

Physics 3306

Provides an introduction to a wide variety of topics in classical (pre-quantum) physics as a bridge to prepare students for subsequent upper-level courses in physics. The topics covered include thermodynamics, fluid mechanics, mechanical waves, optics, radiation, electromagnetic phenomena, atoms, and laboratory techniques. Prerequisites: C- or better in PHYS 1106; and in PHYS 1304 or PHYS 1308.

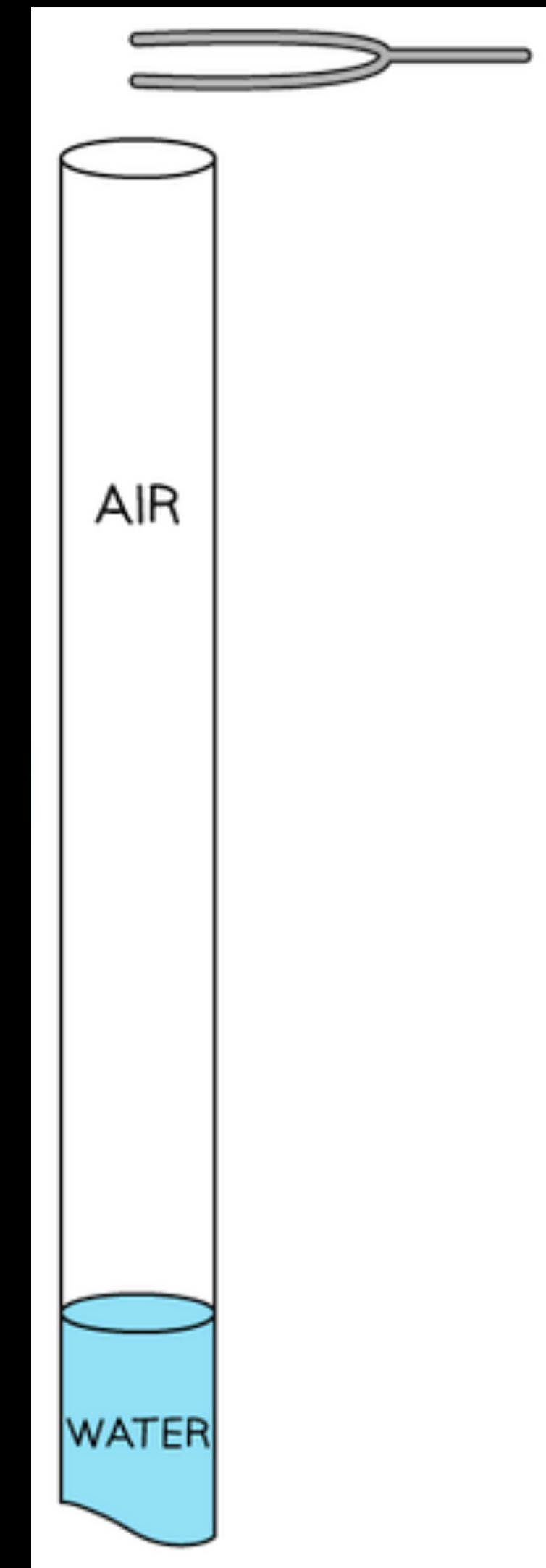
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Sound waves

Today's apparatus is simple

- There is a column of water and air
- You can raise the water level
- You have various tuning forks at your disposal
- You have to identify where you hear the loudest sound
- You will determine the tube length for two successive resonances
- Extra credit!
 - Can you identify additional resonances?



