Axisymmetric bubble collapse

Simulation parameters

We chose an axisymmetric flow domain of size $[-10R, 10R] \times [0, 10R]$, where $R = 0.038$ is the radius of the bubble placed at the center $r, z = 0$. The far-field observer point to measure the acoustic wave is placed at $r_o = 9R$ and $z_o = 0$. The flow domain is discretized using cartesian mesh of spacing 25 nodes$/R$. We enclose the bubble with a cylindrical Kirchhoff surface of height $h = 18R$ and radius $r = 6R$ centerd at origin. The speed of sound in the far-field acoustic

Initial conditions	medium	bubble
Density, ρ	1000	1.0
Pressure, P	1.0e6	1.0e5
Specific heat ratio, γ	4.4	1.4
Stiffness constant, P_∞	6000	0

medium is given by $\sqrt{\gamma(P + P_\infty)/\rho} = 66.5$.