

(Normal condition)

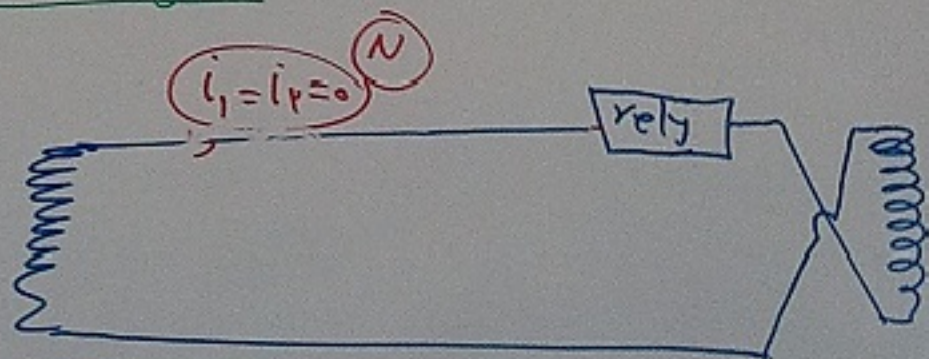
problem statement:

line length  $\uparrow \Rightarrow R \uparrow \Rightarrow$  power loss  $\uparrow \Rightarrow$

{ CT burden  $\uparrow$  (problem)  
error

Solution  $\Rightarrow$  ①

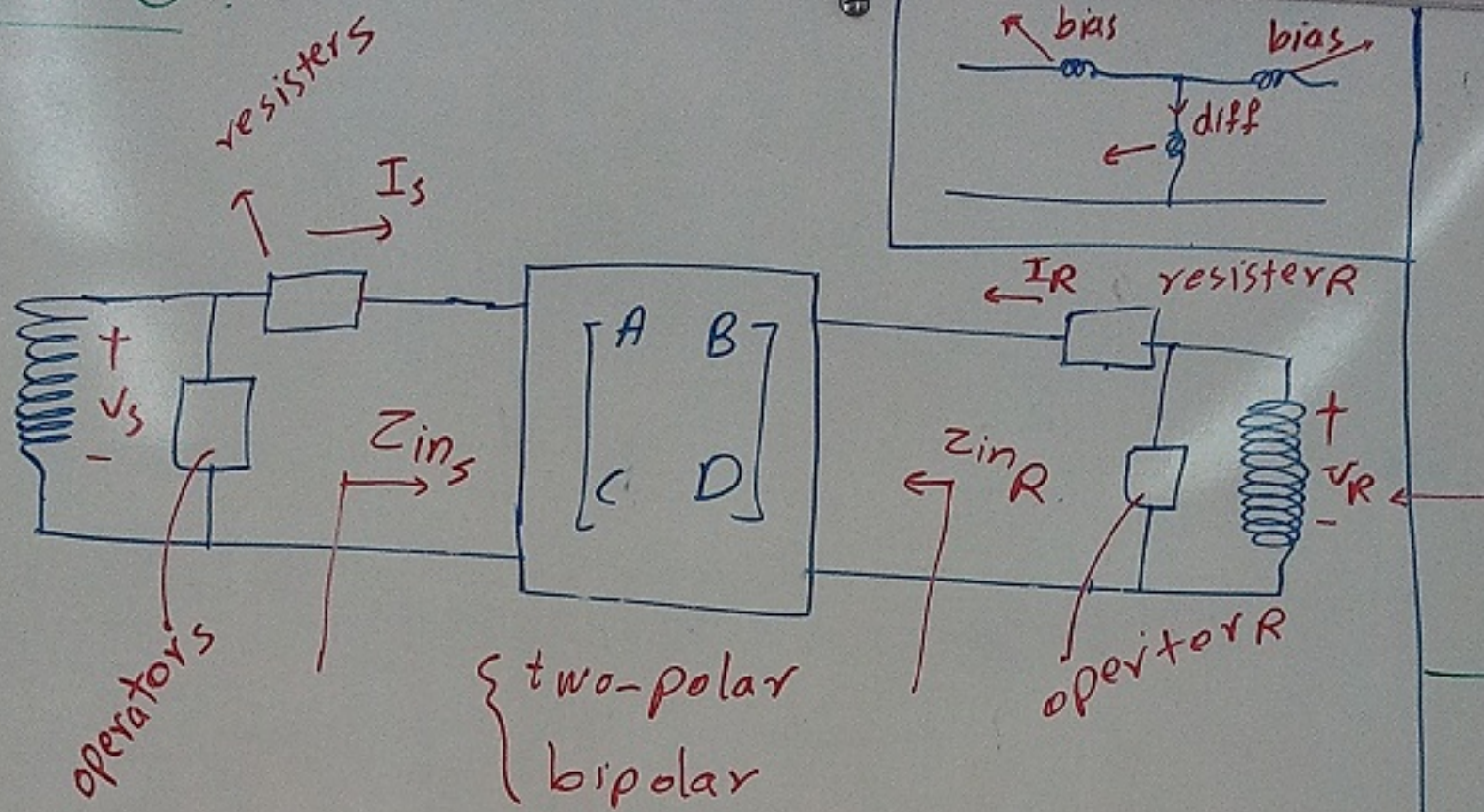
Connection type



{ load current  $\Rightarrow$  no current in secondary  $\Rightarrow$   
cause saturation



# Solution 2)



$\begin{bmatrix} A & B \\ C & D \end{bmatrix} \Rightarrow \begin{cases} 1) \text{ line model (long line)} \\ 2) \text{ compensator} \end{cases}$

From the compensator, we have:

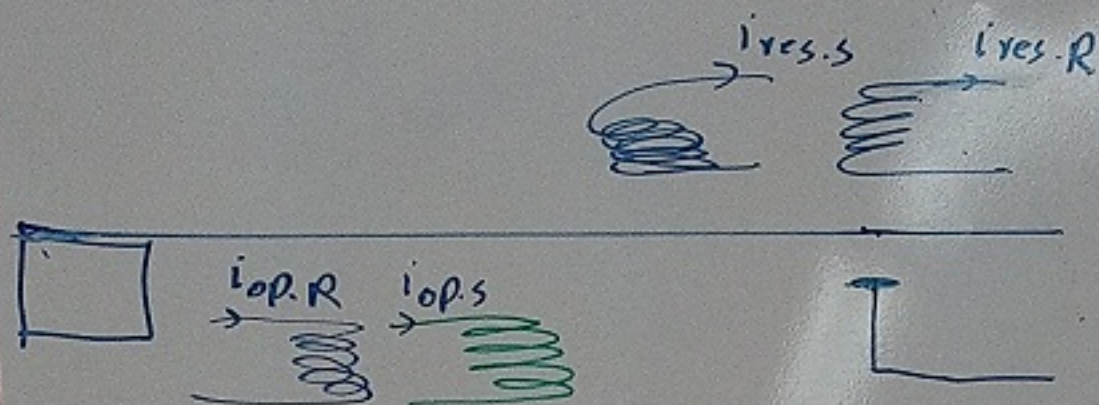
- saturation power loss  $\Rightarrow$  CT burden error
- decreasing  $\Rightarrow$  need negative resistance

loss

Compensator  $\Rightarrow$

- $\begin{cases} \text{Real}(Z_{in_s}) \downarrow \\ \text{Real}(Z_{in_r}) \downarrow \end{cases} \Rightarrow \text{need negative resistance}$
- $\begin{cases} \text{Im}(Z_{in_s}) \downarrow \\ \text{Im}(Z_{in_r}) \downarrow \end{cases} \Rightarrow Z \downarrow \Rightarrow I_s \uparrow$
- $\begin{cases} \text{Real}(Z_{in}) \uparrow \\ \text{Real}(Z_{in}) \uparrow \end{cases} \Rightarrow \text{power loss}$





$$\left\{ \begin{array}{l} \text{Im}(Z_{in}) \uparrow \\ \text{Im}(Z_{ins}) \uparrow \end{array} \right. \Rightarrow Z \uparrow \Rightarrow \frac{I_s}{I_R} \downarrow$$

add capacitance in parallel