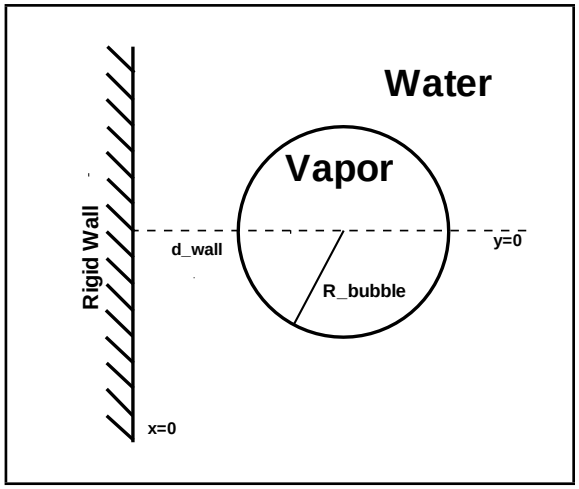
Planar Bubble Collapse next to a Rigid Wall



$$R = 0.001\text{[m]},\ d = R/2$$

$$\Omega = [0, 0.01] \times [0, 0.01]$$

$$L = 8, \quad \varepsilon = 0.001$$

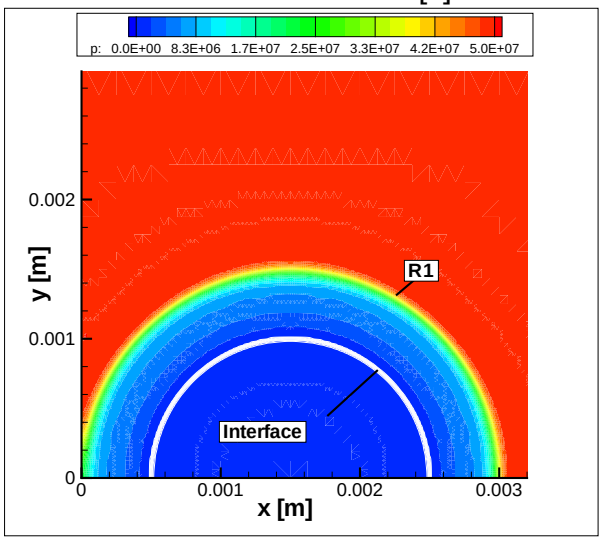
$$N_0 = 25 \times 25, \quad N_L = 6400 \times 6400$$

$$CFL = 0.5, \quad t = 1.81 \times 10^{-5}\text{[s]}$$

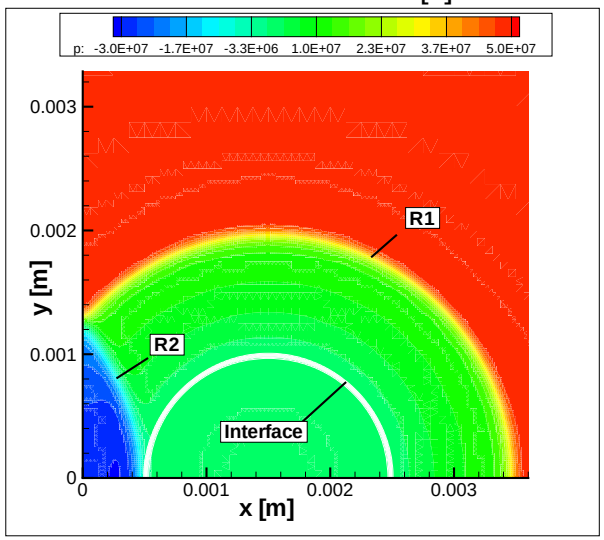
		Vapor (Air)	Liquid (Water)
γ	[-]	1.4	7.15
$\mathcal{R}$	[J/kg K]	287.	1236.75
$c_v = \mathcal{R}/(\gamma - 1)$	[J/kg K]	717.5	201.1
π	[Pa]	0	3.e+8
ρ	[kg/m^3]	0.026077	1000
$\mathbf{v}$	[m/s]	$\mathbf{0}$	$\mathbf{0}$
p	[Pa]	2118	5e+07
T	[K]	283	283
$\rho\, c$	[kg/m^{2}s]	8.79338	1.58193e+06

