EXO AOP

4/1

$$\frac{\underline{u}_e\, jC\omega + \frac{\underline{u}_s}{R}}{jC\omega + \frac{1}{R}} = \underbrace{V_- = V_+}_{\varepsilon = 0} = 0$$

$$\underline{H} = \frac{\underline{u}_s}{\underline{u}_e} = -jRC\omega$$

$$\frac{\underline{U}_s}{\underline{U}_e} = \frac{\underline{u}_s}{\underline{u}_e} = -jRC\omega$$

$$\Rightarrow \underline{u}_s = -RC\,(j\omega\,\underline{u}_e)$$

$$\Rightarrow u_s(t) = -RC\,\frac{du_e}{dt}$$

4/2 intérêt : caractère dérivateur

$$|\underline{H}| = R_2 C\omega \xrightarrow[HF]{} \infty$$ Risque de SAT

4/3/a

$$0 = V_+ = V_- = \frac{\frac{\underline{u}_s}{R} + \frac{\underline{u}_e}{R + \frac{1}{jC\omega}}}{\frac{1}{R_2} + \frac{1}{R + \frac{1}{jC\omega}}} = \frac{-R_2}{R + \frac{1}{jC\omega}} = -\frac{jR_2C\omega}{1 + jRC\omega}$$

$$\underline{H} = -\frac{j\frac{\omega}{\omega_2}}{1 + j\frac{\omega}{\omega_0}} ; \quad \begin{cases} \omega_2 = \frac{1}{R_2 C} \\ \omega_0 = \frac{1}{RC} \end{cases}$$

4/3/b

BF $\Rightarrow \underline{H} \sim -j\frac{\omega}{\omega_2} = -jR_2C\omega \Rightarrow$ dérivateur

4/3/c

HF $\Rightarrow \underline{H} \sim -\frac{\omega_0}{\omega_2} = -\frac{R_2}{R} \not\to \infty$ plus de SAT ☺

$\Rightarrow$ "pseudo-dérivateur"