

Development and Correlations of Large-Scale Computational Tools for Flight Vehicles

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Abstract: The NCCS computing facility is utilized to demonstrate the applicability and predictive accuracy of CFD-based processes. Many aspects of CFD applications to generic airplane models will be shown including: grid convergence and effects of full Navier-stokes and turbulence models, aeroelastic processes for flutter and static aeroelastic analyses, simulations of control surface freeplay and aerodynamic lags due to transonic flow physics.