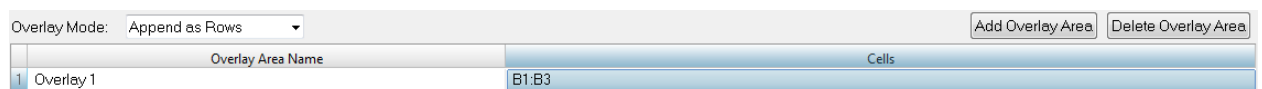
Exercise 2: Insert as column overlay mode in TableView

Step 1: Use the Overlay Mode in TableView and save the parameters as a report template.

1. Return to TableView.
2. Select the **Overlay Settings** icon, , from the toolbar.
3. From the **Overlay Mode:** menu, select **Append as Columns**.
4. Click **Add Overlay Area**.

Overlay 1 is added to the list.

5. Click in the area under **Cells** and notice the selector icon is displayed, .
6. Click the selector icon, and with the left mouse button, drag and select the cells B1:B3 in TableView.




7. Click **File > Save As** to save your session to your working directory.
8. Return to the Parameters browser.

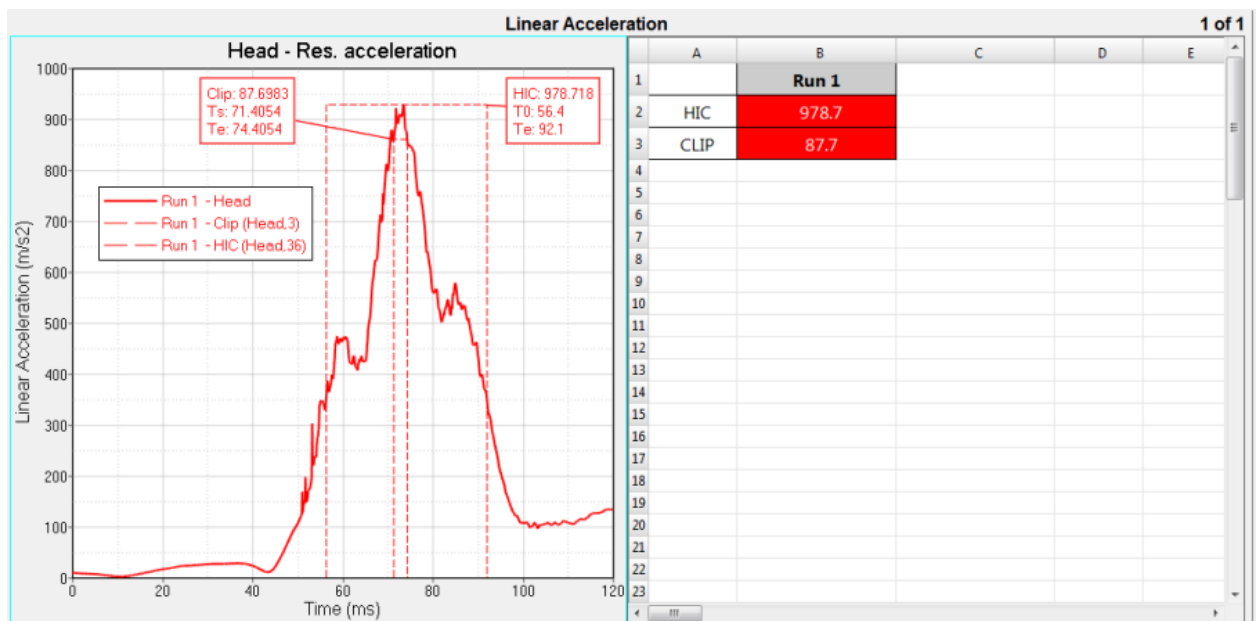
- Click the **Save** icon from the **Parameters** browser and save your parameterizations as a report template to your working directory.

For **File name**, enter `report_append_as_column1`, and for **Save as type:**, select **Report Template**

The same report created by this exercise is also available in the tutorial directory.

`../tutorials/mv_hv_hg/reports/report_append_as_column.tpl`.

