

Special Problem 4-5.3

Determine the **electric field** created by the charge density:

$$\rho_v(\vec{r}) = \begin{cases} 0 & \rho < 1 \text{ m} \\ 4\epsilon_0 \rho^2 & 1 \text{ m} < \rho < 2 \text{ m} \\ 0 & \rho > 2 \text{ m} \end{cases}$$