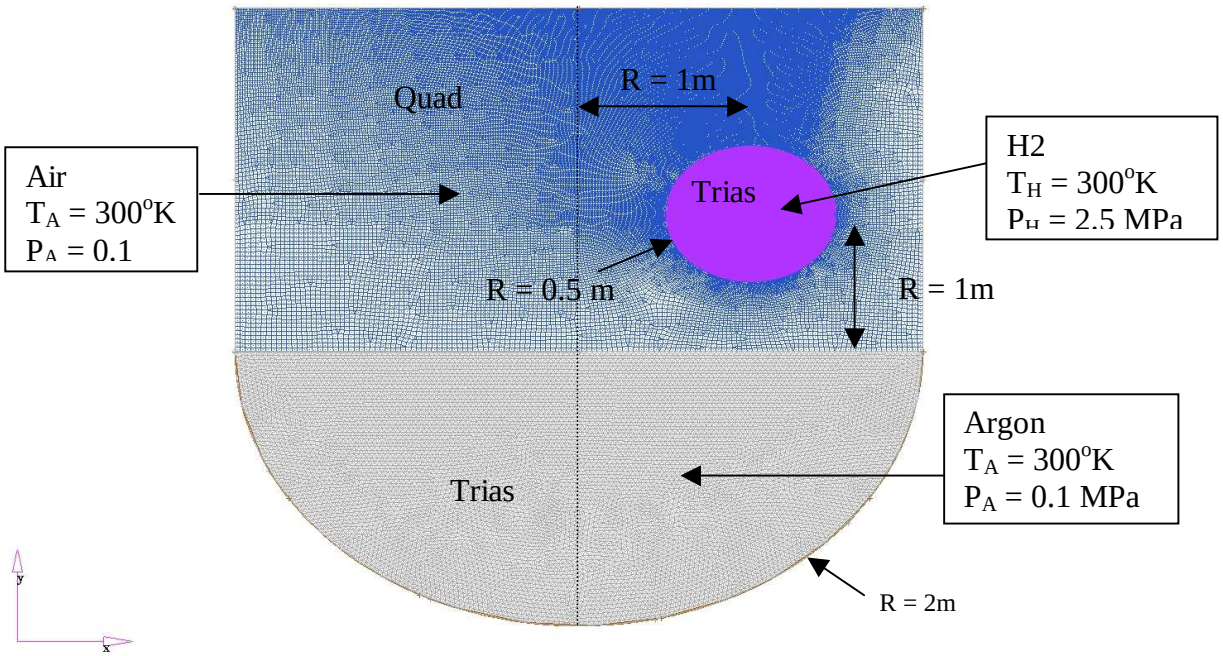
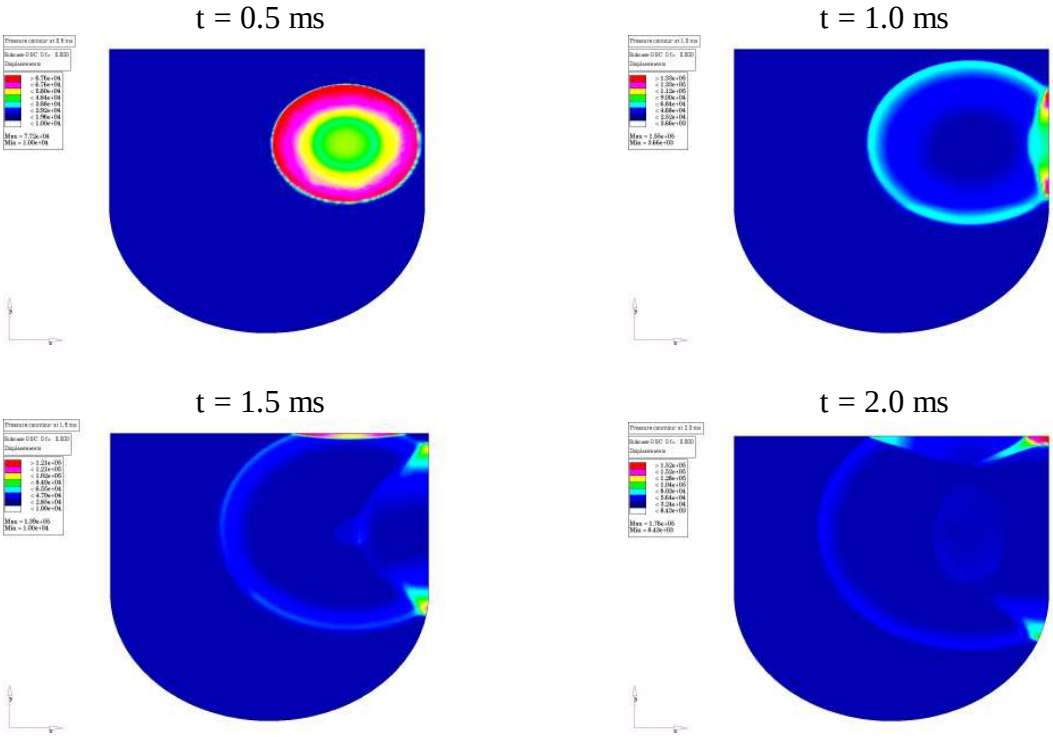
Problem: H2 blasts into air and Argon.