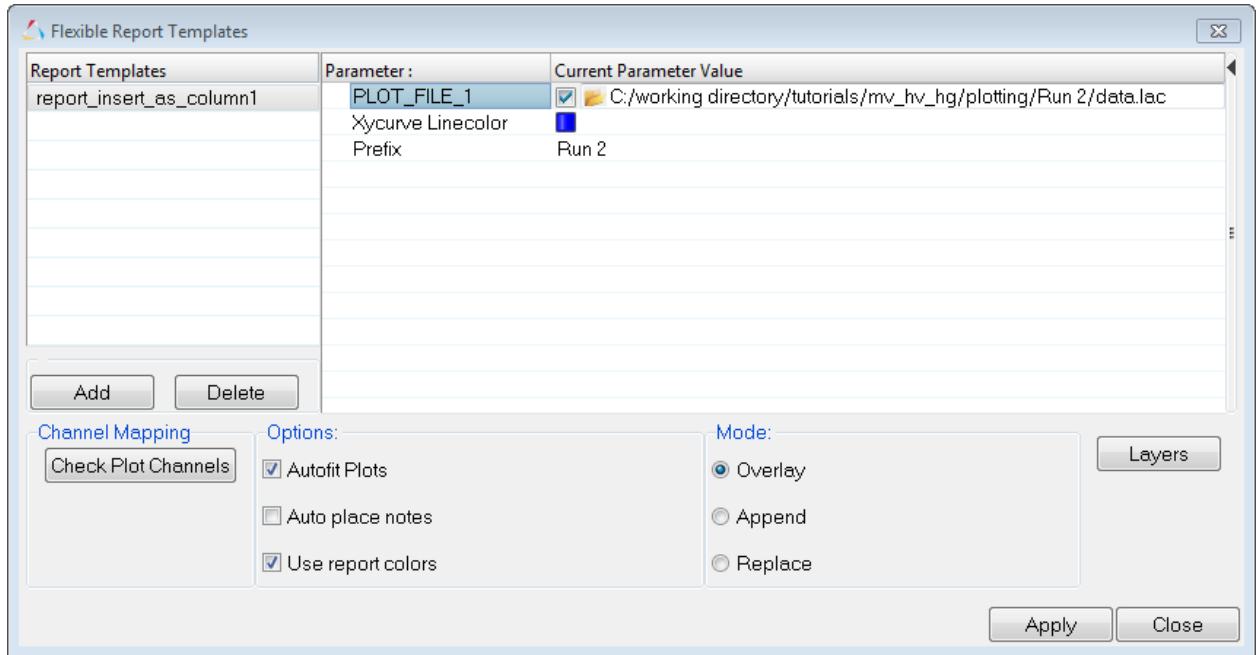
- From the **Reports** toolbar, click the **Flexible Reports Panel** icon, .
- You will see that the report was already loaded at the time of creation. If you want to load an existing report, click **Add** to add the report template saved in step 9. Click **Close** to close the panel.
- Click **File > New > Session**. Click **Yes** to continue with the new session.
- Return to the **Flexible Report Panel**, under **Mode** make sure **Append** is selected, and click **Apply**.
- Run 1** is added to TableView



- From the **Flexible Report Template** panel, under **Mode**, select **Overlay**.

