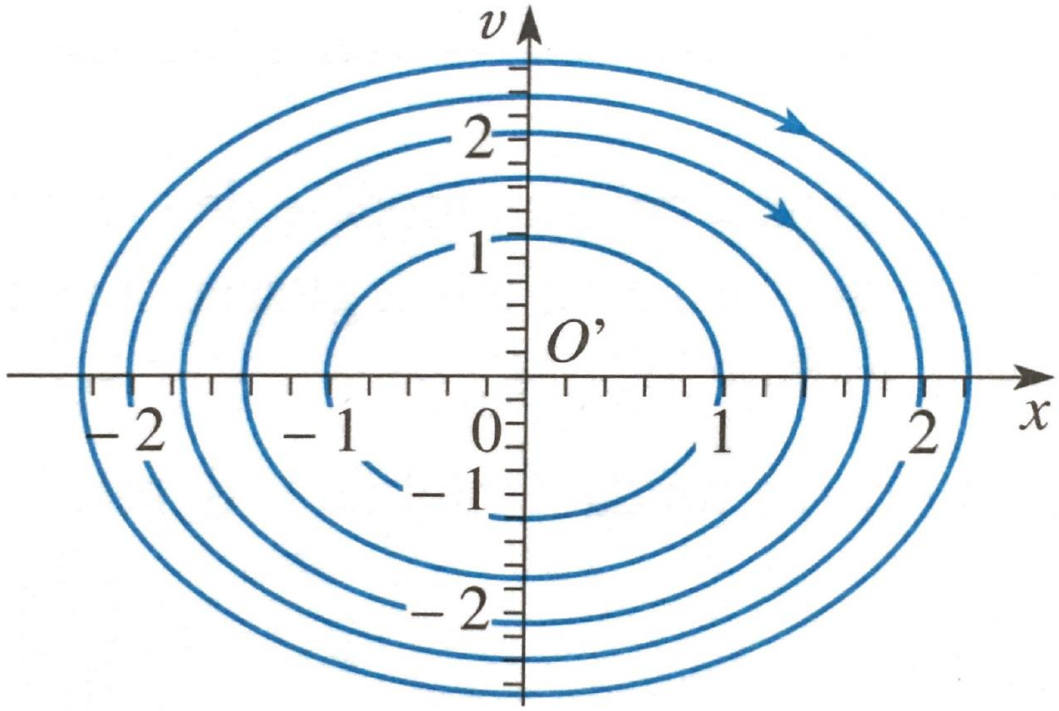
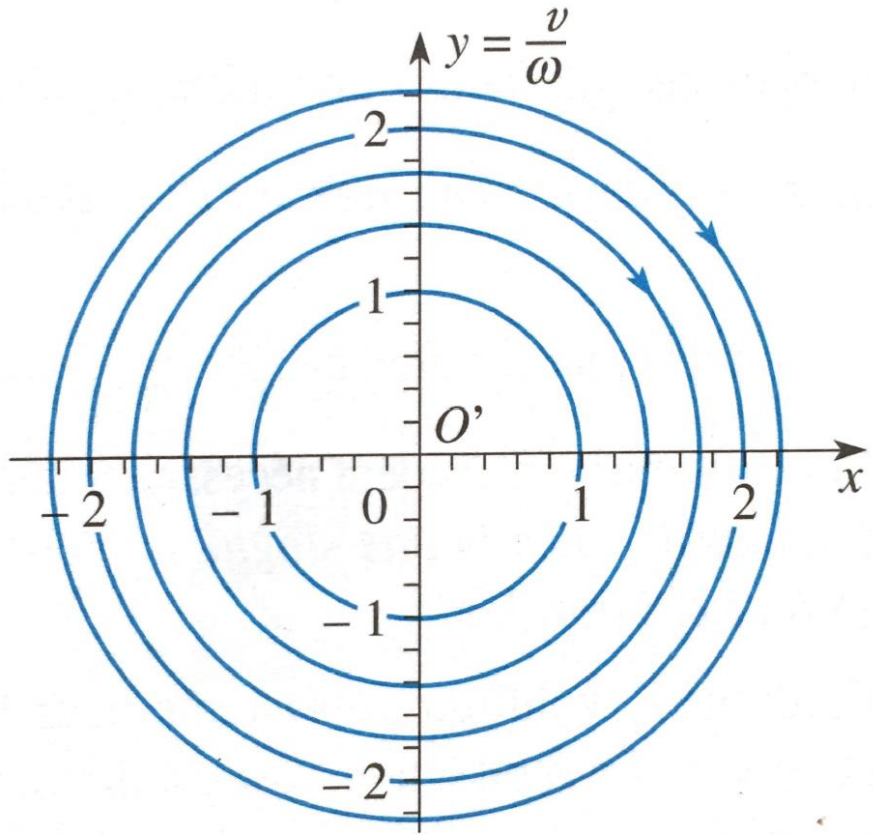
L.P. 49 – Oscillateurs ; portraits de phase et non-linéarité