Pressure

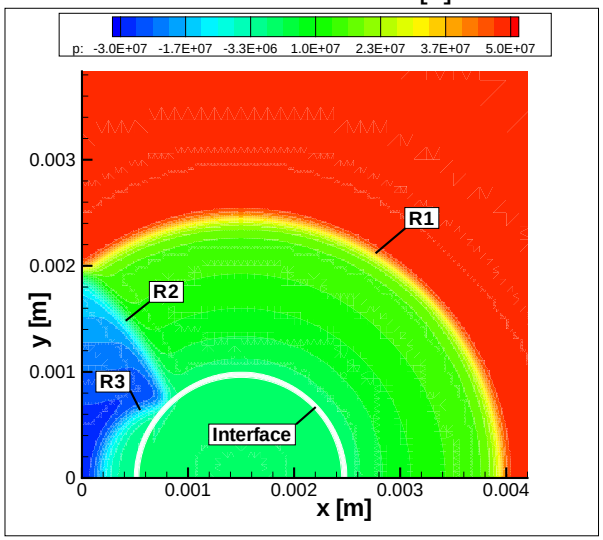
$t = 3.20 \times 10^{-7}$ [s]



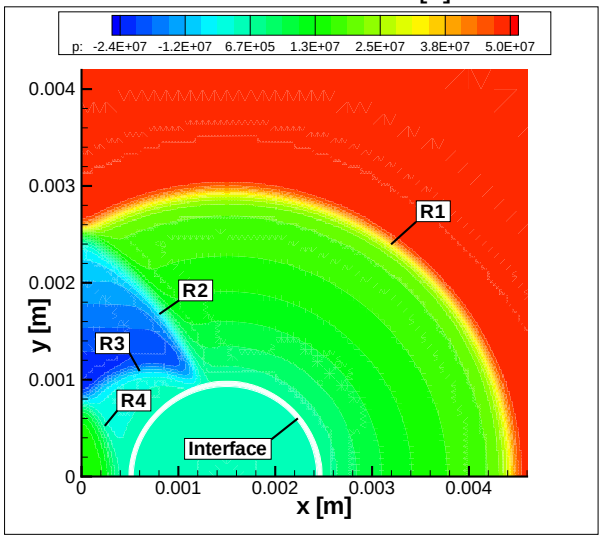
$t = 6.30 \times 10^{-7}$ [s]



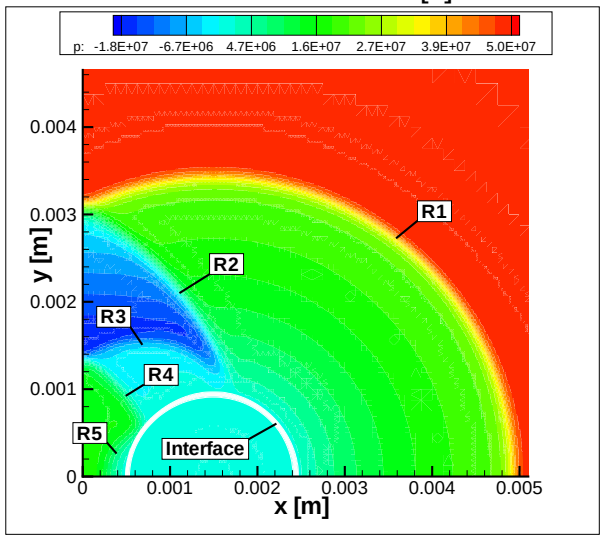
$t = 9.50 \times 10^{-7}$ [s]



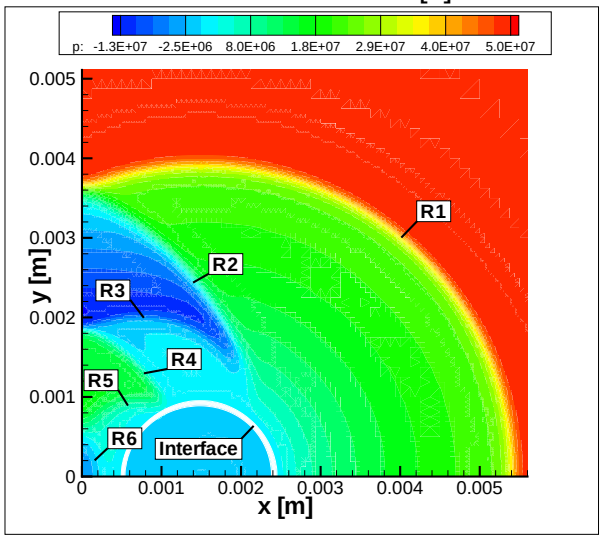
$t = 1.26 \times 10^{-6}$ [s]



$t = 1.58 \times 10^{-6}$ [s]

