

HW assignment 12

Due Mon Nov 21 at 7 p.m. by email to IBalitsk@odu.edu or in my ODU mailbox.

Problem 4.48 from Griffiths (3rd ed.)

Two long coaxial cylindrical metal tubes (inner radius a , outer radius b) stand vertically in a tank of dielectric oil of susceptibility χ_e and 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?