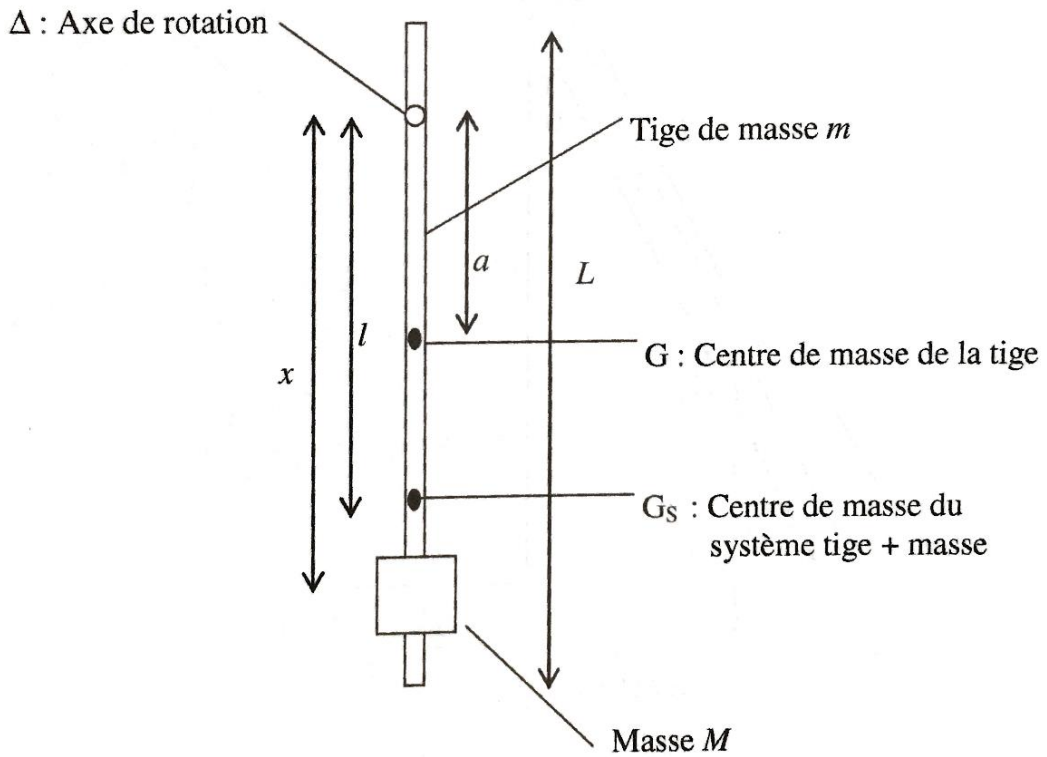
Marchetti Benjamin

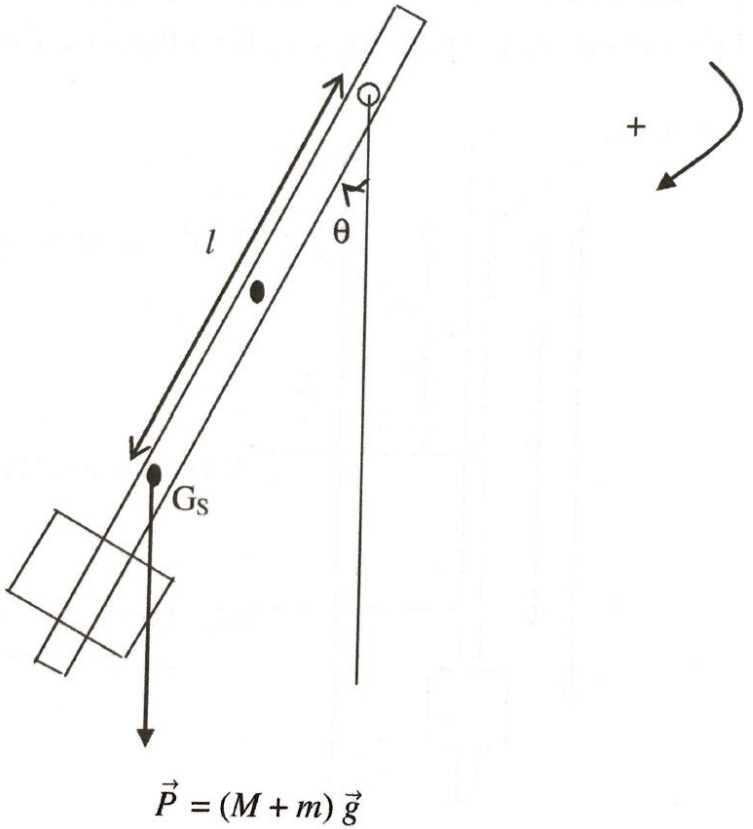
1. L'oscillateur non amorti
L'oscillateur harmonique