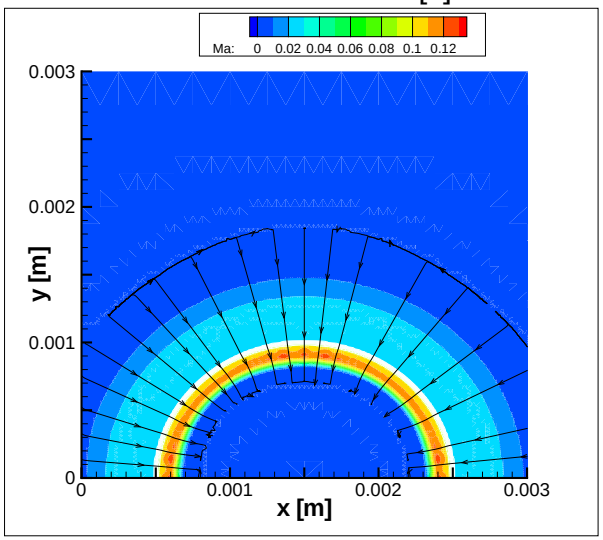


$t = 1.90 \times 10^{-6}$ [s]

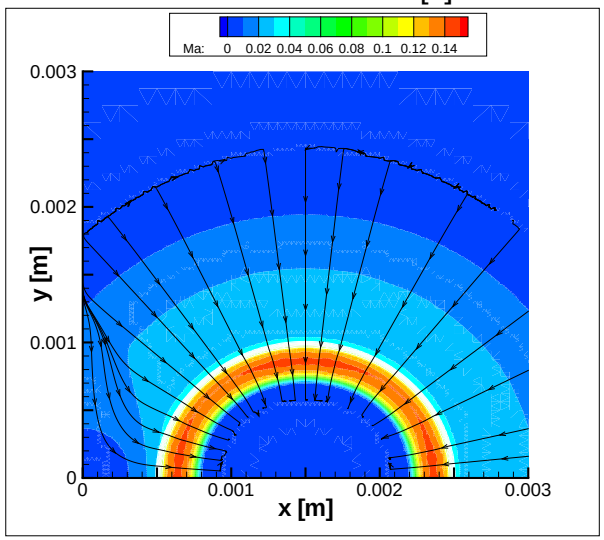


Mach Number

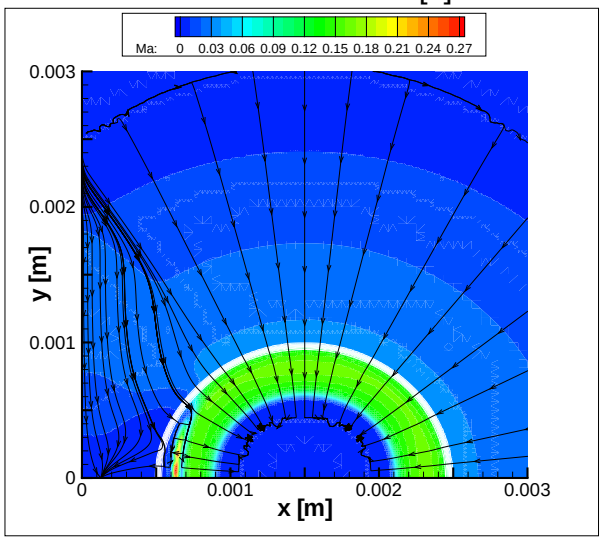
$t = 3.20 \times 10^{-7}$ [s]



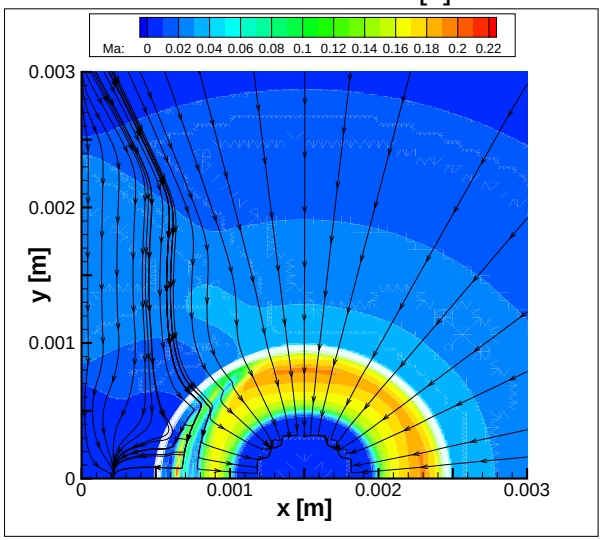
$t = 6.30 \times 10^{-7}$ [s]



