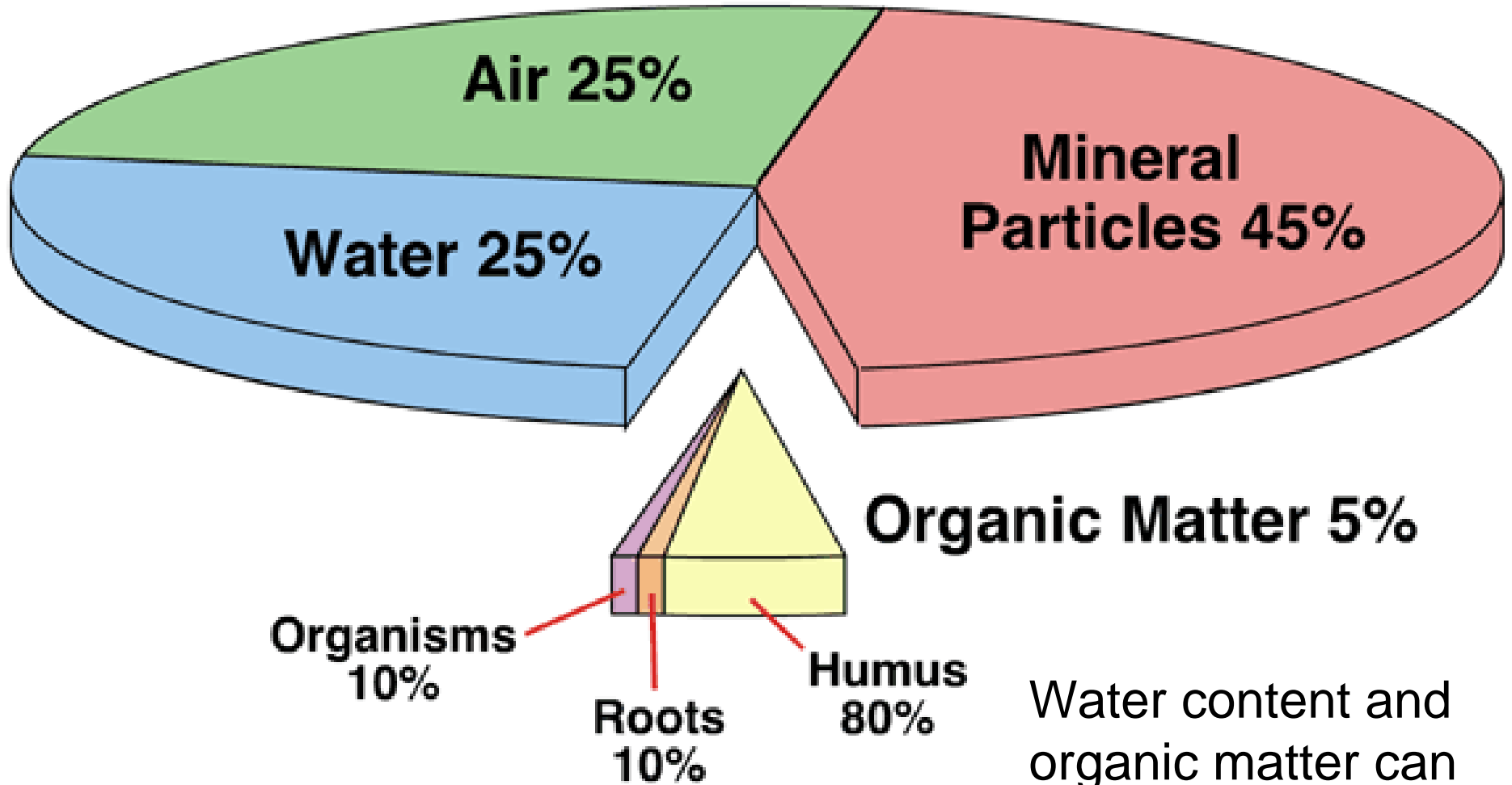


The (Typical) Structure of Soil

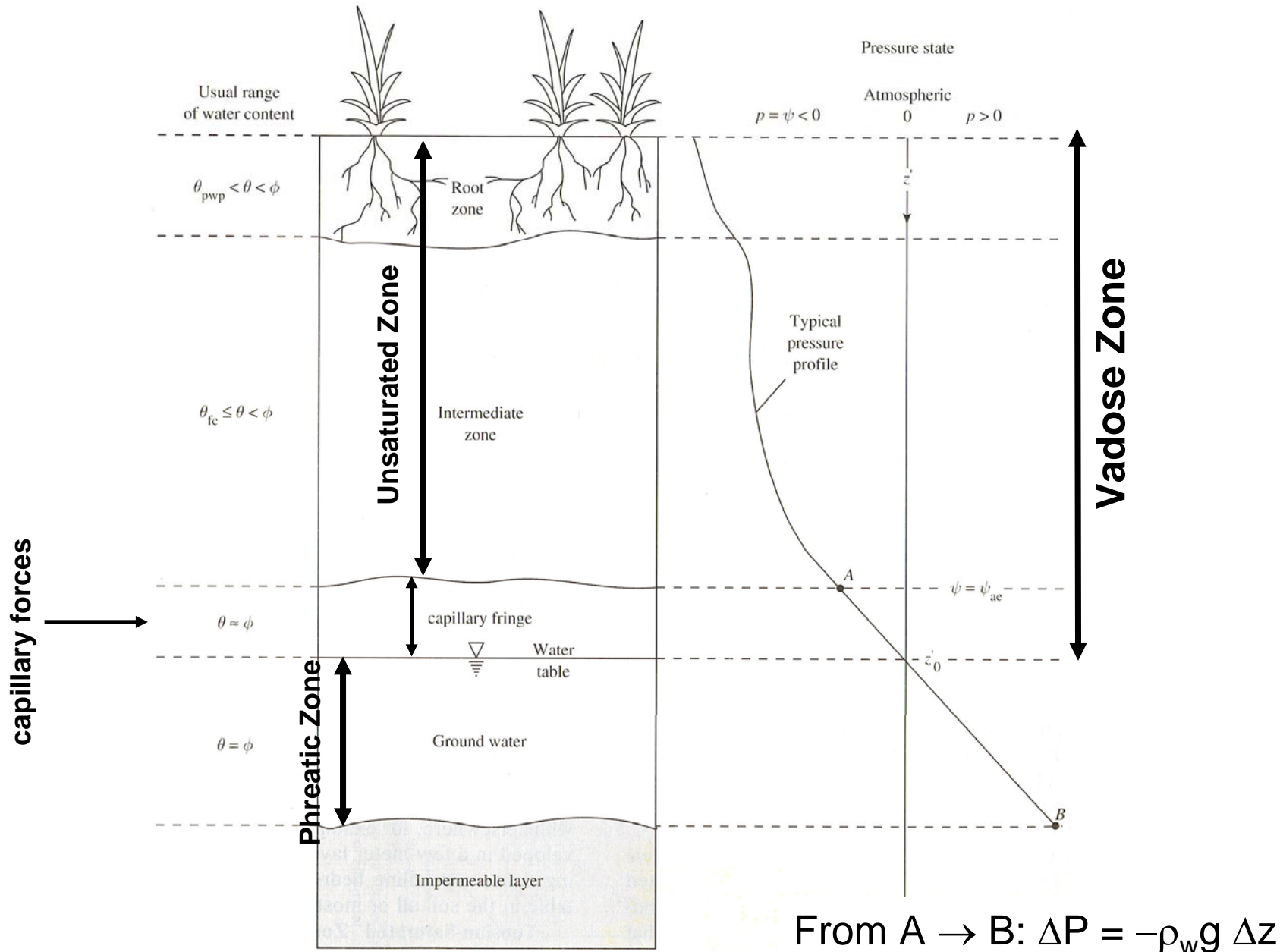


Water content and organic matter can vary significantly.

Divisions of the Subsurface

- Vadose Zone: $P_{\text{water}} < P_{\text{atmos}}$
 - Unsaturated Zone
 - Root Zone
 - Intermediate Zone
 - Capillary Fringe
- Water Table: $P_{\text{water}} = P_{\text{atmos}}$
- Phreatic Zone: $P_{\text{water}} > P_{\text{atmos}}$
 - Also called saturated zone or groundwater zone

Structure of the Sub-Surface



Summary

- Water pressure is the weight of water in the soil column per unit volume, $P_w = \rho_w g$
 - Think of the weight of the water pressing against the base of the column.
- The sub-surface has two principal zones, the *Vadose Zone* ($P_w < P_{at}$) and the *Phreatic Zone* ($P_w > P_{at}$).
 - Zones are divided by the water table ($P_w = P_{at}$).
 - The Vadose Zone has both air and water (or ice) in its pore spaces.
 - The Phreatic Zone has saturated pores.