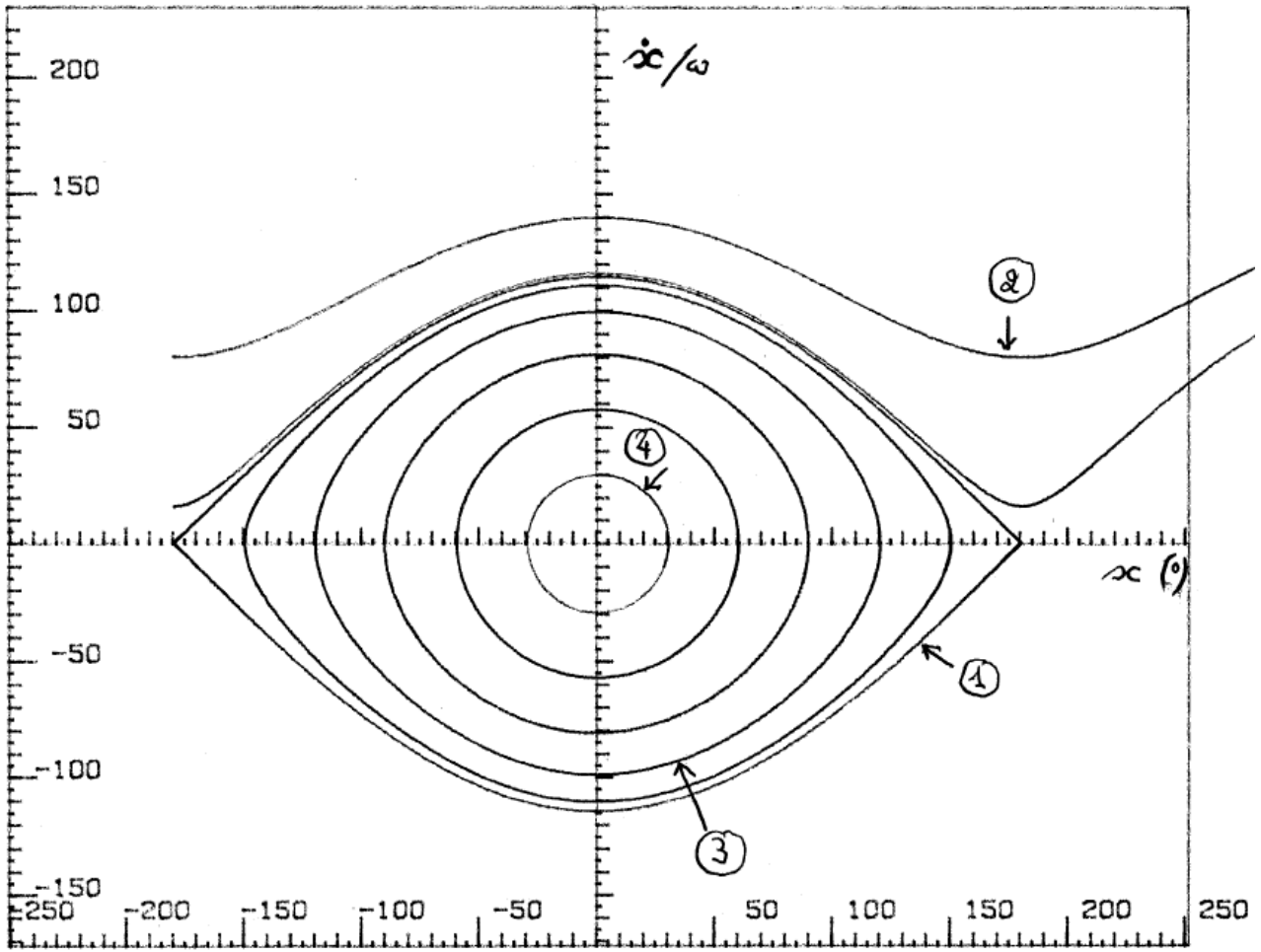


1. L'oscillateur non amorti
Le pendule pesant





