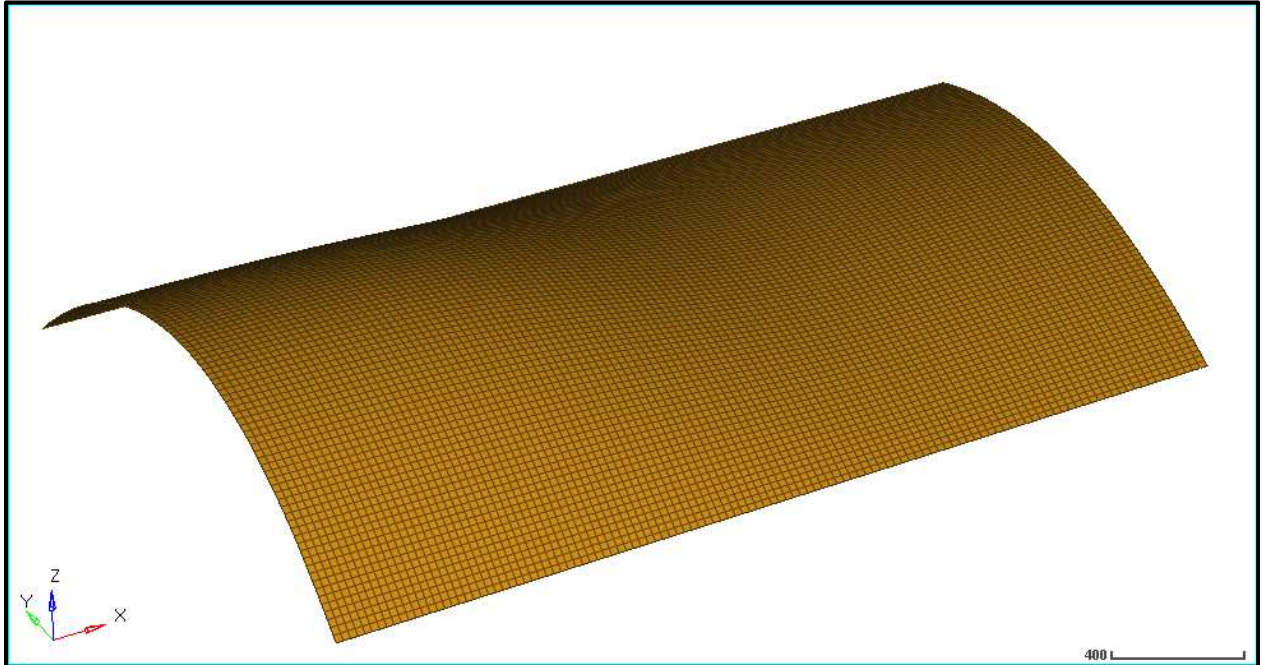


## Exercise 6a: Contouring Strength Ratios in HyperView

This exercise introduces the user to the use of HyperView for post-processing various composite results types and making modifications to a model to determine the effect of model changes on the solution.



