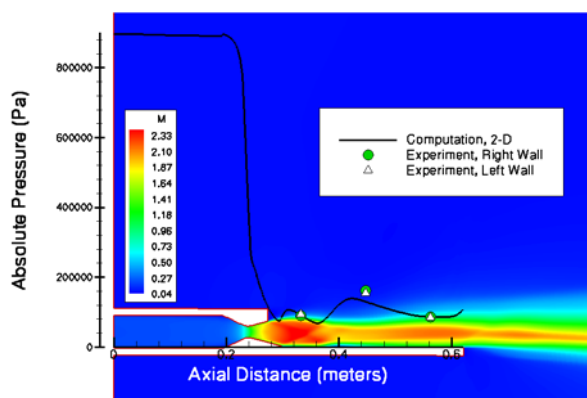


Computational Fluid Dynamics Simulation of a Supersonic Rocket Thruster Flow Compared with Experimental Data

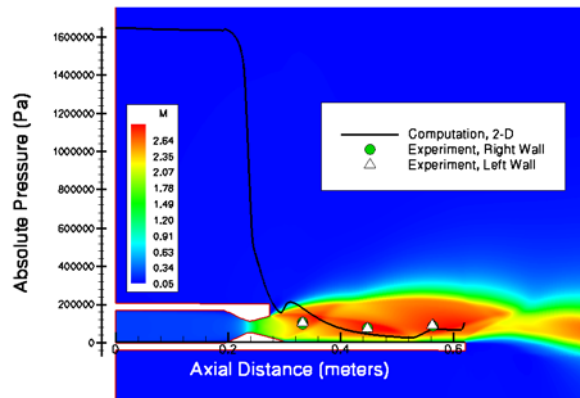
Farhad Davoudzadeh ¹⁾ and Nan-Suey Liu ¹⁾

¹⁾ NASA Glenn Research Center, MS 5-10, 21000 Brookpark Rd., Cleveland, OH 44135-3191, USA.

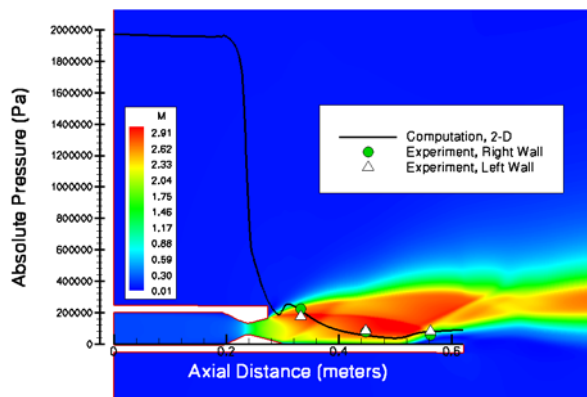
Farhad.Davoudzadeh@grc.nasa.gov, Nan-Suey.Liu-1@nasa.gov



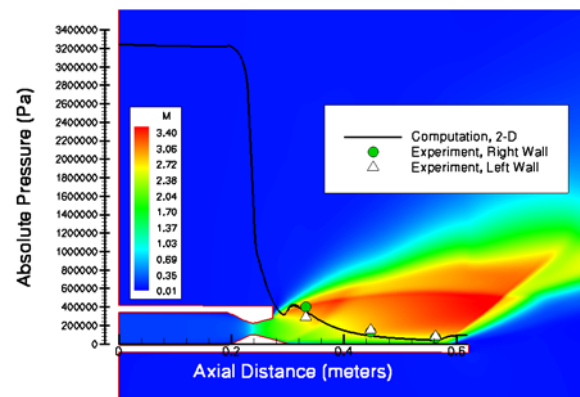
(a) Chamber pressure = 130 psia.



(b) Chamber pressure = 250 psia.



(c) Chamber pressure = 300 psia.



(d) Chamber pressure = 500 psia.

Navier-Stokes numerical simulations showing the supersonic flow field induced by a H₂-O₂ rocket thruster with an attached panel, under a variety of operating conditions. Mach number contours, computational pressure distribution, and related experimental measurement along the wall for all of the operating conditions considered.