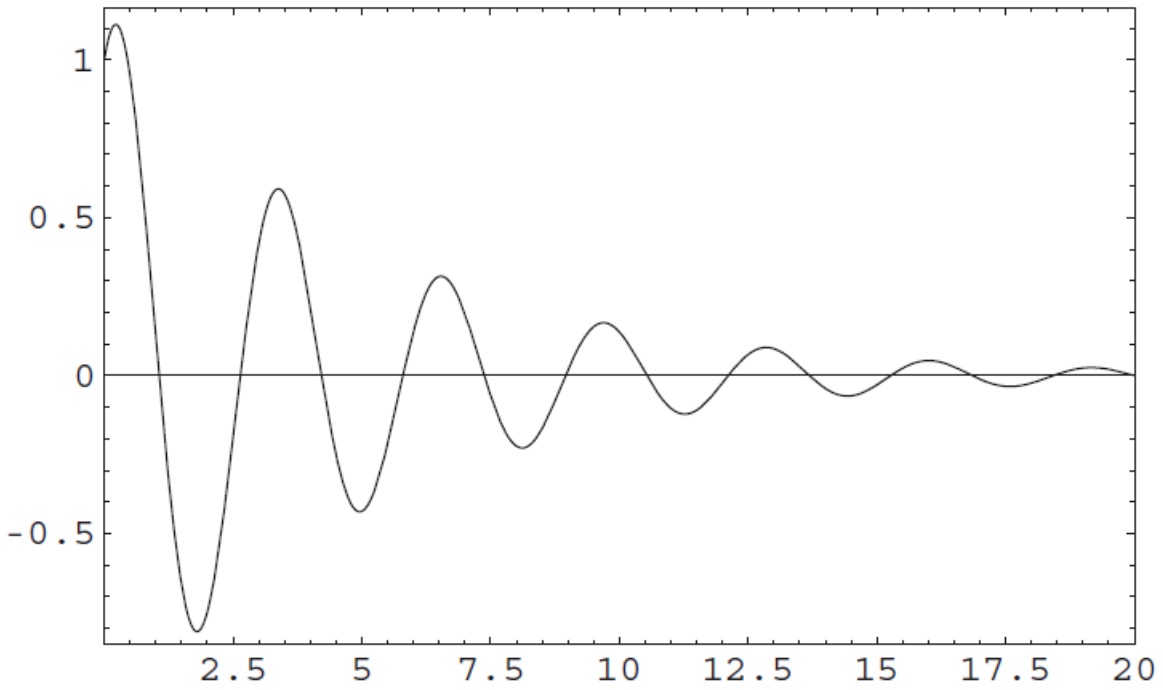
1. L'oscillateur non amorti
Le pendule pesant

