



TRIVIAL GYRATOR

$$L = R_1 R_2 C$$

$$C_s(e_{IN} - e) = \frac{e}{R_1} \rightarrow C_s e_{IN} = e \left(C_s + \frac{1}{R_1} \right) \rightarrow$$

$$R_1 C_s e_{IN} = e (R_1 C_s + 1) \rightarrow e = \frac{R_1 C_s}{R_1 C_s + 1} e_{IN} \rightarrow$$

$$e_{IN} - e = e_{IN} \left[1 - \frac{R_1 C_s}{R_1 C_s + 1} \right] \rightarrow e_{IN} - e = \frac{e_{IN}}{R_1 C_s + 1} \rightarrow$$

$$i_{IN} = \left(C_s + \frac{1}{R_2} \right) (e_{IN} - e) = \left(C_s + \frac{1}{R_2} \right) \cdot \frac{e_{IN}}{R_1 C_s + 1} \rightarrow$$

$$i_{IN} = \frac{R_2 C_s + 1}{R_1 C_s + 1} \cdot \frac{e_{IN}}{R_2} \rightarrow Z_{IN} = \frac{e_{IN}}{i_{IN}} \rightarrow$$

$$Z_{IN} = \frac{R_2 \cdot (R_1 C_s + 1)}{R_2 C_s + 1} = \frac{R_1 R_2 C_s + R_2}{\underbrace{R_2 C_s + 1}}$$

"INDUCTIVE", $L = R_1 R_2 C$, BUT \nearrow SCREWS IT.

COMPARE TO: