Turbulence Photos









Example Video Image of Premixed Natural Gas/Air Flame (MS Burner, 500 slpm Air Flow Rate, $\phi = 1.0$)



Mean PLIF Images of OH in the ATS-Burner (Premixed Natural Gas/Air, Air Flow = 500 slpm)



Instantaneous Flame Structure (Planar Laser Induced Fluorescence of OH)



(C) Test Series 3, MS Injector, $\phi = 0.65$

Turbulence Options

- Direct Numerical Simulation (DNS)
 - Solve complete Navier-Stokes equations with small time scale (big computers, small problems)
- Large Eddy Simulation (LES)
 - Same as DNS, but not as fine of scale
 - Sub-grid models for small-scale turbulence, etc.
 - Phil Smith 36 hrs on 1000 processors for 8 s of pool fire
- Industry Practice
 - k-ε model
- Other Options
 - Reynolds Stress Model
 - Algebraic Stress Model