Régime transitoire

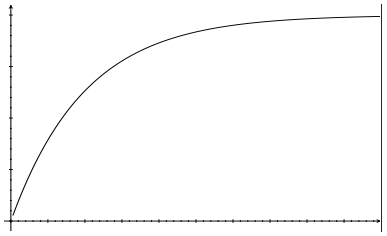
circuit RC

charge du condensateur

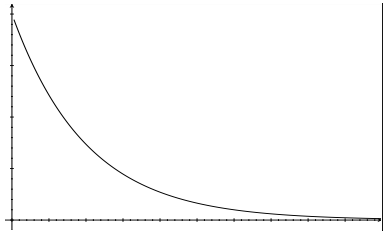
- générateur de tension constante

$\tau = RC$

$u_c = E\left(1 - \exp(-\frac{t}{\tau})\right)$



$i = \frac{E}{R}\exp(-\frac{t}{\tau})$

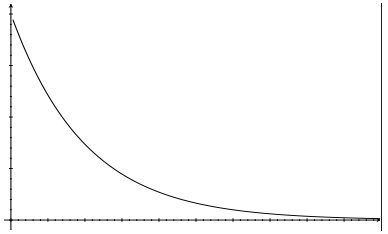


décharge du condensateur

- on éteint le générateur
- à t = 0 s, $u_c = E$

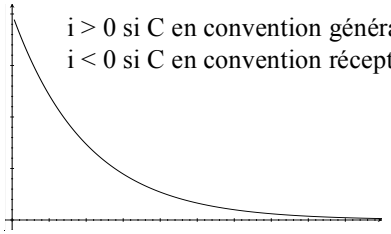
$\tau = RC$

$u_c = E\exp(-\frac{t}{\tau})$



$|i| = \frac{E}{R}\exp(-\frac{t}{\tau})$

i > 0 si C en convention générateur
i < 0 si C en convention récepteur



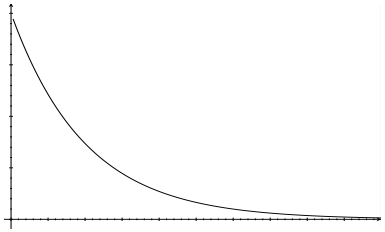
Circuit RL

établissement du courant

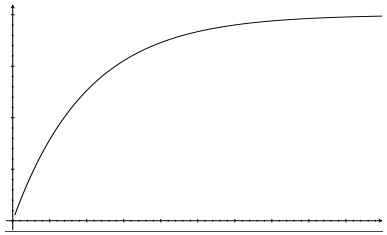
- générateur idéal de tension E
- à t = 0 s , i = 0 A

$\tau = L/R$

$u_L = E\exp(-\frac{t}{\tau})$



$i = \frac{E}{R}\left(1 - \exp(-\frac{t}{\tau})\right)$

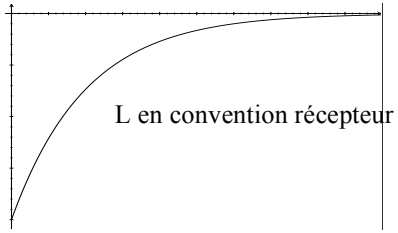


rupture du courant

- on éteint le générateur
- à t = 0 s , i = E/R

$\tau = L/R$

$u_L = E\exp(-\frac{t}{\tau})$



$i = \frac{E}{R}\exp(-\frac{t}{\tau})$