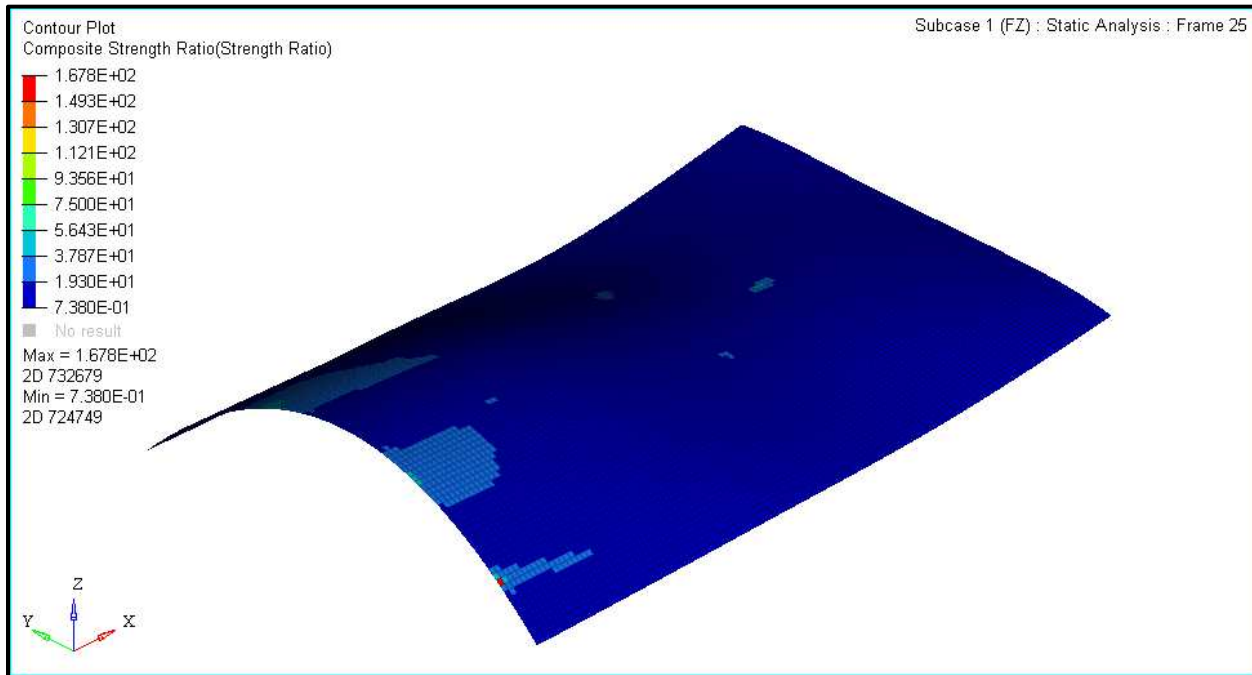
### Problem Setup

You should copy the file: `panel.h3d`, `panel.fem`

**Step 1: Open the model in HyperMesh Desktop with the OptiStruct user profile**

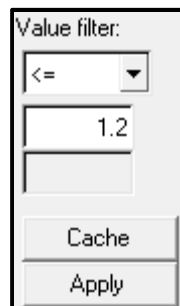
**Step 2: Use the Add Page  button to open a second page in the session**

