

# Pressure and Depth

## Barometer: a way to measure atmospheric pressure

For non-moving fluids, pressure depends only on depth.

$$p_2 = p_1 + \rho gh$$

$$P_{\text{atm}} - 0 = \rho gh$$

Measure  $h$ , determine  $p_{\text{atm}}$

example--Mercury

$$\rho = 13,600 \text{ kg/m}^3$$

$$p_{\text{atm}} = 1.05 \times 10^5 \text{ Pa}$$

$$\Rightarrow h = 0.757 \text{ m} = 757 \text{ mm} = 29.80'' \text{ (for 1 atm)}$$