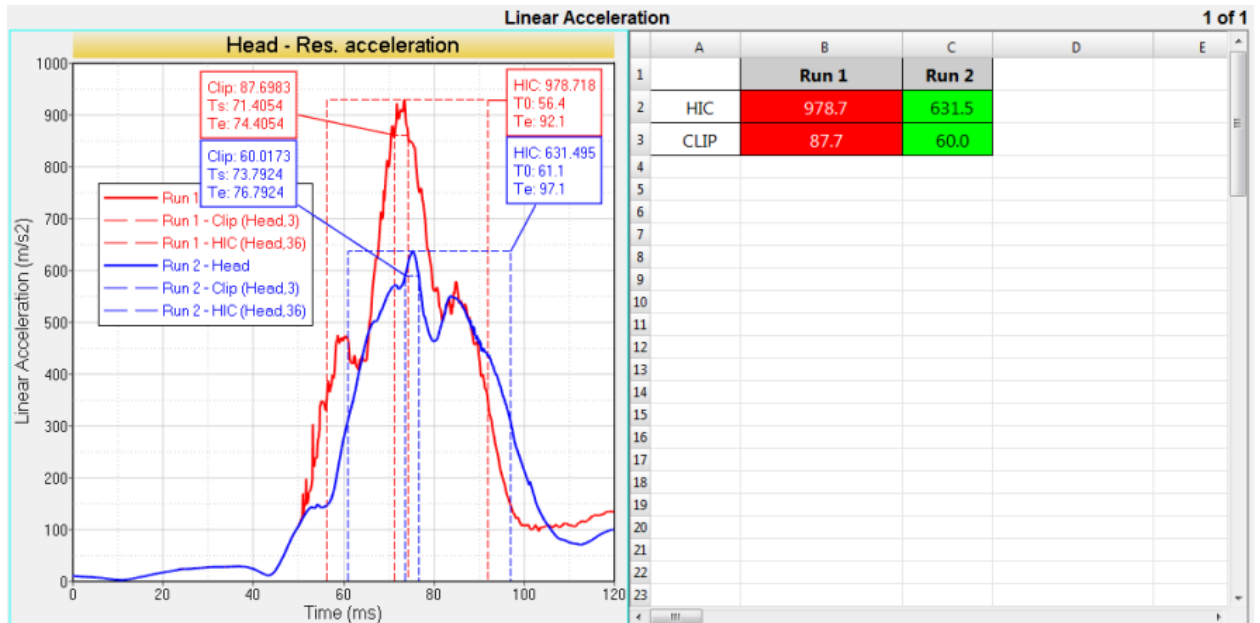
16. Under **Current Parameter Value**, enter the following:

- For **PLOT_FILE_1**, use the file browser icon to go to `../tutorials/mv_hv_hg/reports/Run 2/data.lac`, or just manually change Run 1 to Run 2.
- Change the **Color** to blue.
- For **Prefix**, enter Run 2.



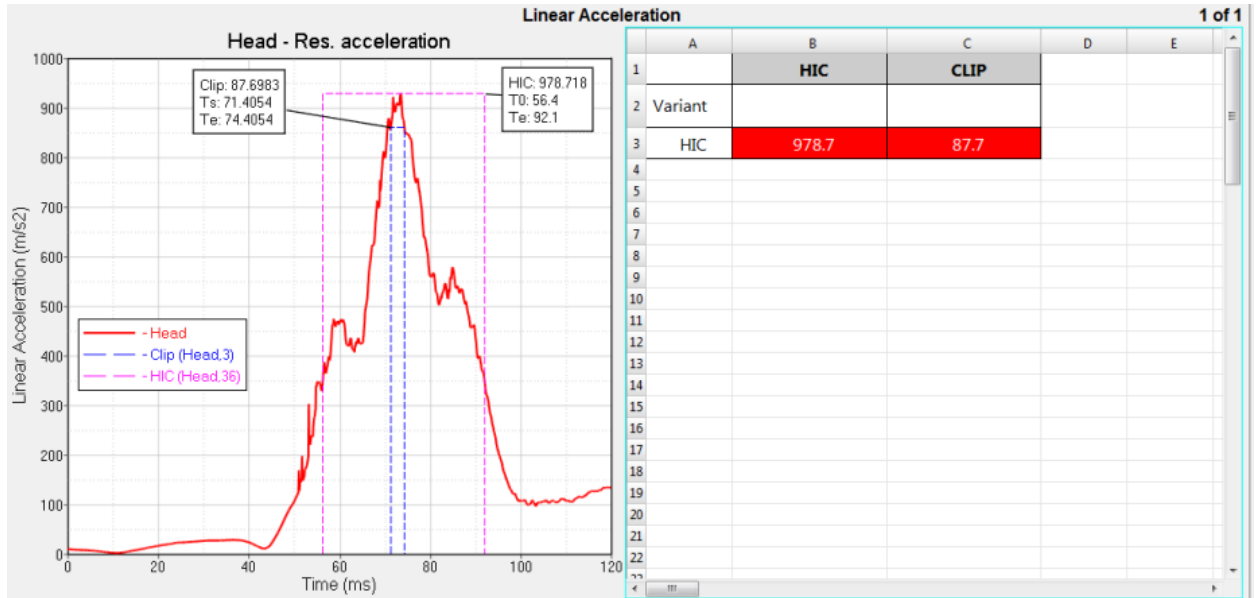
17. Click **Apply** and **Close**.

