

# R-008 Bombardier

- Flow solver: Dragon
- Spatial discretization: 2nd-order accurate Roe's upwinding for convective fluxes and central differencing for viscous fluxes
- Time integration or iteration method: multi-step Symmetric-Gauss-Seidel (SGS) relaxation or alternatively Generalized Minimal Residual (GMRES)
- Name of committee grids (or "self-prepared"): mostly Pointwise grids, also some cases on Heldenmesh grids
- Cases submitted: 1, 2.1, 2.2, 2.3, 2.4, 3.1, 3.2, 3.3, 3.4
- Initialization method: warm start from previous AoA
- Turbulence model: SA-neg and Wilcox  $k-\omega$  (1988)
- Convergence/stopping criteria:  $\Delta C_l < 1 \times 10^{-5}$  over last 200 iterations
- Relevant publications related to solver and/or high-lift applications

[1] H. Yang and M. Langlois, "Assessment of Turbulence Models for Aircraft High-Lift Configurations," 2014 Conference of the CFD Society of Canada, Toronto, Canada, June 1-4, 2014.

[2] H. Yang and M. Langlois, "Towards Accurate Simulation of Aircraft High-Lift Flows with One- and Two-Equations Turbulence Models," 62nd CASI Aeronautics Conference, Paper 256, Montréal, Canada, May 2015.

[3] M. Langlois, H. Yang, and K. Sermeus, "Bombardier Contribution to the 3rd AIAA High-Lift Workshop", 2018 AIAA SciTech Forum, January 8-12, 2018, AIAA-2018-1038.