Phys. 604 — Classical Electrodynamics

HW Assignment 11

Due Wed Nov 28 in my m/box.

Problem 4.28 from Griffiths (3rd ed.)

Two long coaxialcylindrical metal tubes (inner radius a, outer radius b) stand vertically in a tank of dielectric oil (susceptibility χ_e, mass density ρ. The inner one is maintained at potential V, the outer one is grounded (see picture in Griffiths textbook). To what height does the oil rise in the space between the tubes?