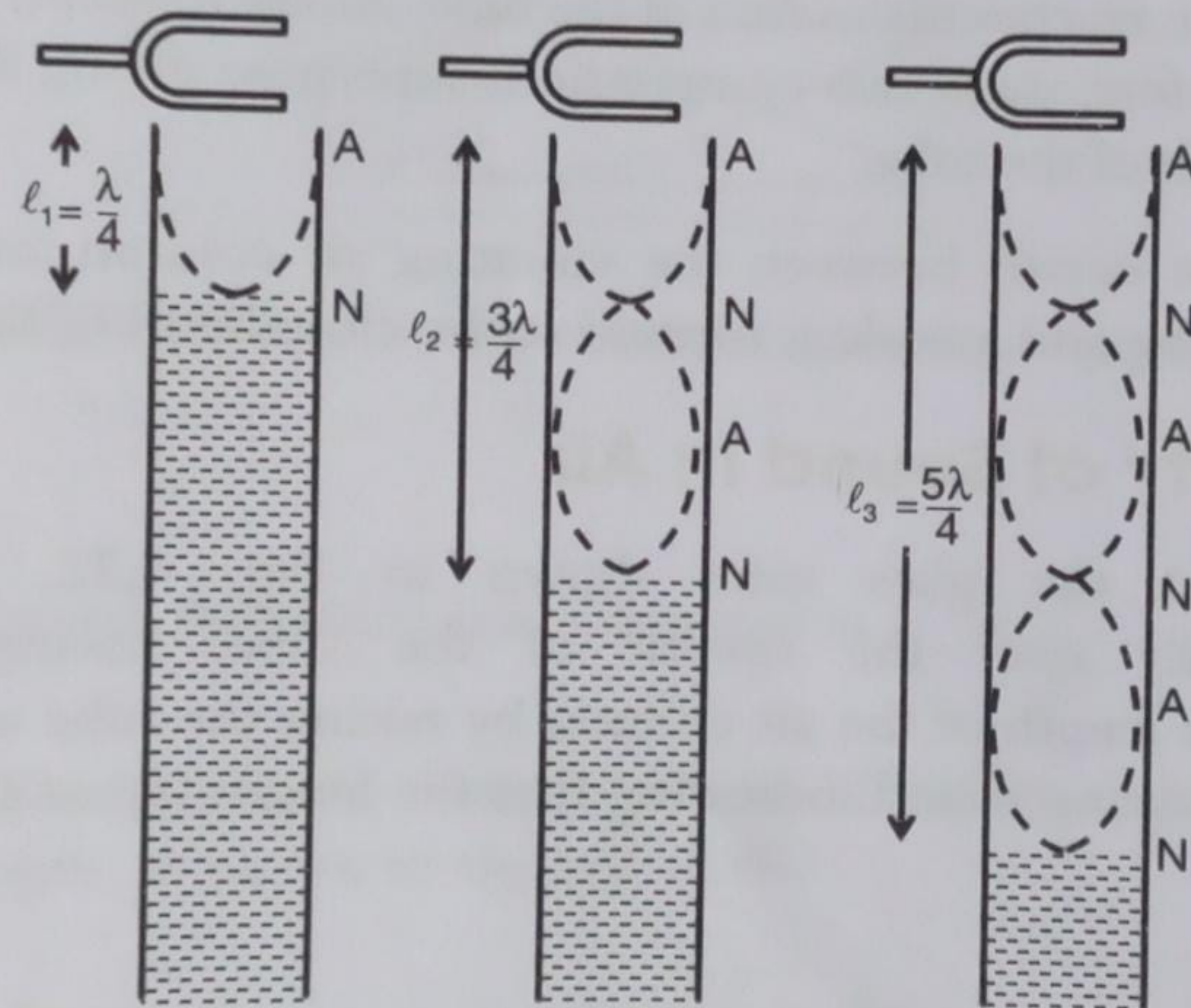


FIGURE 4.23 Resonating air columns

Temperature conversion

Temperature conversion:

- $K = ^\circ C + 273.15$

Error propagation

$$\Delta A(x, y) = \sqrt{\left(\frac{\partial A}{\partial x}\right)^2 \Delta x^2 + \left(\frac{\partial A}{\partial y}\right)^2 \Delta y^2}$$