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Large Eddy Simulation of cavitation in turbulence SERGEI CHUMAKOV, DAVID COOK, Robert Bosch LLC, FRANK HAM, Cascade Technologies, UWE IBEN, Robert Bosch GmbH — Large Eddy Simulation of a turbulent cavitating flow has been performed using the explicit spatially-filtered compressible Navier-Stokes solver. The unstructured finite volume method uses a blended central-upwind scheme in single-phase regions to minimize artificial damping of resolvable turbulence scales. In the areas with discontinuities such as phase change, the method switches to a lower-order reconstruction (WENO and first order) and an approximate Riemann solver. Time discretization is performed with an explicit third order Runge-Kutta scheme. Comparison of our results for several cases to simulations and experiments from the current literature is presented.

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