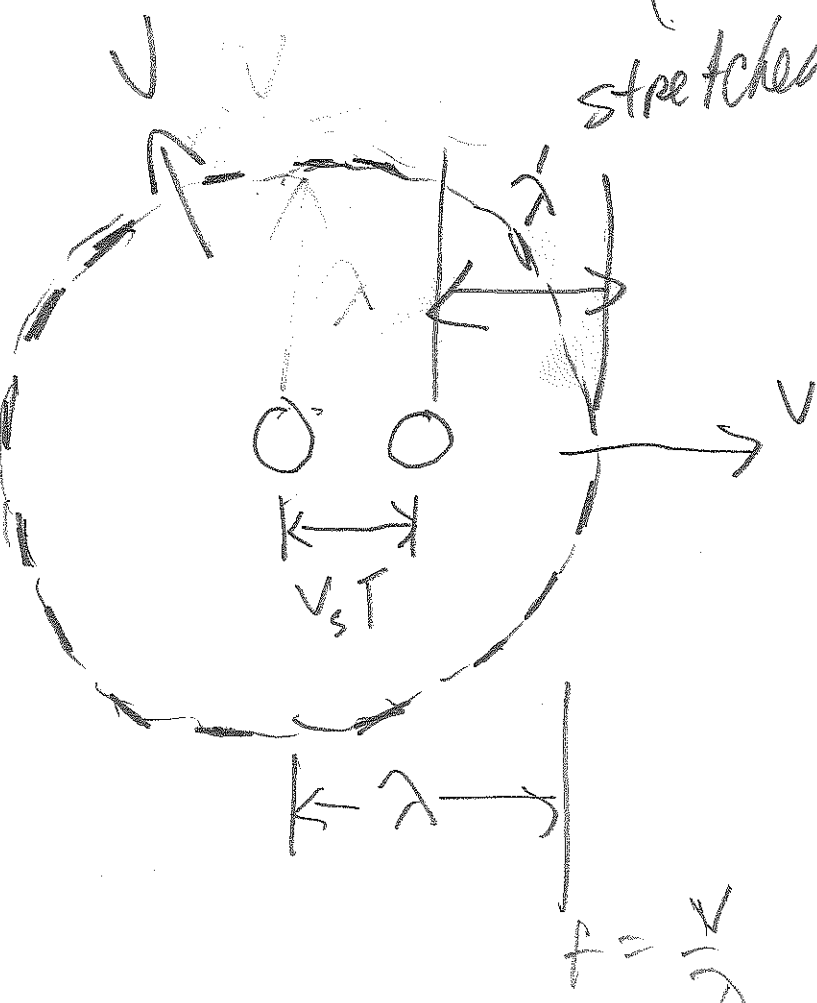
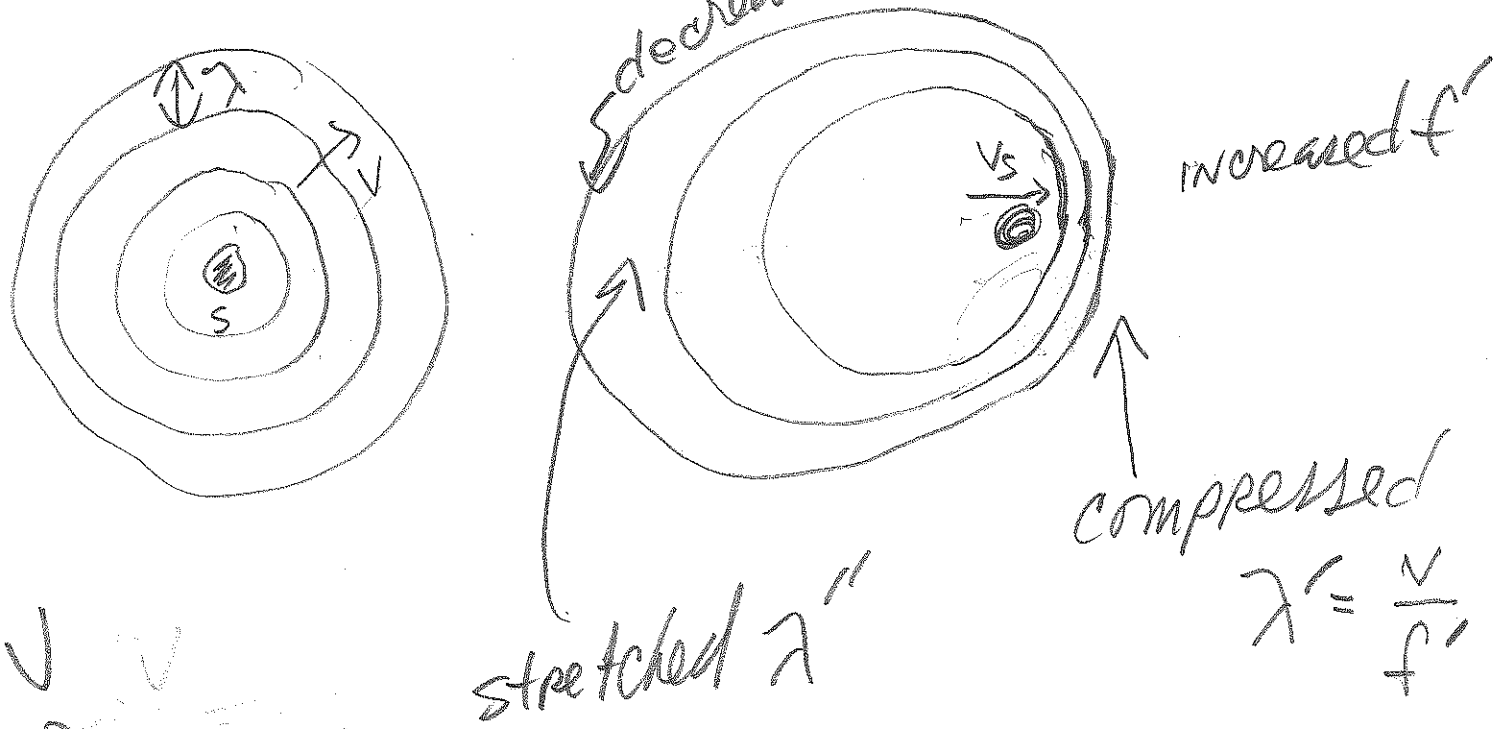


# Quick Doppler effect

see section 16.8



stretched  $\lambda''$

compressed  
 $\lambda' = \frac{v}{f'}$

$$\lambda' = \lambda - v_s T$$

$$\lambda' = v \cdot T - v_s \cdot T$$

$$\lambda' = \frac{1}{f} (v - v_s)$$

$$\lambda' = \frac{v}{f} \left(1 - \frac{v_s}{v}\right)$$

$$\lambda' = \lambda \left(\frac{v - v_s}{v}\right)$$

$$f' = \frac{v}{\lambda'} = \frac{v \cdot v}{\lambda (v - v_s)} = f \left(\frac{v}{v - v_s}\right)$$