Abstract Submitted
for the DFD15 Meeting of
The American Physical Society

Effect of cavitation in high-pressure direct injection BAHMAN ABOULHASANZADEH, ERIC JOHNSEN, University of Michigan — As we move toward higher pressures for Gasoline Direct Injection and Diesel Direct Injection, cavitation has become an important issue. To better understand the effect of cavitation on the nozzle flow and primary atomization, we use a high-order accurate Discontinuous Galerkin approach using multi-GPU parallelism to simulate the compressible flow inside and outside the nozzle. Phase change is included using the six-equations model. We investigate the effect of nozzle geometry on cavitation inside the injector and on primary atomization outside the nozzle.

Bahman Aboulhasanzadeh
University of Michigan

Date submitted: 01 Aug 2015 Electronic form version 1.4