**Step 3: Load the panel1.h3d file and contour the Composite Strength Ratio (s)**

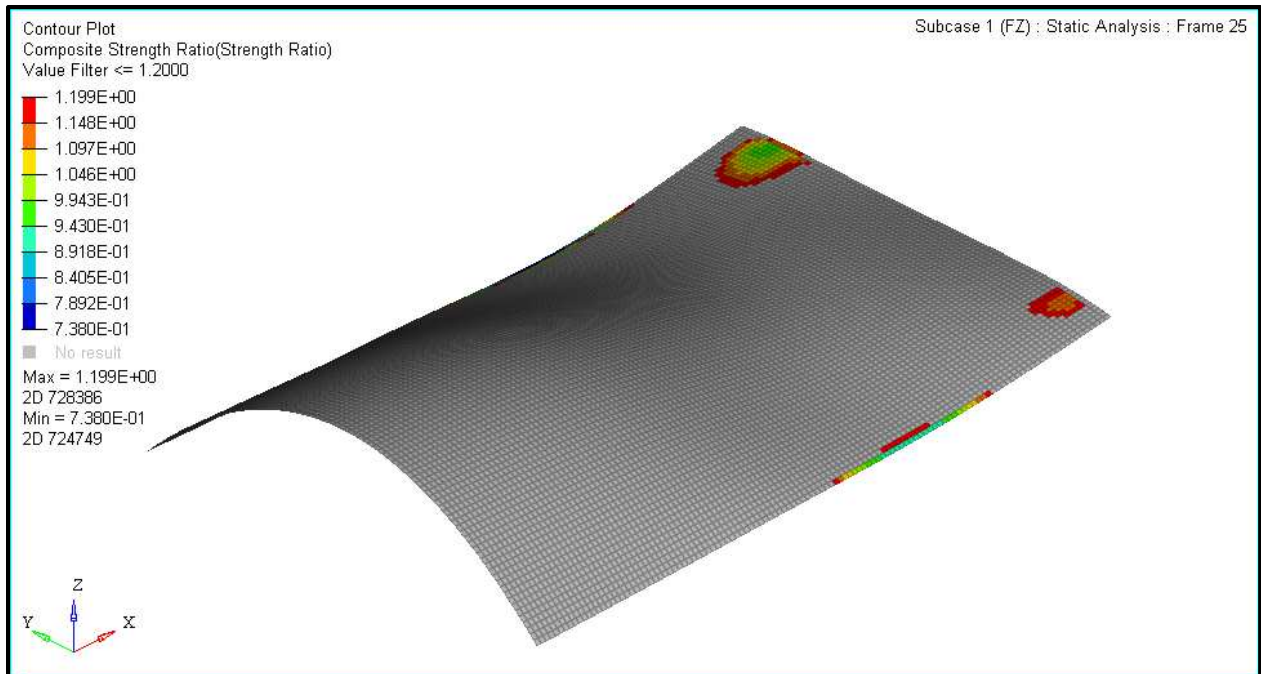


**Step 4: Alter the contour plot to only show results with  $SR \leq 1.2$**

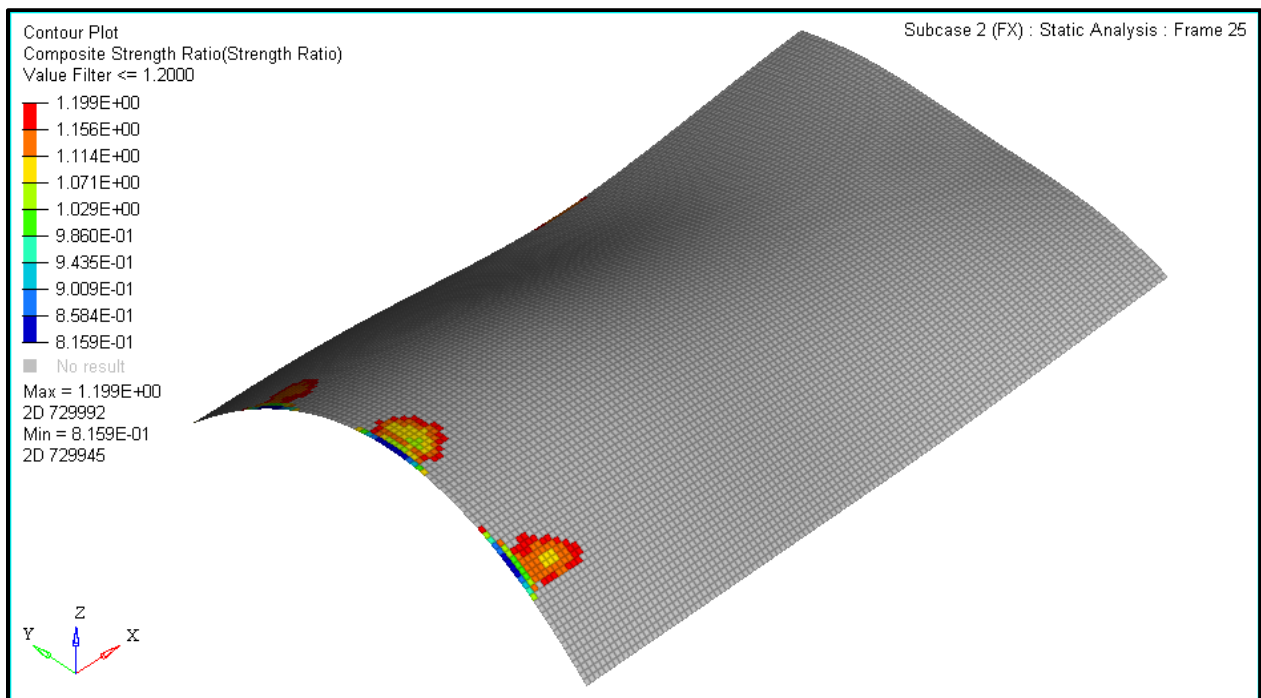
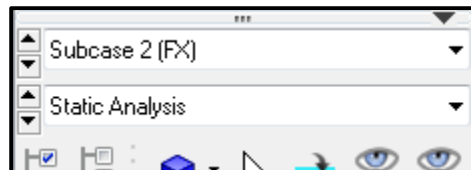
1. In the **Contour** panel of **HyperView**, set the **Value Filter:** type to  $\leq$  and the **Value Filter** value to 1.2.