Run 2 is added TableView.





Step 2: Open Session File tableviewoverlayed_insert.mvw.

1. From the **File** menu, click **Open > Session**.
2. Select the file ../tutorials/mv_hv_hg/reports/tableviewoverlayed_insert.mvw and click **Open**.



3. Like the tableviewoverlayed_append.mvw session file, there are two empty curves being used as placeholders. Click the cells in the **Variant** row, under HIC and CLIP to view them.
4. Double-click on cells B1:B3 to view the Tempex references in the header cells as well as the HIC and Clip values.

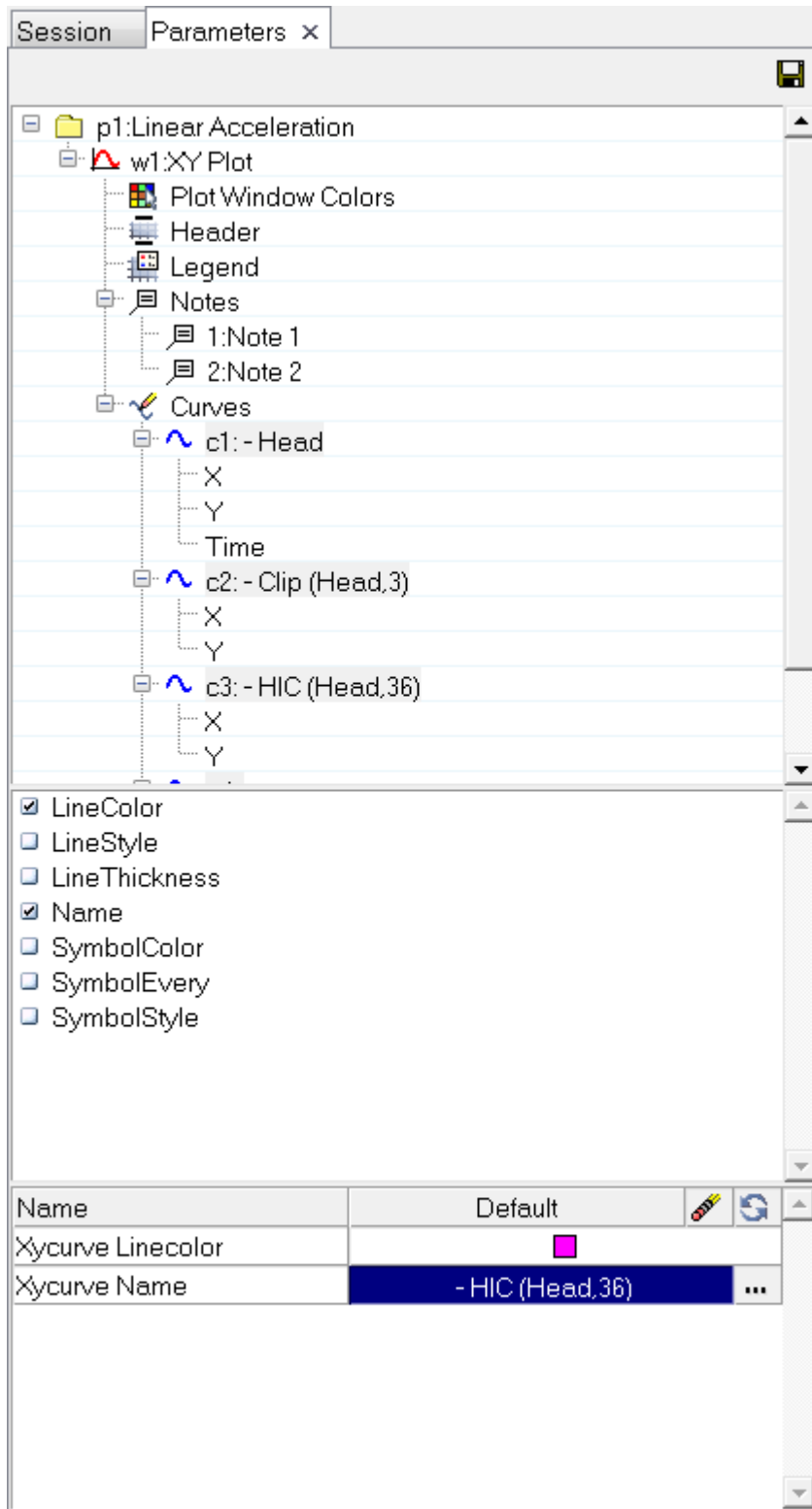
Step 3: Use the Insert as Columns overlay mode.


