Computational Aeroacoustics

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Aeroacoustics of Wall-bounded and Separated Turbulent Flows

Large Eddy Simulation (LES) combined with accurate and efficient numerical methods allow aeroacoustics simulations of low Mach number turbulent flows.

Acoustic field in diffuser

Swirl Combustor Aeroacoustics

- Low pollutant emission combustors employ swirl for flame stabilization
- Coupling between unsteady heat release and duct acoustic modes may lead to combustion instability
- Ability to predict unsteady flame dynamics and coupled acoustic response critical e.g. PVC pressure fluctuations
- LES with premixed flame model