

## **Abstract**

This report studies the influence of turbulence models and various numerical scheme settings on simulation performance of transitional turbulence over a flat plate. The case chosen was the ERCOFTAC T3A case, and impact of various divergence schemes, solvers, solution algorithms and solver settings on the wall shear stress and turbulent kinetic energy plots was analyzed. Results from the LCTM k-Omega SST model and the standard k-Omega SST model were compared as well. It was concluded that the LCTM k-Omega SST model, coupled with the simpleFoam solver, coupled with the linear upwind divergence scheme and GAMG multigrid solvers provided a blend of high accuracy and relatively lower computational time.