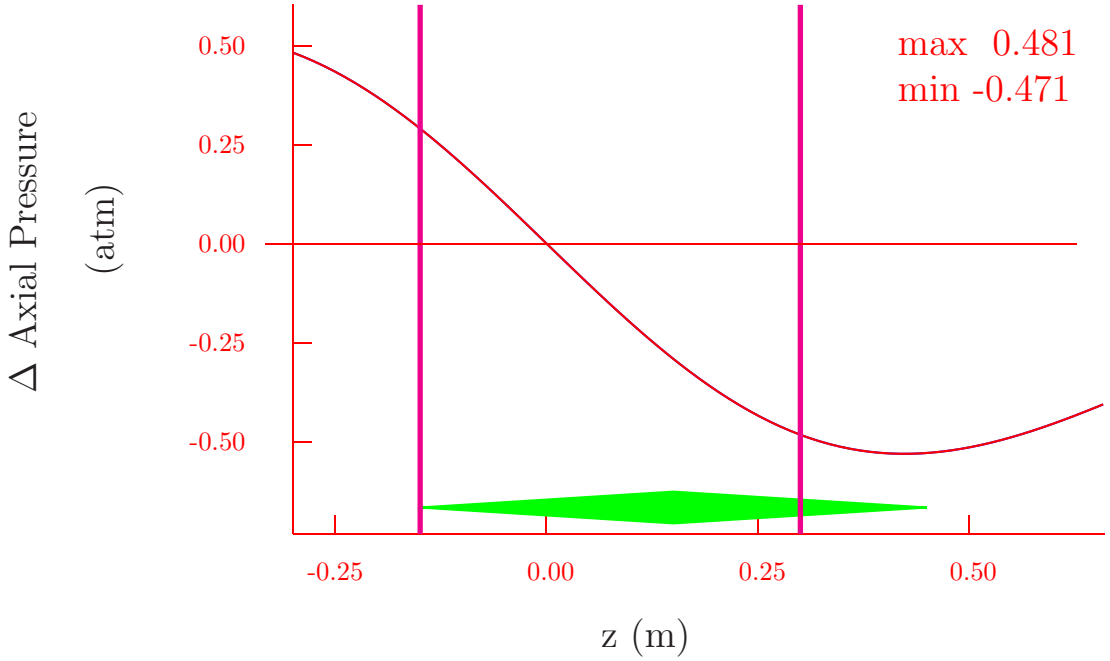
d)

σ_z= .6 (m) θ=-.07 v_o= 30 (m/s) r= 5 (mm)