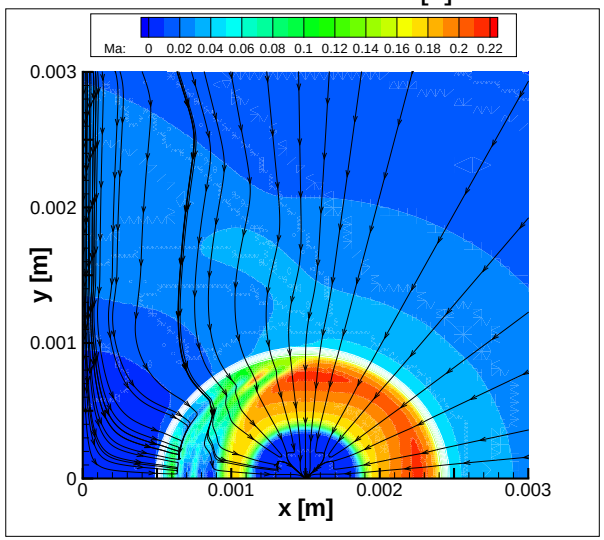
$t = 9.50 \times 10^{-7}$ [s]



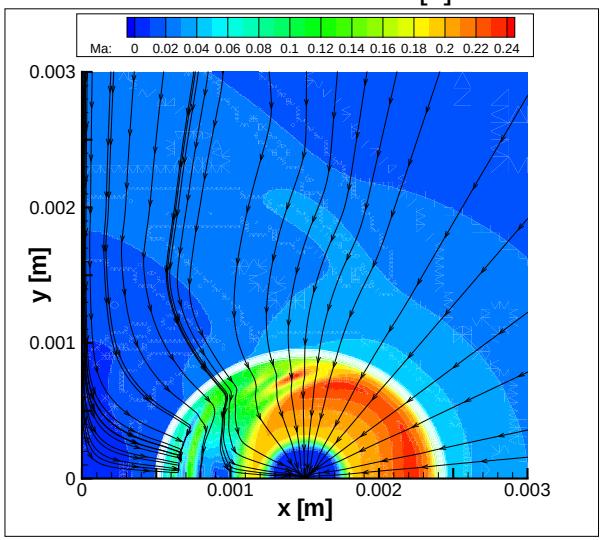
$t = 1.26 \times 10^{-6}$ [s]



$t = 1.58 \times 10^{-6}$ [s]

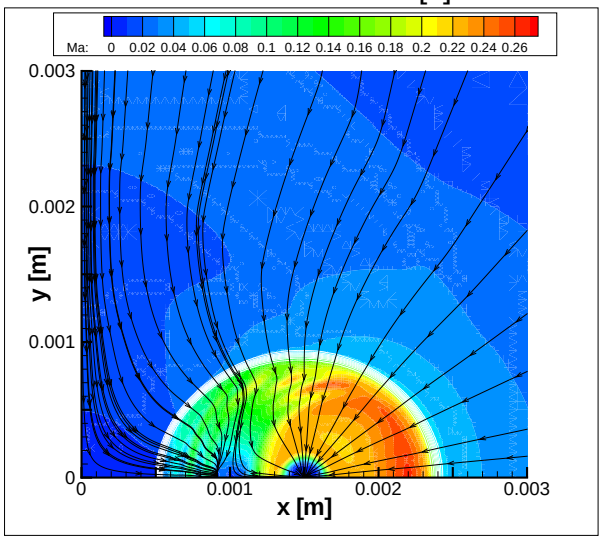


$t = 1.90 \times 10^{-6}$ [s]

