FLOW FIELD INVESTIGATION ON A DOUBLE DELTA WING

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Abstract

In this paper flow field characteristics of double delta wing have been studied both experimentally and numerically at different angles of attack ranging from 0° to 30° at a Reynolds number of 2 x 10^5 based on the root chord length of the wing model. Surface oil flow visualization hasbeen studied on the leeward surface of a sharp edged single beveled 76°/40° cropped double delta wing at subsonic wind tunnel facility. The flow physics is further validated with the help of surface pressure measurement in the context of surface flow pattern. Subsequently CFD (Computational Fluid Dynamics) analysis is carried out using ANSYS Fluent. Comparisons of both qualitative as well as quantitative measurement with experimental techniques and computational work have been carried out. For computational work, the computational domain is meshed with unstructured grids and SA-turbulence model is used.