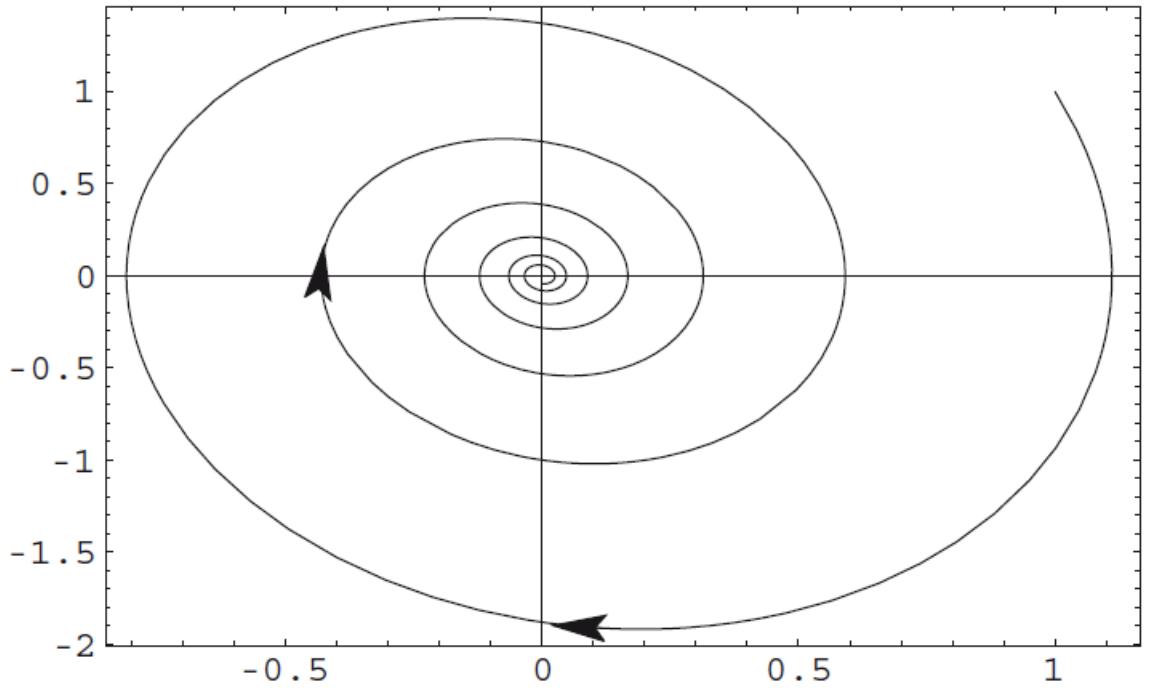


2. L'oscillateur amorti

L'oscillateur harmonique amorti (par frottement fluide)

