R-023 Luminary Cloud

- Flow solver: Luminary
- Spatial discretization: massively-parallel, GPU-native, 2nd-order accurate finite volume, various turbulence and transition modeling approaches (RANS, DES, LES), compressible and incompressible fluids, arbitrary polyhedral meshes internally generated or externally provided
- Time integration or iteration method: approximate backward Euler with Gauss-Seidel iterative method
- Name of committee grids: HELDENMESH, STAR-CCM+, and self-prepared Luminary meshes
- Cases submitted: 1, 2.1, 2.2, 2.4, 3.2, 3.3, 3.4
- Initialization method: from a lower angle of attack solution
- Turbulence model: SA, SA-QCR2000-R(Cr=1)
- Convergence/stopping criteria: 1e-5 relative residual reduction, fixed number of iterations
- Relevant publications related to solver and/or high-lift applications: SciTech 2025 HLPW5 paper planned