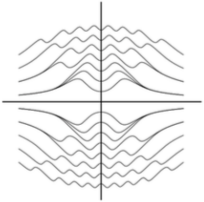
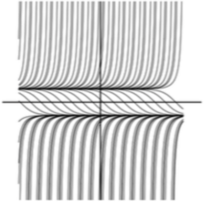
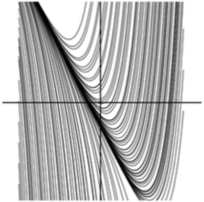
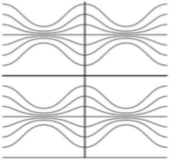
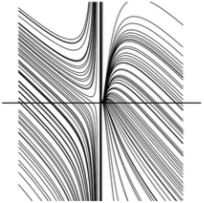
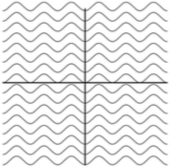












$$x' = x^2 - 1$$

$$x' = x/(1 - t^2)$$

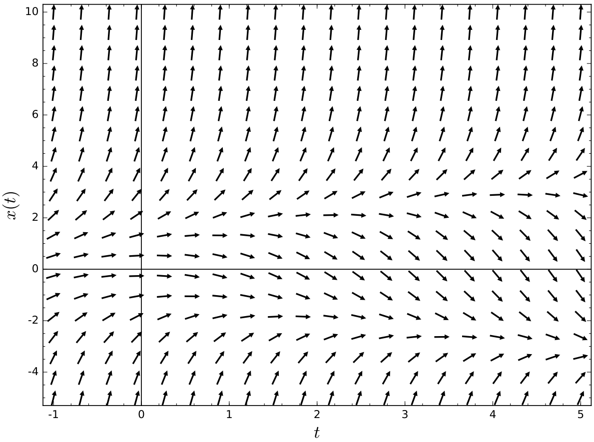
$$x' = \sin t \sin x,$$

$$x' = \sin(tx)$$

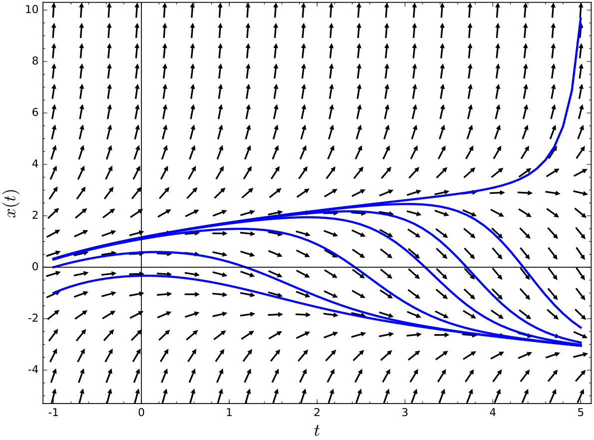
$$x' = 2t + x$$

$$x' = \sin(3t)$$

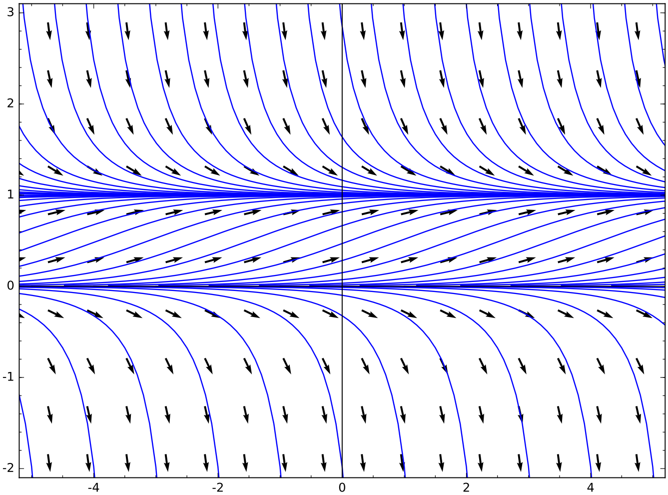
Associer portrait et ÉD !



