

Self Check Questions Set 0 (based on Notes 1)

What is the difference between ρ_s and ρ_d ?

What are typical values of ρ_s for sand? Water? Air? Organic matter?

What is the effective porosity of a soil?

Why is a balance between micro and macro porosity needed to support plant growth?

What type of methods are used to measure the specific surface of a soil in the laboratory?

Which water properties are connected with the polarity of water molecules?

Does water flow more freely through soil at 10°C or 15°C?

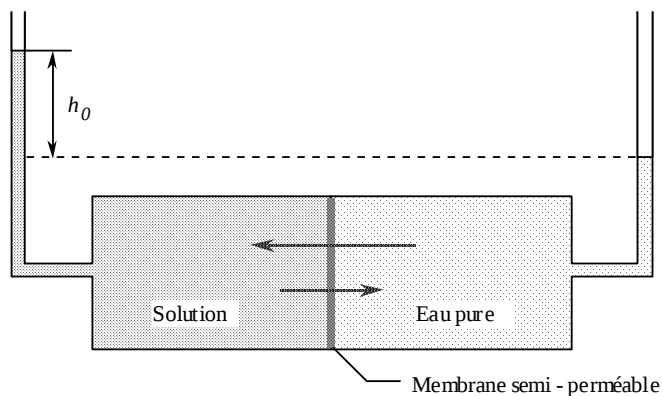
What is the thermal capacity of a soil?

As the (liquid) water saturation of a soil decreases, how does the (water-)saturated vapor pressure change?

Water vapor in soil air is typically at saturation (or close to saturation), why?

The air-water interface in a capillary tube is curved, not flat, why?

Is the water in a capillary tube under tension or compression? Why?



In the above figure, explain the mechanism(s) for the elevated liquid level (h_0)? How does this figure help explain why the roots of (some) crops cannot uptake sufficient water when saline irrigation water is applied?

The concentration of CO_2 is higher (and O_2 is lower) in soil air than the atmosphere, why?

Explain the following equation: $C_T = \varepsilon_a C_G + \theta C_L + \rho C_S$