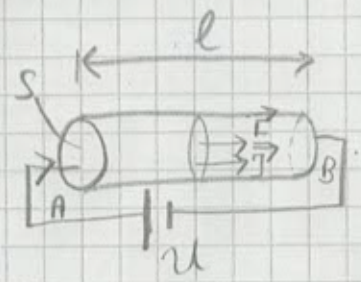
ET_12_S_2024_03_20 20.03.2024



$j = \frac{I}{S}$ $\quad I = \int \vec{j} \cdot d\vec{S}$ $\quad j = \sigma E$

σ – conductivitate

$\frac{1}{\sigma} = \rho$ $\quad \frac{I}{S} = \frac{E}{\rho}$

$[\sigma]\,[S/m]$

$[\rho] = [\Omega\, m]$

$E = \rho \frac{I}{S}$

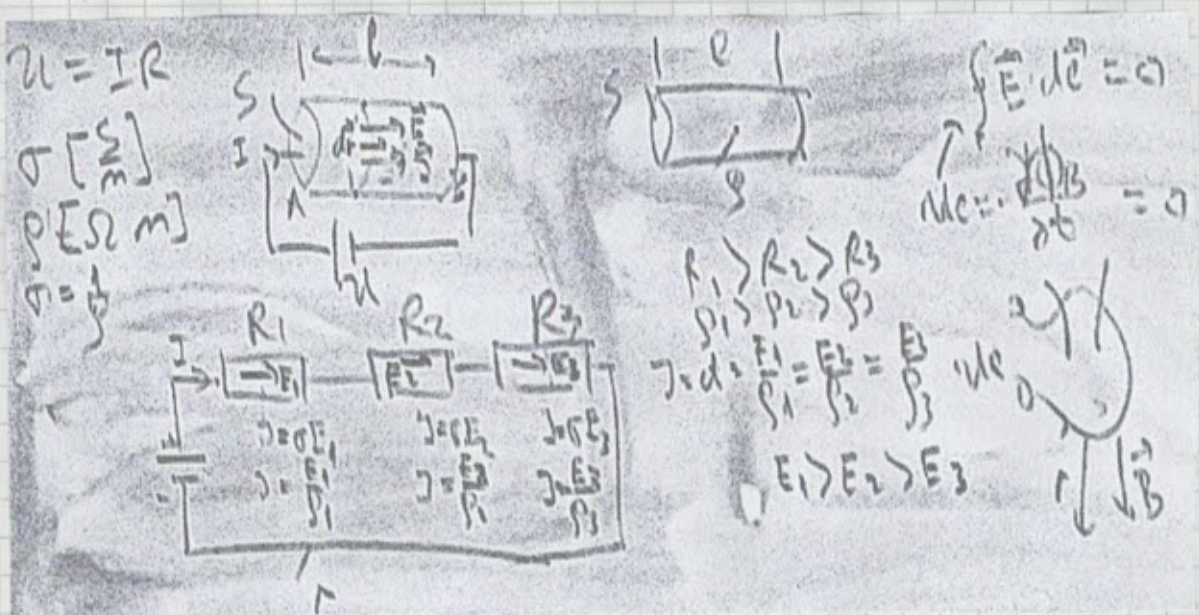
mag – dir.
elec. – alt.

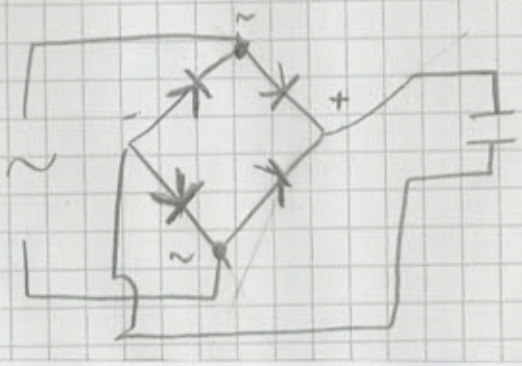
$$U = \int_A^B \vec{E} \cdot d\vec{r} = E \int_A^B dr = \rho \frac{I}{S}$$

$\sigma\ [\frac{S}{m}]$ – conductivitate

$\rho\ [\Omega\, m]$

$\sigma = \frac{1}{\rho}$



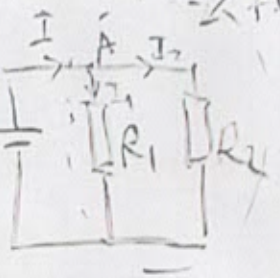


$U = IR$

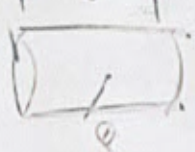
$\sigma \left[\frac{S}{m}\right]$

$\rho [\Omega m]$

$\sigma = \frac{1}{\rho}$



$\Rightarrow R_{ep}$



$R = \rho \frac{l}{S}$

$\oint \vec{E}\, d\vec{l} = 0$

$R_{eq} = R_1 + R_2 + R_3$

$\therefore R_1 < R_2$

$I = I_1 + I_2$

$\frac{U}{R_{ep}} = \frac{U}{R_1} + \frac{U}{R_2}$

$\frac{1}{R_{ep}} = \frac{1}{R_1} + \frac{1}{R_2}$

$R_{ep} = \frac{R_1 R_2}{R_1 + R_2}$

$R_{ep} = R_1 \cdot \frac{R_2}{R_1 + R_2} < 1$

$R_{ep} < R_1$