$$\xi > 0$$

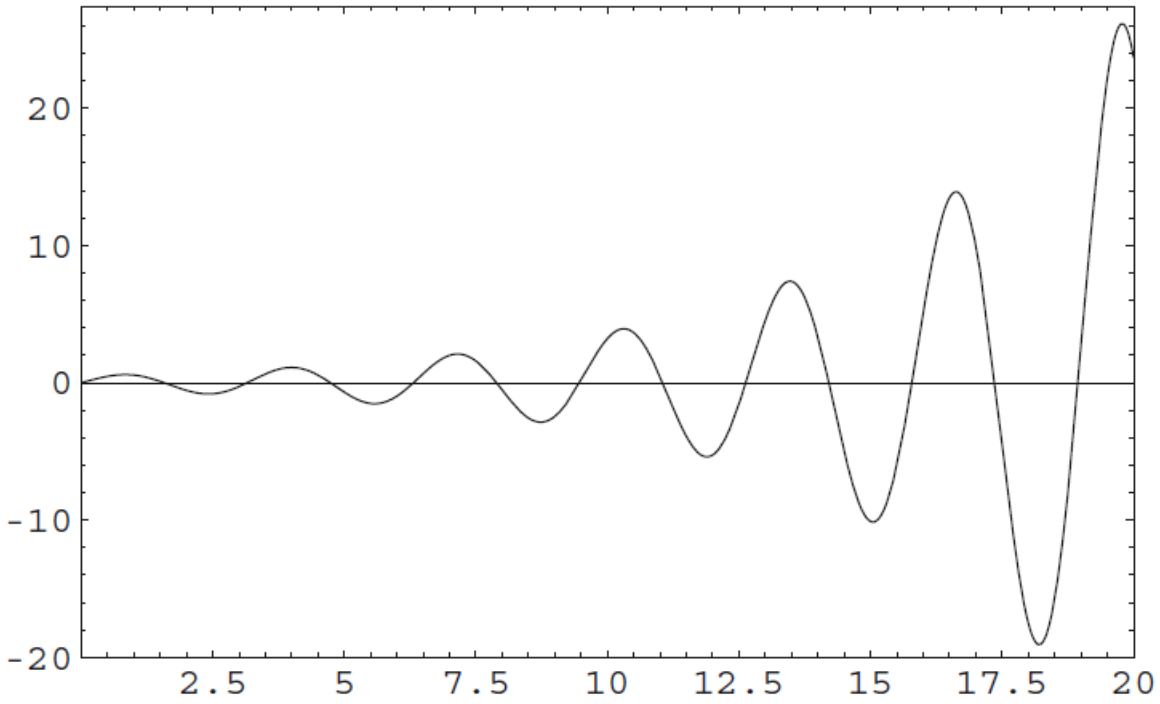


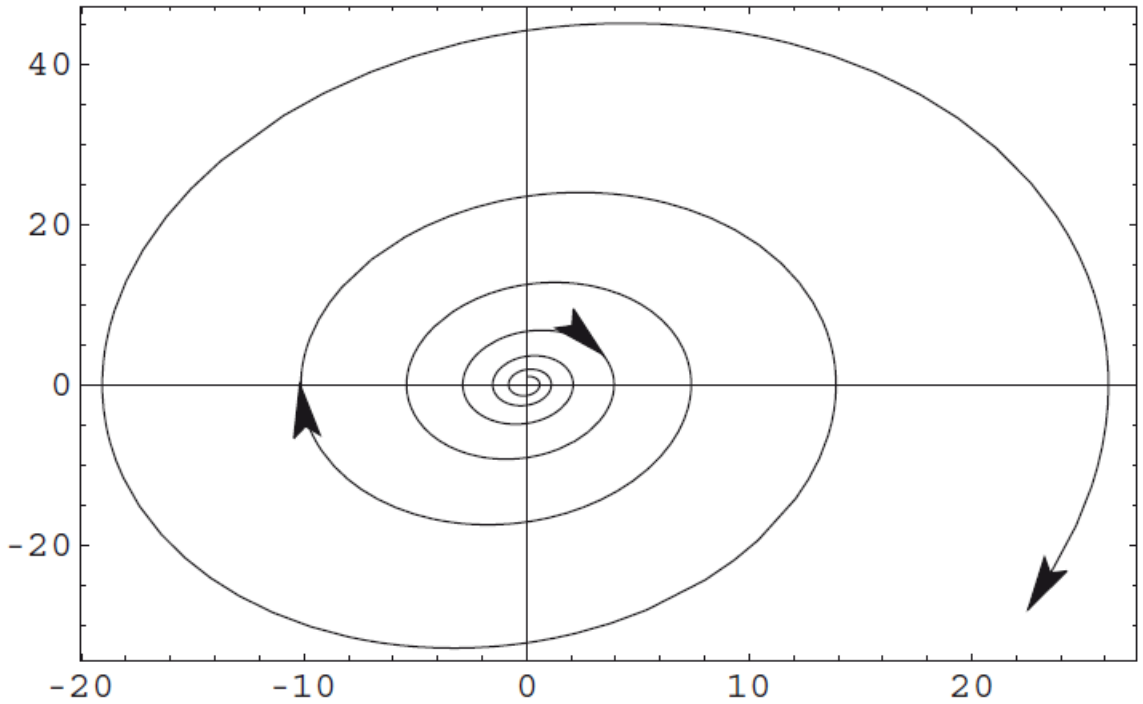


2. L'oscillateur amorti

L'oscillateur harmonique amorti (par frottement fluide)