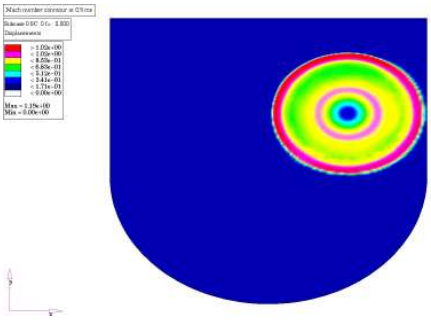


Transition pressure contour for H2 explosion in a vessel.

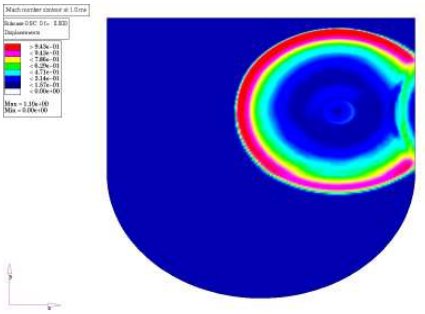


Mach number contour for H2 explosion in a vessel

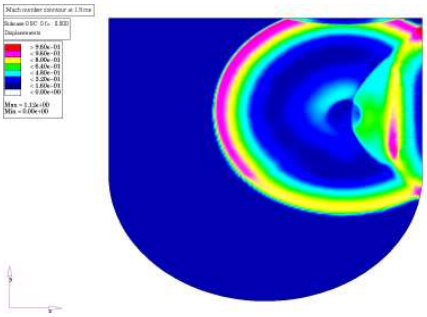
t = 0.5 ms



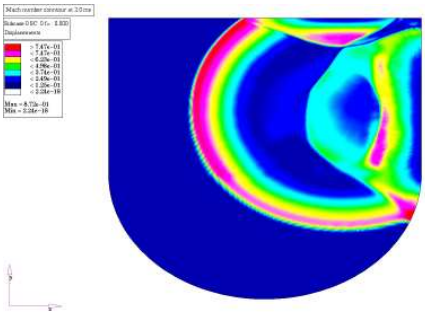
t = 1.0 ms



t = 1.5 ms

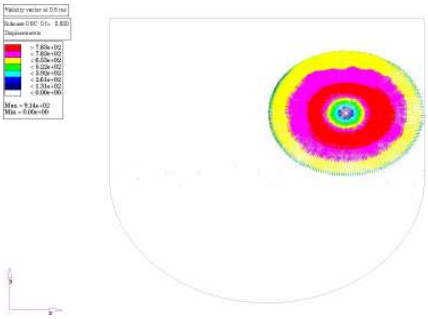


t = 2.0 ms

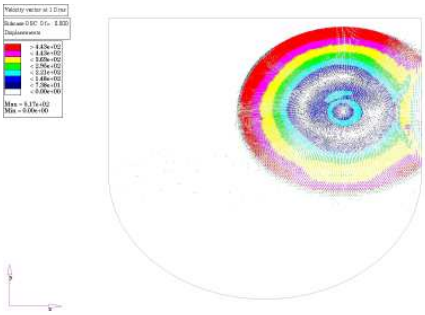


Velocity vector plot for H2 explosion in a vessel

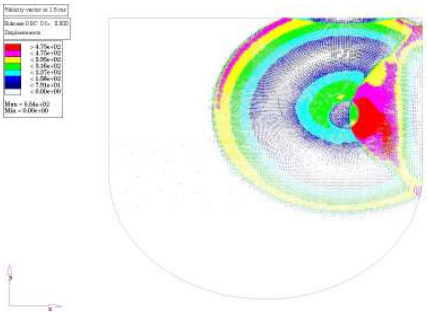
t = 0.5 ms



