FM24L_10455

XXI International Congress of Theoretical and Applied Mechanics
Warsaw, Poland, August 15–21, 2004

# Large-Eddy Simulation of Shock-Wave / Turbulent-Boundary-Layer Interaction

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A Large-Eddy Simulation (LES) is conducted to investigate the characteristics of the mean flow and the turbulence structure of the boundary layer along a compression corner. The compression corner has a deflection angle $\beta = 25^0$, and the mean free-stream Mach number is $M_\infty = 2.95$. The Reynolds number based on the incoming boundary layer thickness is $Re_{\delta 0} = 63560$ in accordance with reference experiments. An analysis of the flow computation shows a good agreement with the experiment in terms of mean quantities (shock position, separation zone length, skin friction and surface pressure distributions) and turbulence characteristics. A mechanism of turbulence amplification in the external flow by travelling compression waves is proposed. The existence of three-dimensional large-scale structures (Görtler-type vortices) is shown.

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