



# Montage fondamentaux pour Ampli-op



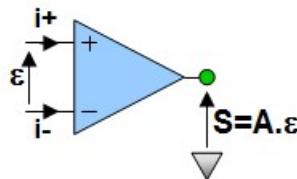
## Hypothèses AOP

Ampli-op parfait :

$$i_+ = 0 \text{ & } i_- = 0$$

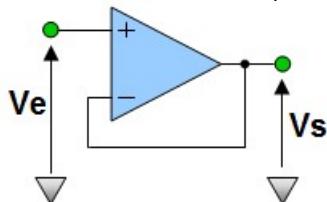
$$A \rightarrow \infty$$

Fonctionnement en régime linéaire :  
 $\varepsilon = 0$



## Suiveur

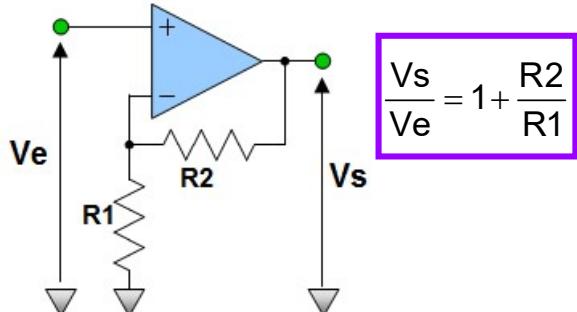
On recopie le signal en entrée sans prélever de courant



$$V_s = V_e$$



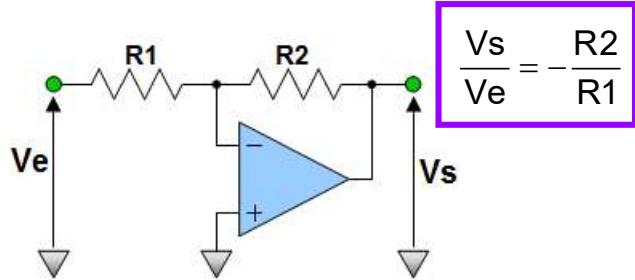
## Amplificateur non inverseur



$$\frac{V_s}{V_e} = 1 + \frac{R_2}{R_1}$$



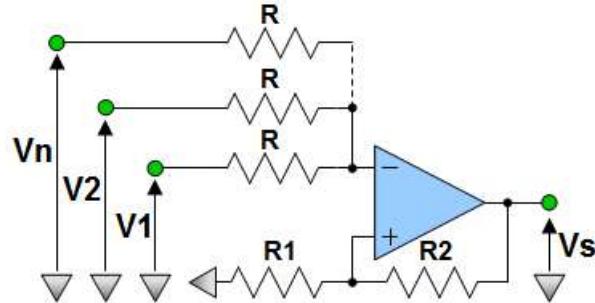
## Amplificateur inverseur



$$\frac{V_s}{V_e} = -\frac{R_2}{R_1}$$



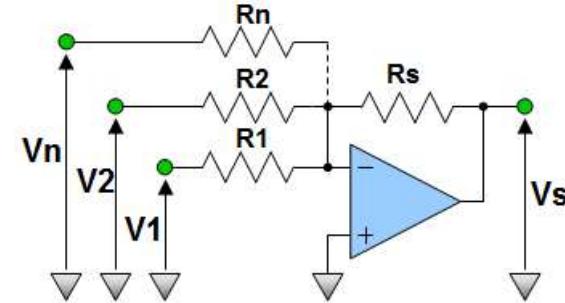
## Sommateur non inverseur



$$V_s = \left(1 + \frac{R_2}{R_1}\right) \cdot \left(\frac{V_1 + V_2 + \dots + V_n}{n}\right)$$



## Sommateur inverseur



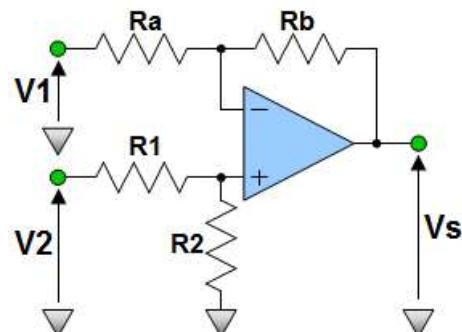
$$V_s = -R_s \cdot \left(\frac{V_1}{R_1} + \frac{V_2}{R_2} + \dots + \frac{V_n}{R_n}\right)$$

n : nombre de branche

avec n = 2 et si R2 = R1     $V_s = V_1 + V_2$     avec n = 2 et si R2 = R1 = Rs     $V_s = -(V_1 + V_2)$



## Soustracteur



$$V_s = \left(1 + \frac{R_b}{R_a}\right) \cdot \left(\frac{R_2}{R_1 + R_2}\right) \cdot V_2 - \frac{R_2}{R_1} \cdot V_1$$

$$\text{si } \frac{R_b}{R_a} = \frac{R_2}{R_1} \quad V_s = \left(\frac{R_2}{R_1}\right) \cdot (V_2 - V_1)$$