2. Click **Apply** to replot the results with only the values selected.




3. Use the **Subcase Selector** to change the subcase to Subcase 2 (FX). The graphics area shows a new set of elements with low strength ratio.

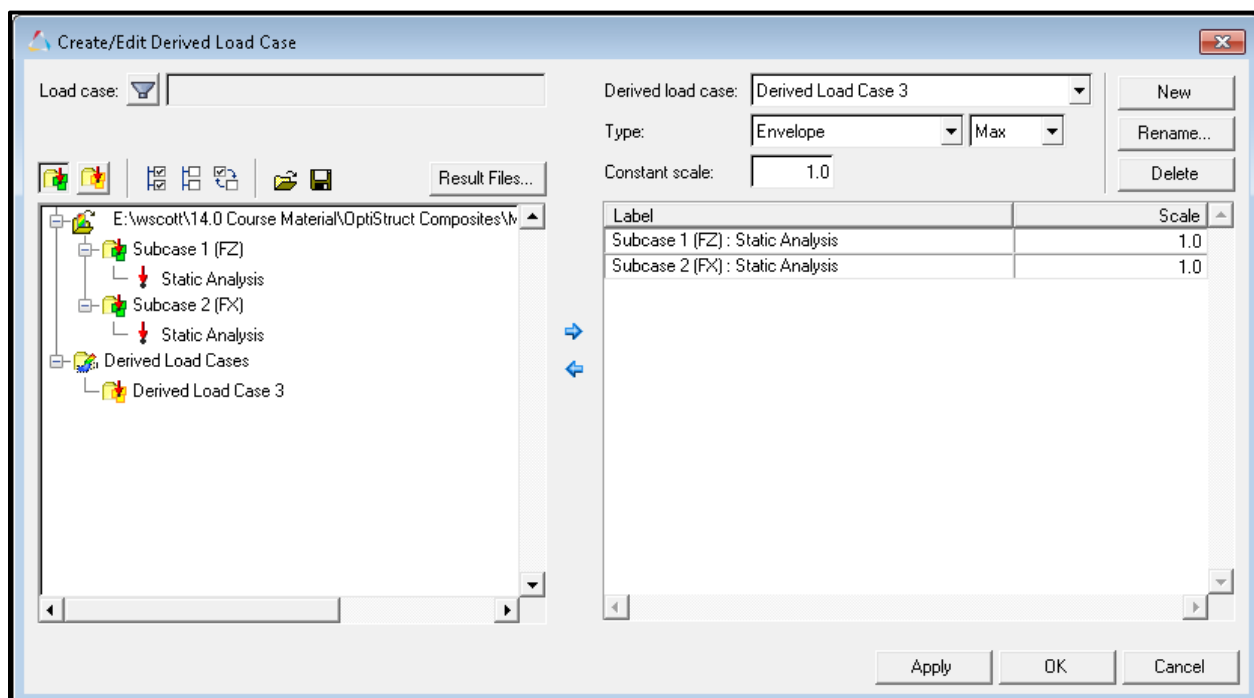


### Step 5: Create a new window with a copy of the existing plot

1. Use the **Page Window Layout** drop-down menu to change the page layout to Two Page  

2. Click in the leftmost of the two windows to activate it, which is indicated by a blue border.
3. From the **Edit** menu, select **Edit > Copy > Window**.
4. Click in the rightmost window to activate it and select **Edit > Paste > Window** from the **Edit** menu. The model, along with its plots and legend, are copied to the second window.