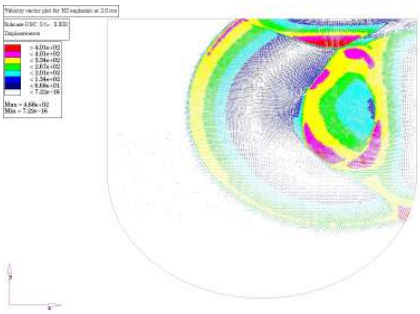
t = 1.0 ms



t = 1.5 ms

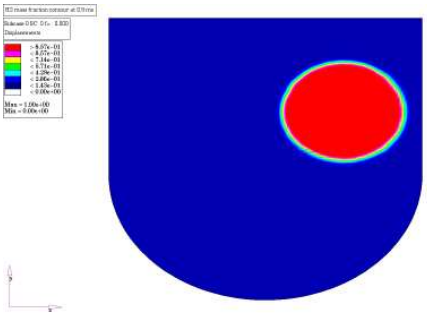


t = 2.0 ms

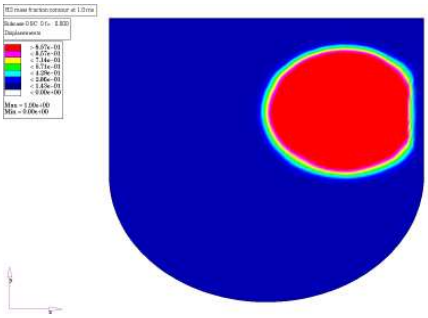


Transition H2 mass fraction contour for H2 explosion in a vessel.

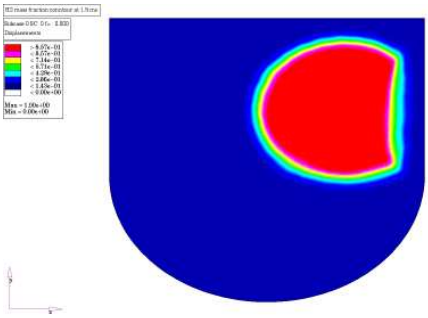
t = 0.5 ms



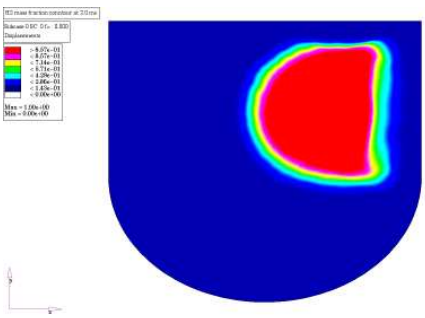
t = 1.0 ms



t = 1.5 ms

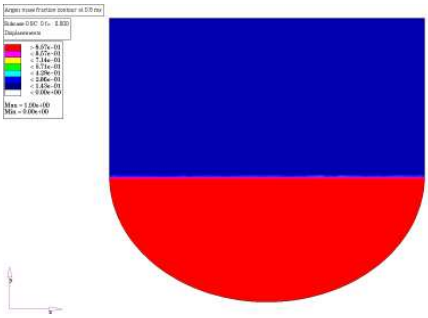


t = 2.0 ms

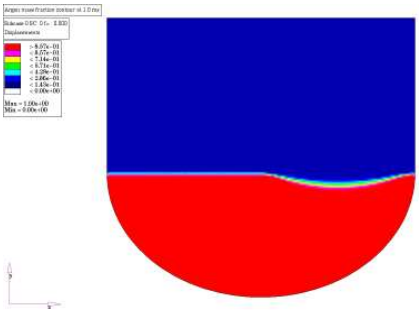


Transient Argon mass fraction contour for H2 explosion in a vessel.

