World Academy of Science, Engineering and Technology
International Journal of Aerospace and Mechanical Engineering
Vol:12, No:04, 2018

Design and Numerical Study on Aerodynamics Performance for F16 Leading Edge Extension

Authors : San-Yih Lin, Hsien-Hao Teng

Abstract : In this research, we use commercial software, ANSYS CFX, to carry on the simulation the F16 aerodynamics performance flow field. The flight with a modified Leading Edge Extension (LEX) is proposed to increase the lift/drag ratio. The Shear Stress Transport turbulent model is used. The unstructured grid system is generated by the ICEM CFD. The prism grid around the wall surface is generated to simulate boundary layer viscosity flow field and Tetrahedron Mesh is used for the other computation domain. The lift, drag, and pitch moment are computed. The strong vortex structures upper the wing and vortex bursts under different sweep angle of LEX are investigated.

Keywords : LEX, lift/drag ratio, pitch moment, vortex burst
Conference Title : ICCFDM 2018 : International Conference on Computational Fluid Dynamics and Mechanics
Conference Location : Venice, Italy
Conference Dates : April 12-13, 2018

Open Science Index, Aerospace and Mechanical Engineering Vol:12, No:04, 2018 publications.waset.org/abstracts/85534.pdf