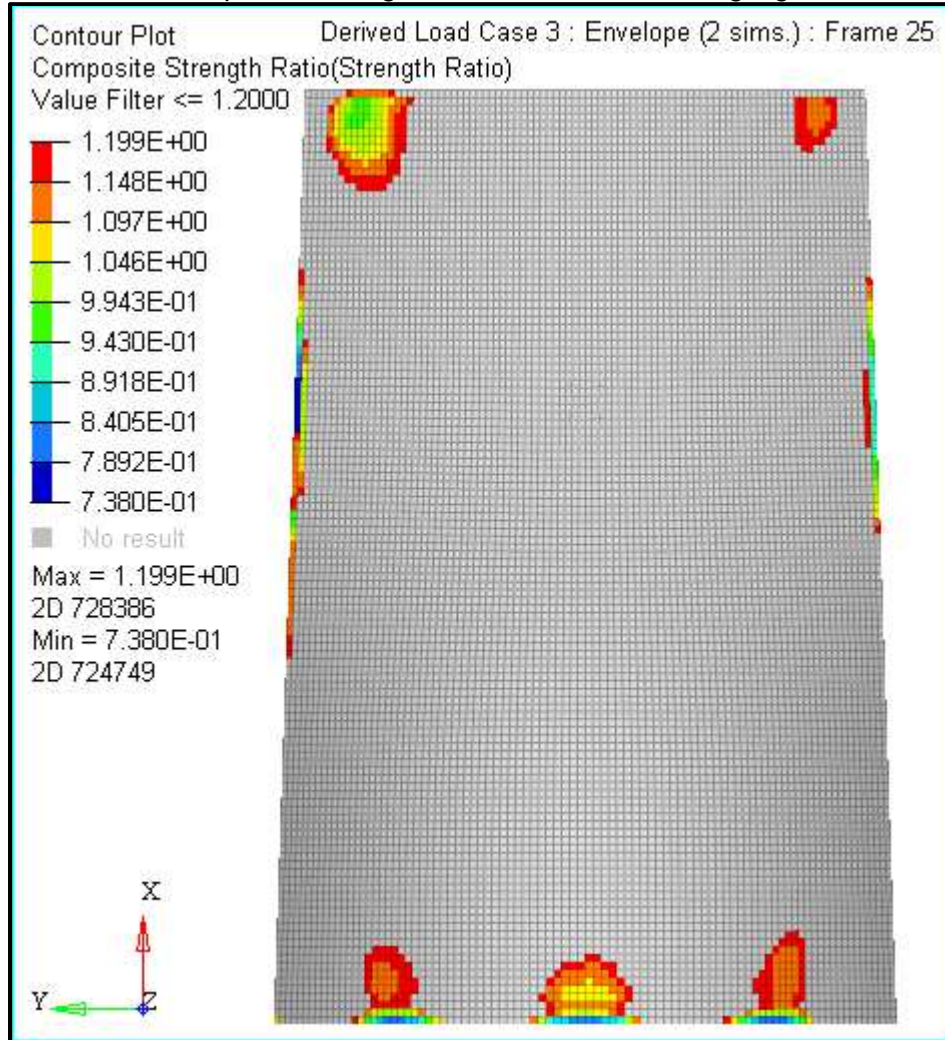
### Step 6: Create a new derived loadstep for use with an envelope plot

1. In the **Results** menu, select **Results > Create > Derived Load Steps**. The **Create/Edit Derived Load Case** dialog box opens.
2. Click **New** in the upper right hand corner to start creating a new derived load case in this session.
3. Set **Type:** to Envelope and subtype to Max.
4. Expand the **Subcase 1 (FZ)** folder in the results list and click on the Static Analysis results listing under it to select it. Click on the left-to-right arrow  to add this loadcase to the new derived loadcase.
5. Similarly, add the Static Analysis from **Subcase 2** to Derived Load Case 3.
6. Click **Apply** to complete Derived Load Case 3 with the options selected and click **OK** to exit the dialog box. The new load case is now available to perform contouring operations on.

