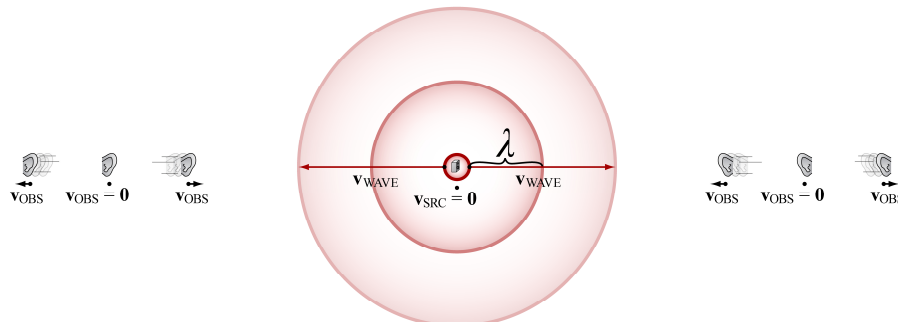
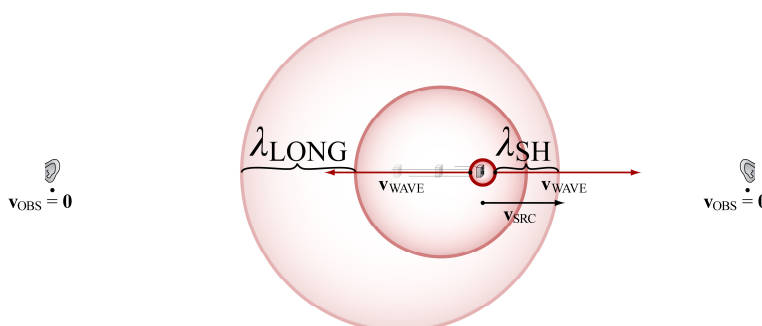


# Galilean Doppler effect (for Honors Physics)

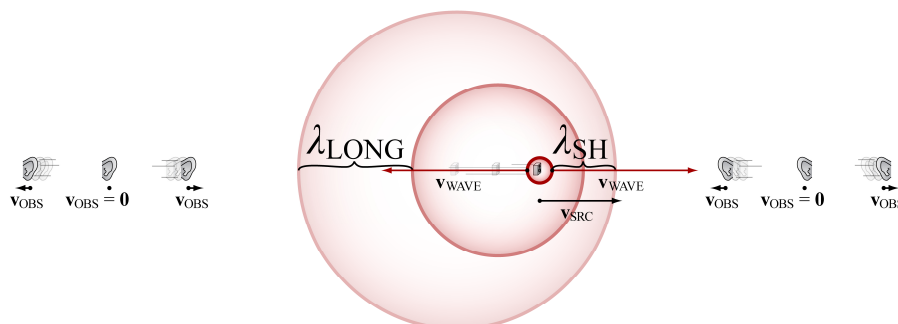
## Stationary source and moving observer



## Moving source and stationary observer



## Moving source and moving observer



## Mathematical relationship

$$v = \lambda f$$

$$\frac{v_{\text{WAVE}} + v_{\text{OBS,APPROACH}}}{v_{\text{WAVE}} - v_{\text{SRC,APPROACH}}} = \frac{\lambda_{\text{SH}} f_{\text{OBS}}}{\lambda_{\text{SH}} f_{\text{SRC}}}$$

$$f_{\text{OBS}} = f_{\text{SRC}} \left( \frac{v_{\text{WAVE}} + v_{\text{OBS,APPROACH}}}{v_{\text{WAVE}} - v_{\text{SRC,APPROACH}}} \right)$$