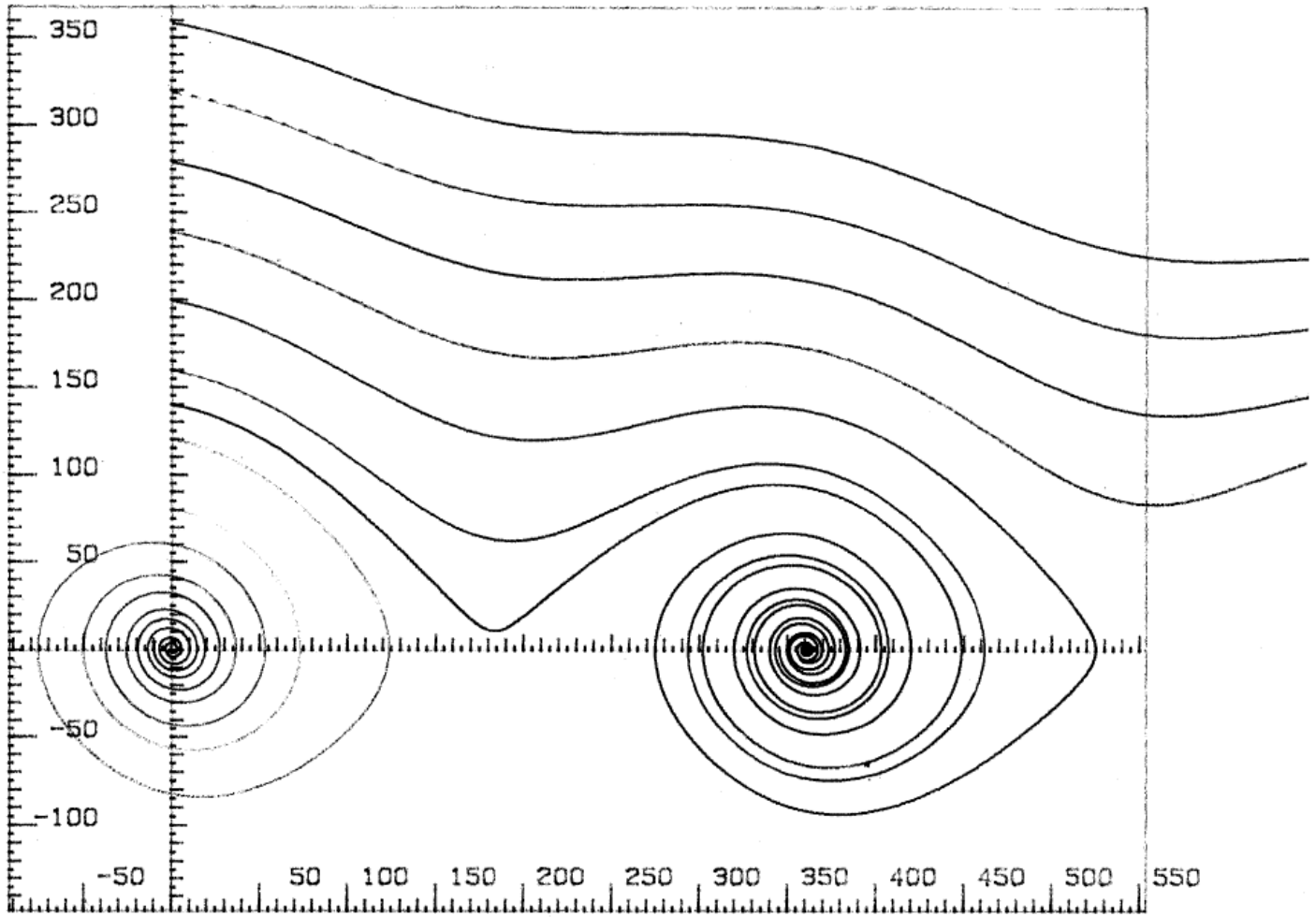
$$\xi < 0$$



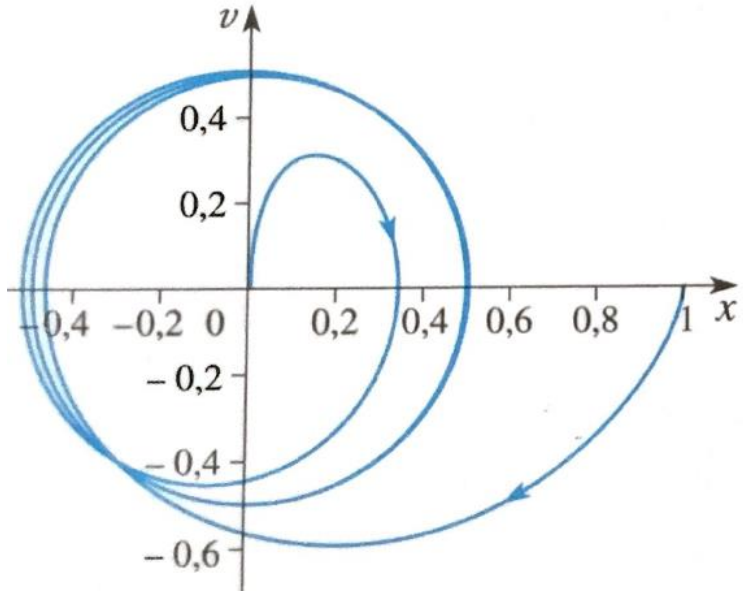