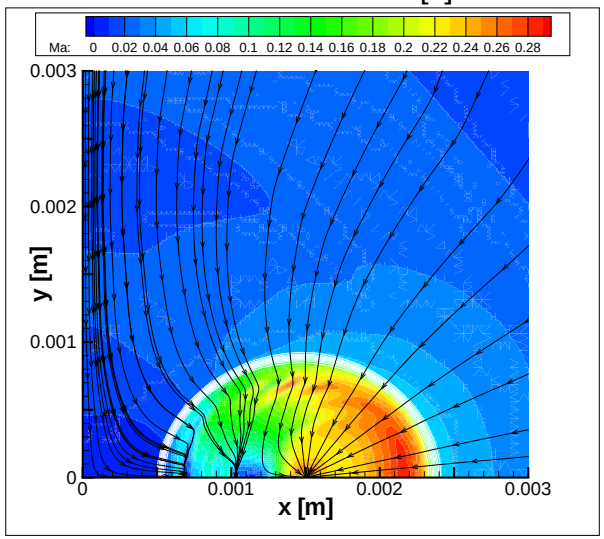


Mach Number

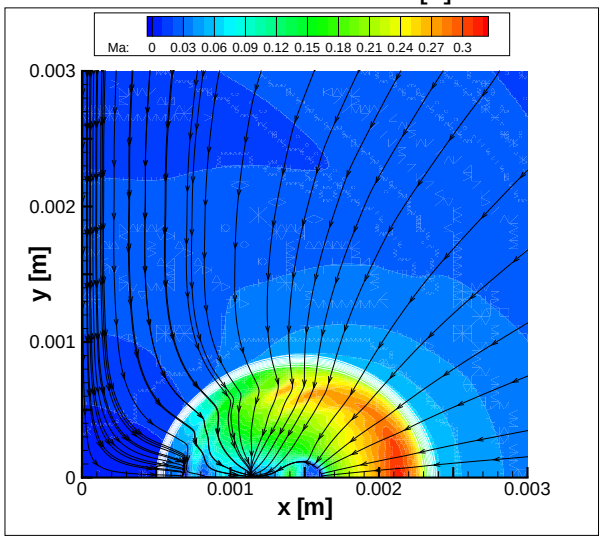
$t = 2.21 \times 10^{-6}$ [s]



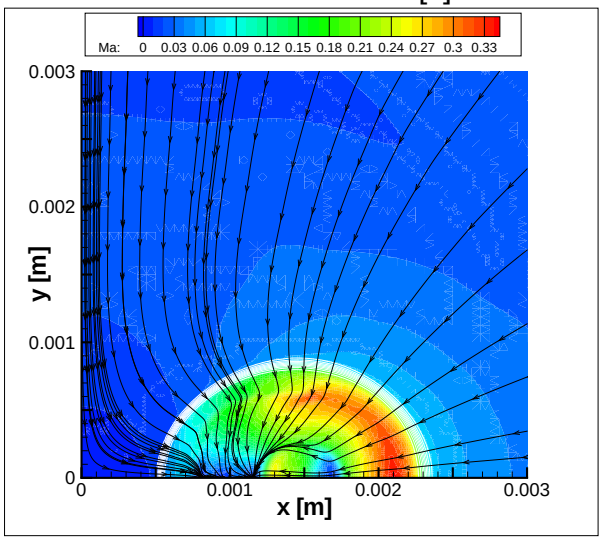
$t = 2.53 \times 10^{-6}$ [s]



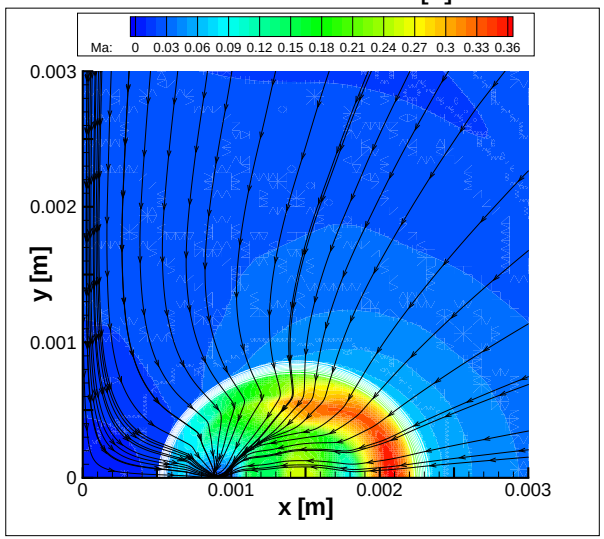
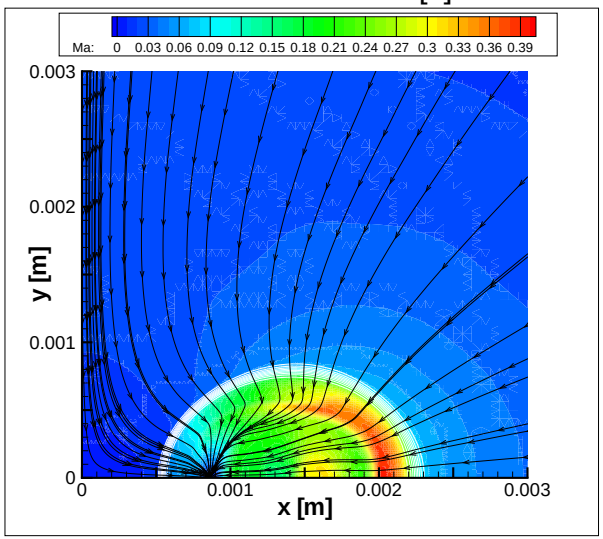
$t = 2.84 \times 10^{-6}$ [s]



$t = 3.16 \times 10^{-6}$ [s]



$t = 3.48 \times 10^{-6}$ [s]



$t = 3.79 \times 10^{-6}$ [s]