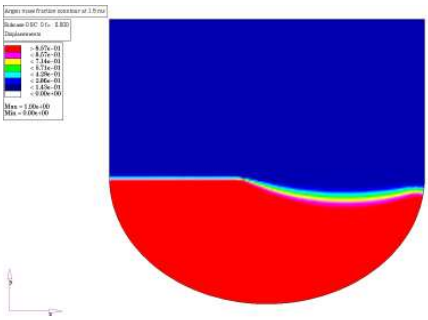
t = 0.5 ms



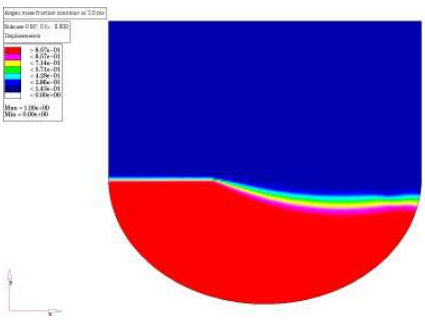
t = 1.0 ms



t = 1.5 ms



t = 2.0 ms



Problem: Combustion of a premixed Hydrogen-Air supersonic flow in a ramped duct.

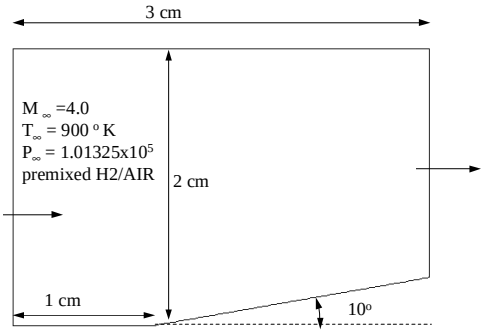


Figure G4.1 Premixed H2/air flow enters a ramped duct.

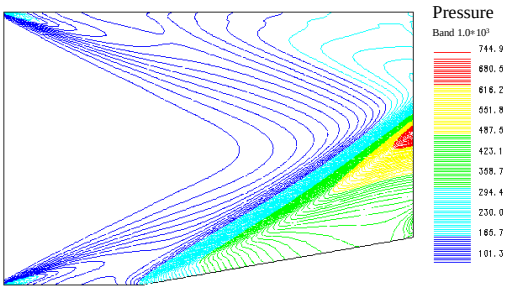


Figure G4.4 Pressure contour lines for flow past a ramped duct.

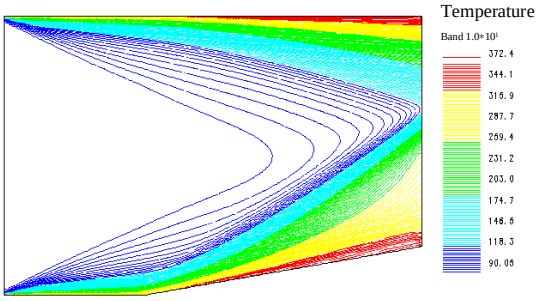


Figure G4.5 Temperature contour lines for flow past a ramped duct.

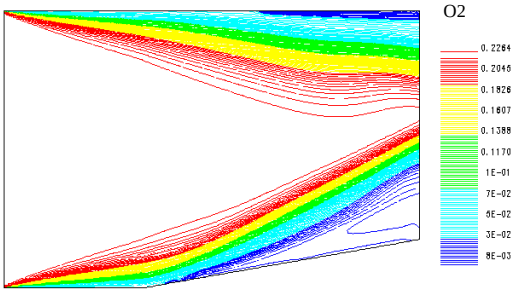


Figure G4.7 Contour lines of O2 concentration for flow past a ramped duct.

