

Special Problem 4-5.2

Determine the **electric field** created **everywhere** in free-space by the charge density:

$$\rho_v(\vec{r}) = \begin{cases} 0 & r < 1m \\ \frac{2\epsilon_0}{r} & 1m < r < 2m \\ 0 & r > 2m \end{cases} \quad \left[\frac{C}{m^3} \right]$$

Make sure your answer defines **$\mathbf{E}(\vec{r})$** **everywhere!**