1. Go to the **Overlay Settings** panel, , in TableView,
From the **Overlay Mode:** menu, select **Insert as Columns**.
2. Click **Add Overlay Area**.
Overlay 1 is added to the list.
3. Click in the area under **Cells** and notice the selector icon is displayed, .
4. Click the selector icon, and with the left mouse button, drag and select the cells **B2:B3** in TableView.
5. Click **Add Overlay Area** again to add Overlay 2.
6. Repeat steps 3 and 4 to select the cells **C2:C3**.

Overlay Mode: Insert as Columns		Add Overlay Area	Delete Overlay Area
	Overlay Area Name	Cells	
1	Overlay 1	B2:B3	
2	Overlay 2	C2:C3	

7. Click **File > Save As** to save your session to your working directory.
8. From the Parameters browser, right-click on the top folder, **p1:Linear Acceleration**, and click **Expand All**.
9. Under **Curves**, select **c1: - Head**, right-click, and select **Select All** from the menu. This selects all the curves.

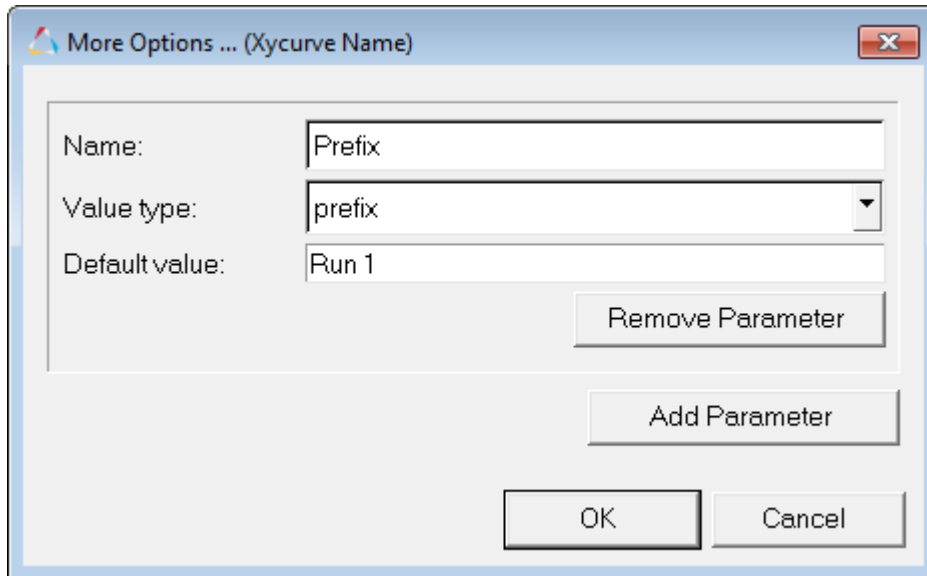
10. Select **LineColor** and **Name**.



11. From the table area at the bottom of the browser, click  on the right side of the row **Xycurve Name** to display the **More Options** dialog.