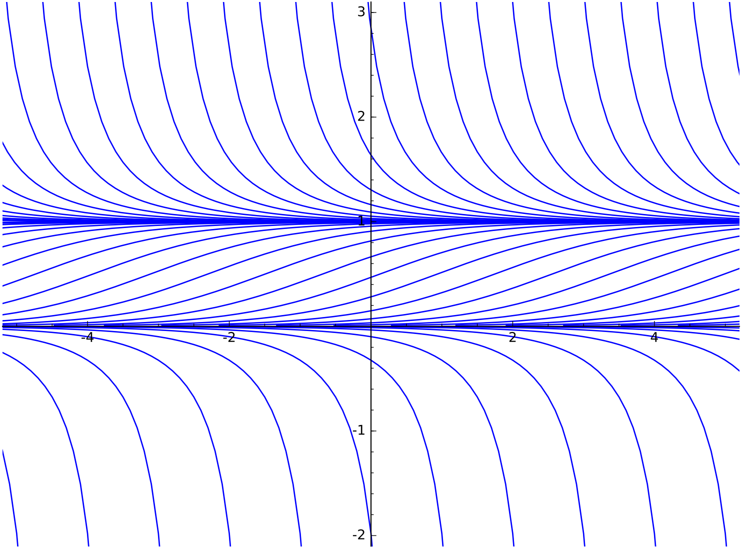
Champ de directions pour l'éd $y' = y^2/2 - x$ *dans le pavé* $[-1, 5] \times [-5, 10]$.



Champ de directions pour l'éd $y' = y^2/2 - x$ *dans le pavé* $[-1,5] \times [-5,10]$ *et quelques trajectoires.*

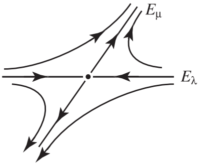


Portrait de phase pour l'ÉD $y' = y - y^2$ avec champ de vecteurs (normalisés) de l'ÉD : $y = 1$ (resp. $y = 0$) est un point d'équilibre stable (resp. pour l'ÉD $y' = y^2 - y$)

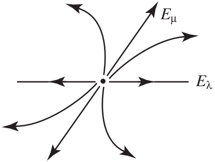


Portrait de phase pour $y' = y - y^2$: $y = 0$ est un point d'équilibre stable

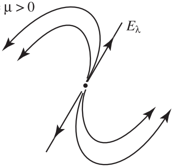
Selle : $\lambda < 0 < \mu$



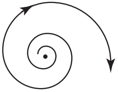
Nœud :
$\lambda > \mu > 0$



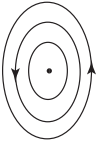
Nœud impropre :
$\lambda = \mu > 0$

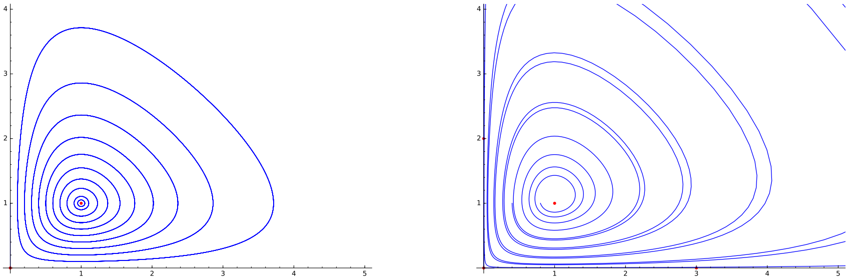


Foyer :
2 valeurs propres non réelles



Centre:
2 valeurs propres imaginaires conjuguées





Le portrait de phase de Lotka-Volterra $(x', y') = (x(1-y), -y(1-x))$ *(trajectoires périodiques) et de sa perturbation* $(x', y') = (x(1-y) + x^2/10, -y(1-x))$.