

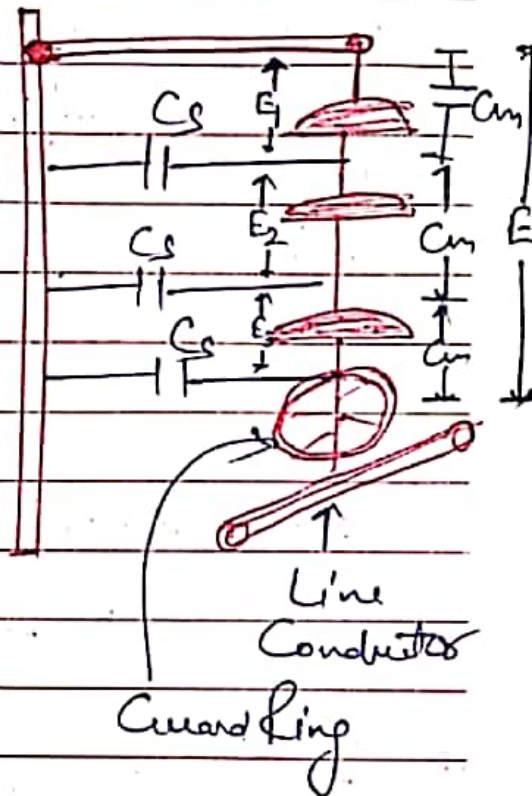
* [STRING EFFICIENCY] *

String efficiency = $\frac{\text{Voltage Across String}}{N \times \text{Voltage across disc Near to conductor.}}$

$$\eta = \frac{E}{N \times E_N}$$

$$k = \frac{C_s}{C_m} \quad k \ll 1 \quad \text{Always}$$

Capacitance Ratio



$$\frac{E_1}{1} = \frac{E_2}{1+k} = \frac{E_3}{1+3k+k^2} = \frac{E}{3+4k+k^2}$$

* [METHOD OF IMPROVING STRING EFFICIENCY] *

① Insulator Design method :- $\eta \propto \frac{1}{k} \propto \frac{C_m}{C_s}$

$[C_m \propto \frac{\epsilon A}{d}] \Rightarrow$ we increase Area and decrease width..

$[C_s \propto \frac{\epsilon A}{d}]$ we decrease C_s by using long cross Arm

& Improve string efficiency

* By using high value of capacitor near conductor! $(C \propto \frac{1}{V})$.

* Through guard ring / grading ring.