Compressible Flow Over an Airfoil - Exercise

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Problem Specification

- 1. Start-Up
- 2. Geometry
- 3. Mesh
- 4. Physics Setup
- 5. Results
- 6. Verification & Validation

Exercise

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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