Combustion and emission characteristics in gas turbine engines

Contemporary research on gas turbine is focussed on achieving improved performance with lower emissions while avoiding combustion instabilities. Gas turbine industry is focussing mainly on simulations, for cutting down experimental iterations, cost and development time.

In our laboratory, gas turbine combustion is simulated using a real life combustor with working variables of an actual gas turbine engine. An experimental facility is also created using one of the 'can' combustors of the gas turbine to imitate the actual scenario found in the engine. The preliminary experimental and numerical results are promising for the development of an accurate numerical model to design an actual combustor. Further, experimental and numerical analysis is being progressed hand in glove for the development of experimentally validated numerical model to simulate gas turbine combustion. These methods will be extended to study and mitigate combustion instabilities.





Velocity Vectors Colored By Velocity Magnitude (m/s)

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