Compressible Flow Over an Airfoil - Exercise

Author(s): Sebastian Vecchi, ANSYS Inc.

Exercise - Mesh Refinement

Looking more closely at the Stanford results, we can see that they captured a shock wave along the upper section of the wing, as indicated by the tight clustering of contour lines in-between the blue and green bands. We need to refine the AIM mesh to capture that same effect in as much detail.

Here is an image of the Stanford mesh.

Notice that it is much more refined than our original AIM mesh.

Return to the **Mesh** task, then move the **Mesh resolution** slider to the maximum position. Next, select **Mesh Controls** > **Boundary Layer** add increase the **Maximum layers** to 10. Return to the **Mesh** panel, then press **Add** to the right of **Size Controls**. Choose **Face Sizing**, then select the top and bottom surfaces of the wing and enter a size of 0.005 [m].

Return to the **Results** task and update the results. Have the maximum and minimum values gotten any more accurate as mesh was refined? Is the shock more easily identifiable?

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