

R-001 & NASA Langley Research Center

- Flow solver: FUN3D V14 (<https://fun3d.larc.nasa.gov>)
- Spatial discretization: 2nd-order, node-centered, finite-volume, mixed-element, unstructured-grid
- Time integration or iteration method: Steady state (Case 1 and Case 2.1) and unsteady URANS (Case 2.2-2.4 and Case 3) with Hierarchical Adaptive Nonlinear Iteration Method (HANIM)
- Name of committee grids (or “self-prepared”): 1.R.01, 1.R.05, 2.R.01, 2.R.03(Case 2.1), 3.R.02
- Cases submitted: Case 1; Case 2 (2.1–2.4); Case 3 (3.2 and 3.4)
- Initialization method: Free stream conditions for Case 1 and URANS, and warm restarts from lower angle-of-attack solutions for Case 2.1
- Turbulence model: SA-neg-QCR2000-R (for Case 1), SA-neg (for Cases 1–3)
- Convergence/stopping criteria: For steady state simulations of Case 1 and Case 2.1, mean-flow and turbulence-model residuals reach machine zero. For unsteady URANS simulations of Case 2.2-2.4 and Case 3, F&M averages over last 10% iterations remain within prescribed tolerance, except at the large separation angle-of-attack.
- Relevant recent publications related to solver and/or high-lift applications:
List of publications see website <https://fun3d.larc.nasa.gov/chapter-2.html#publications>