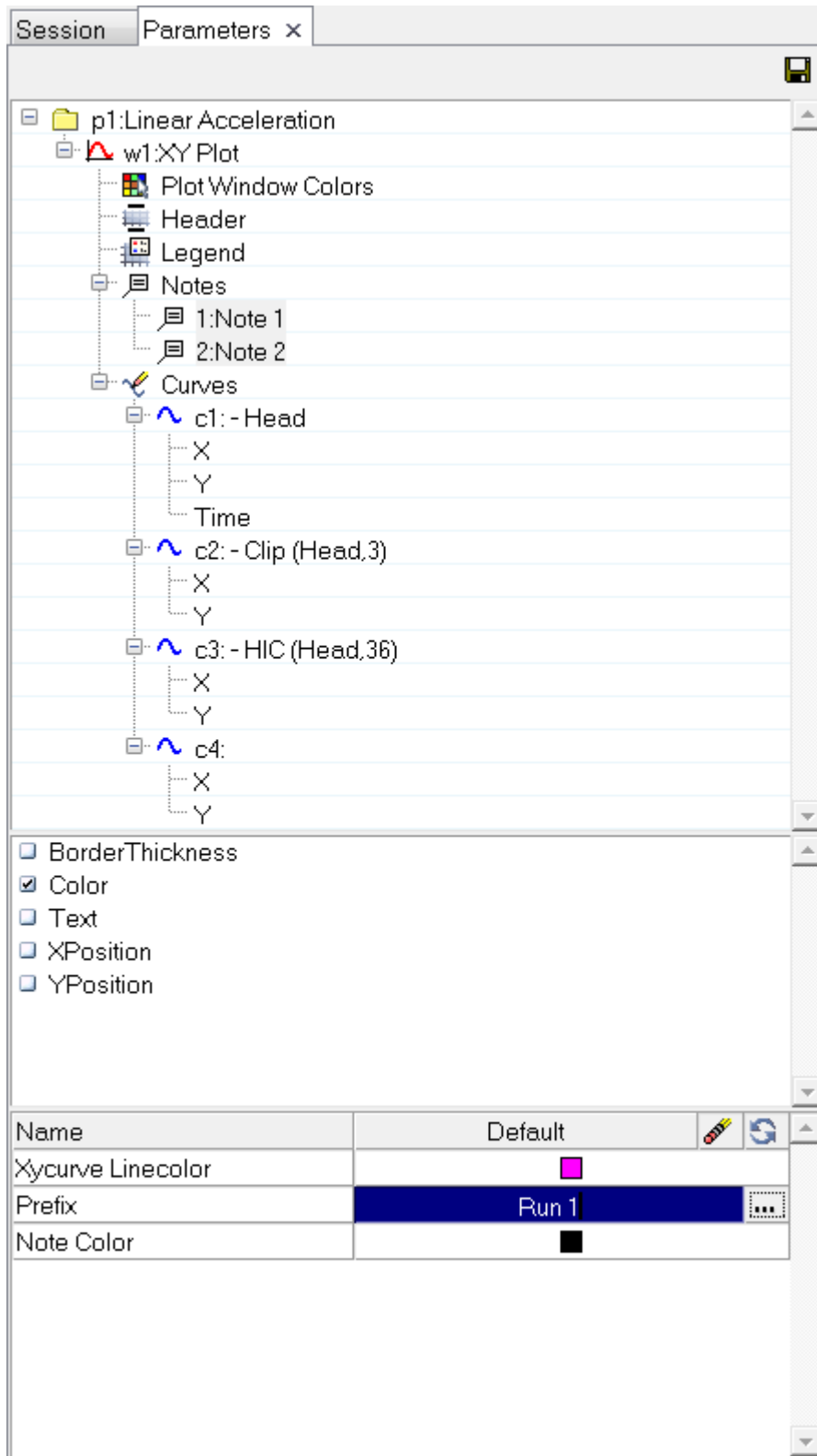
12. Enter the following:

- For **Value type:**, select **prefix**.
- For **Name**, enter Prefix.
- For **Default value:**, enter Run 1.
- Click **OK**.




