

# L-009 Gulfstream Aerospace

- Flow solver: FUN3D
- Spatial discretization: node-based finite volume
- Time integration: time-accurate, implicit, BDF2OPT
- Name of self-prepared grid: C24\_ONERA\_MS10\_N\_S100
- Cases submitted: Case 2.4
- Initialization method: Free-stream (cold start)
- Grid topology: mixed-element, primarily prisms and tets
- Typical DoF per eqn (Case 2.4): ~208 million nodes
- HRLES model family: DDES
- Underlying RANS model: SA
- Typical time step normalized by CTU: 0.00046
- Target wall-normal grid spacing normalized by MAC or  $y^+$  value: 1.8 E-06
- Aspect ratio range (tangential spacing/wall-normal): varies across model
  - Wing leading edge behind slat: ~300 chord-wise & ~1000 span-wise
- Relevant publications related to solver and/or high-lift applications:

Nicholas A. Powell, Andrew Clemens, Andres Velez-Valencia, and Jack Welter, "Gulfstream's Contributions to the Third AIAA High Lift Prediction Workshop," AIAA 2018-2843. AIAA Aviation 2018 Forum. June 2018