



How do we go on from here?

- Continue
 - Spray A baseline
 - Soot
- New
 - Large, single-hole nozzle.
 - Spray B
 - GDI injector
 - Transparent nozzle
 - Engine flows
- Address physical problems
 - Internal flow/near nozzle
 - Supercritical
 - Turbulence/chemistry interaction at engine conditions

- Understanding internal nozzle flow, nozzle geometry, and its connection to the near field spray
 - Suggested hardware
 - Spray B
 - transparent nozzle (0.2 mm nozzle)
 - sharp-edged, axial single-hole nozzle
 - Potential experiments
 - Phase-contrast, radiography, high-res. x-ray tomography, transparent visualization, momentum and mass flow rate, near-field long-distance microscopy, L2FV, ballistic imaging
 - Potential modeling projects
 - Internal flow CFD with cavitation
 - Effects of grid size, surface roughness, and geometry “imperfections”
 - Primary/secondary atomization
 - B.C.s that include nozzle gas in the sac and initial wall temperature distribution
 - Hydraulic model of injector, (e.g. AMESIM)

- Is Spray A "supercritical"? (a dense fluid)
 - Potential experiments
 - long-distance microscopy high speed imaging
 - PDA near LL
 - Ballistic imaging
 - others (Raman spectroscopy?)
 - Potential modeling projects
 - models that treats dense fluid
 - Develop a light model for photons interacting with dense fluids

- Turbulence/chemistry interaction at "engine-type conditions"
 - Hardware
 - Multiple injections, wall impingement (liquid or vapor?), large nozzles, fuels, RCM
 - Potential experiments
 - OH/CH₂O, PIV, transient lift off, chemiluminescence, schlieren, Temperature (Raman), LIF, Rayleigh, other species? (NO...)
 - Potential modeling projects
 - Chemistry mechanisms
 - Continuation of model comparisons
 - Modeling experimental measurements (OH LIF...)