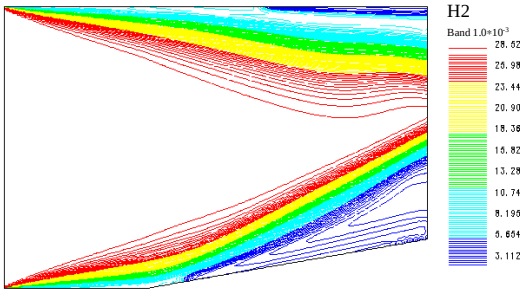


Figure G4.8 Contour lines of H2 concentration for flow past a ramped duct.

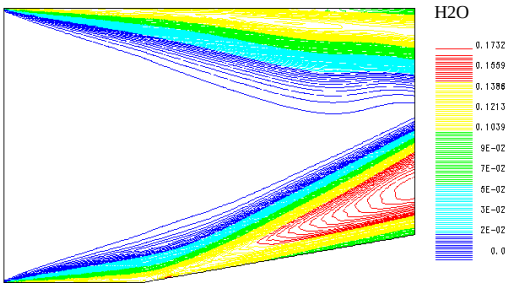


Figure G4.9 Contour lines of H2O concentration for flow past a ramped duct.

Problem: Transverse injection of Helium into a supersonic air stream.

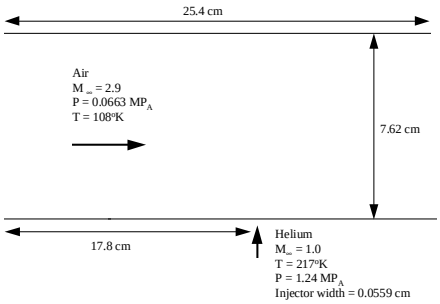


Figure G3.1 Computational domain for the transverse injection of Helium into an air stream.

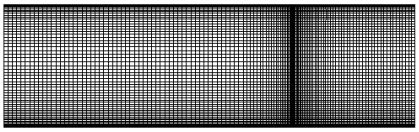


Figure G3.2 Finite element model for the transverse injection of Helium in to an air stream.

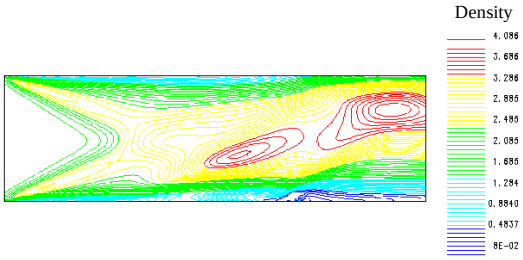


Figure G3.3 Density contour lines for the transverse injection of Helium in to an supersonic air stream.

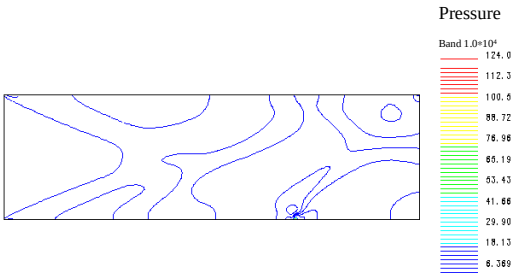


Figure G3.4 Pressure contour lines for the transverse injection of Helium in to an supersonic air stream.

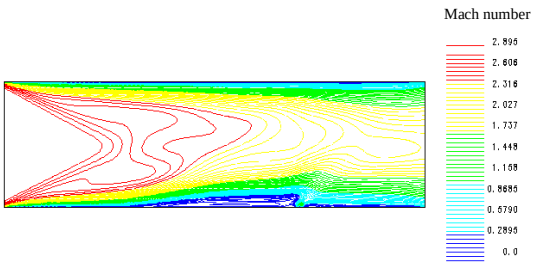


Figure G3.5 Mach number contour lines for the transverse injection of Helium in to an supersonic air stream.

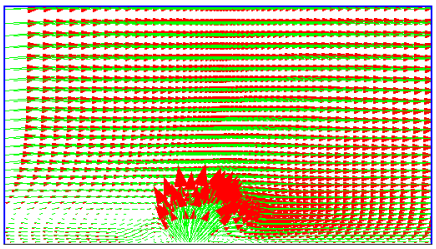


Figure G3.7 Velocity vector plot for the transverse injection of Helium in to an supersonic air stream.