13. Under **Notes**, select notes 1 and 2 from the list.

14. Click **Color**.

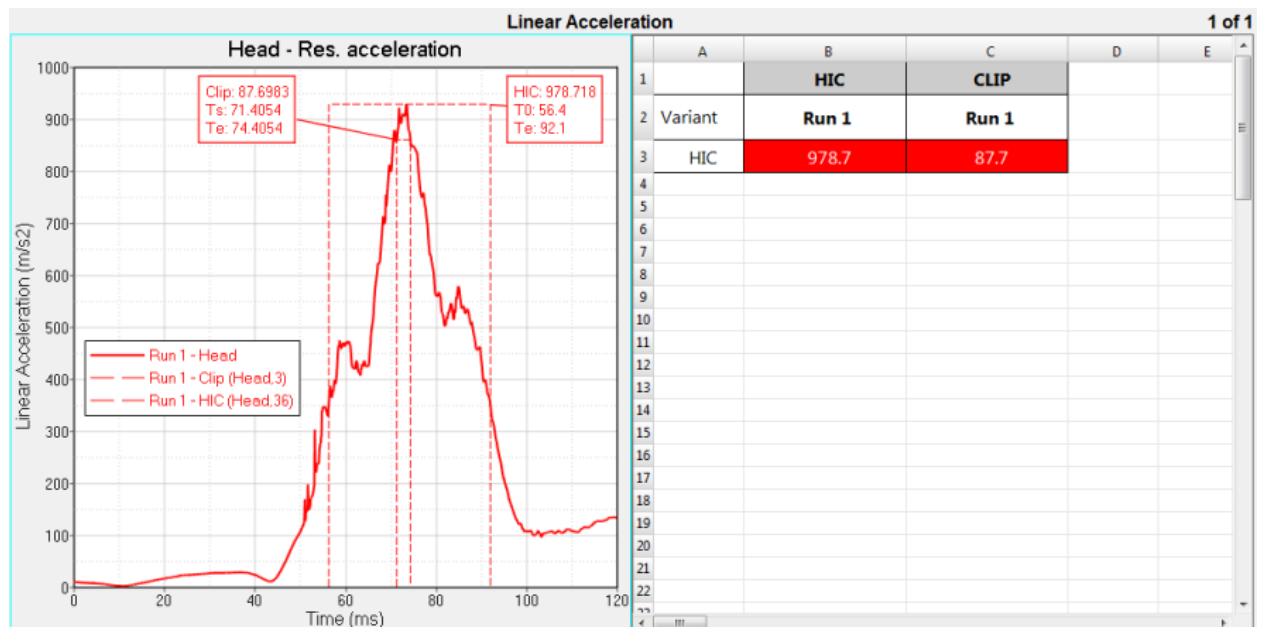


15. From the table area at the bottom of the browser, select **XycurveLinecolor** and **Note Color**, right-click, and select **Merge** from the context sensitive menu.

If two or more parameters are selected, this option merges them into one automation script parameter.

16. Under **Default**, click the color palette and select red.
17. Click the **Save** icon from the **Parameters** browser and save your parameterizations as a report template to your working directory.
For **File name**, enter `report_insert_as_column1`, and for **Save as type:**, select **Report Template**.
The same report created by this exercise is also available in the tutorial directory.
`../tutorials/mv_hv_hg/reports/report_insert_as_column.tpl`
18. From the **Reports** toolbar, click the **Flexible Reports Panel** icon, .
19. Click **Add** to add the report template saved in step 17, if not already displayed in the panel.
20. Click **File > New > Session** and answer **Yes** to continue.
21. Return to the **Flexible Report Panel** and under **Mode**, select **Replace**.
22. Click **Apply**.

Run 1 is added to TableView.



23. From the **Flexible Report Templates** panel, under **Mode**, select **Overlay**.
24. Under **Current Parameter Value**, enter the following:
 - For **PLOT_FILE_1**, use the file browser icon to go to `../tutorials/mv_hv_hg/reports/Run 2/data.lac`, or just manually change Run 1 to Run 2.
 - Change the **Color** to blue.
 - For **Prefix**, enter Run 2.

25. Click **Apply**.

Run 2 is added TableView.