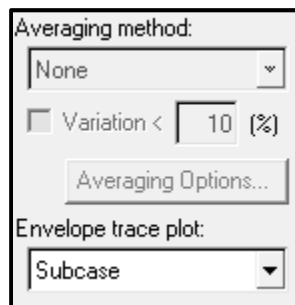


### Step 7: Use the new derived results to determine which subcases are responsible for the low strength ratio

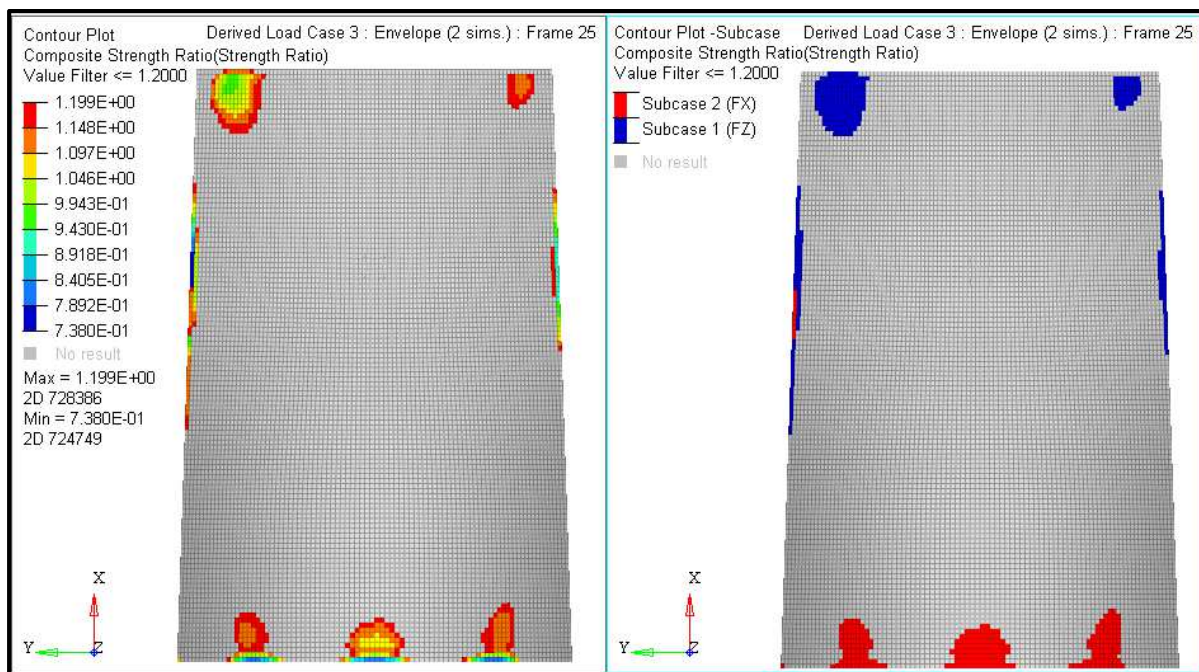
1. Activate the first window and change the loadcase from Subcase 1 (FZ) to Derived Load Case 3. Because the derived load case contains information from both subcases, all elements which have Composite Strength Ratios below 1.2 are highlighted.



2. Activate the first window and change the loadcase from Subcase 1 (FZ) to Derived Load Case 3. Change the **Envelope trace plot:** type to Subcase and click **Apply**. Now the side by side display illustrates areas which show low strength ratios and which subcases are responsible for the low ratio.



## Chapter 6: Composite Post-Processing Exercises



**Step 8: Save the current session as `comp_sr.mvw`**

**Tip:** The option to save a session can be found under **File > Save As > Session**.