ANSYS AIM Transonic Flow over a Wing

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Transonic Flow over a Wing

Created using ANSYS 18.1

Problem Specification

This tutorial explores the three dimensional, transonic flow over an ONERA M6 wing. Created in the 70's, the ONERA M6 wing serves to validate numerical methods of simulation flows. The wing will be subjected to 0.8395 Mach, 460 degrees Rankine and rotated 3.06 degrees, which should produce a Reynolds number of 11.72 million at the inlet. The equations below show how the Mach number was converted to a velocity, which was used as the inlet velocity.

$$Mach\ \# = \frac{speed}{speed\ of\ sound}$$

$$Speed\ of\ Sound = 340.29\ m/s$$

$$Speed = 287.95\ m/s\ = 11336.56\ in/s$$

The M6 wing in the ONERA S2MA wind tunnel

Go to Step 1: Startup