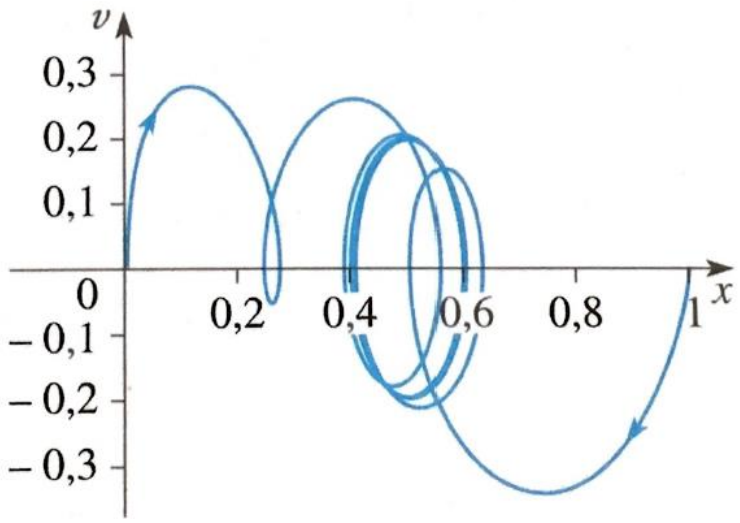
2. L'oscillateur amorti

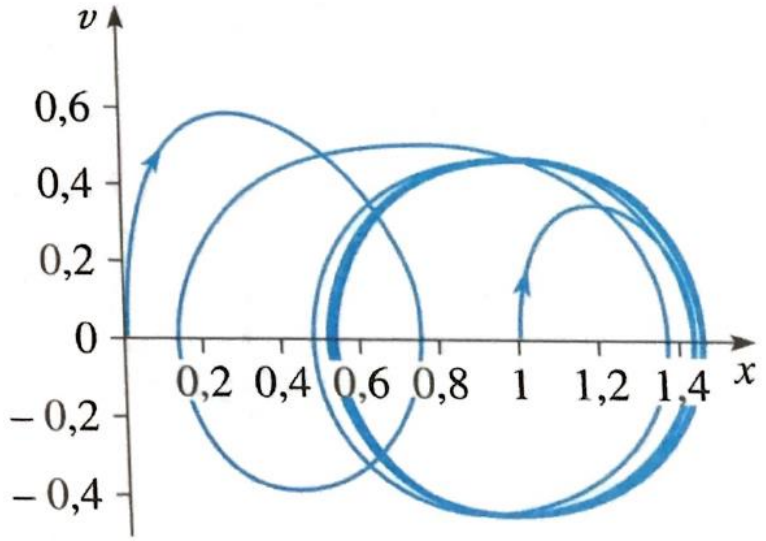
Le pendule pesant



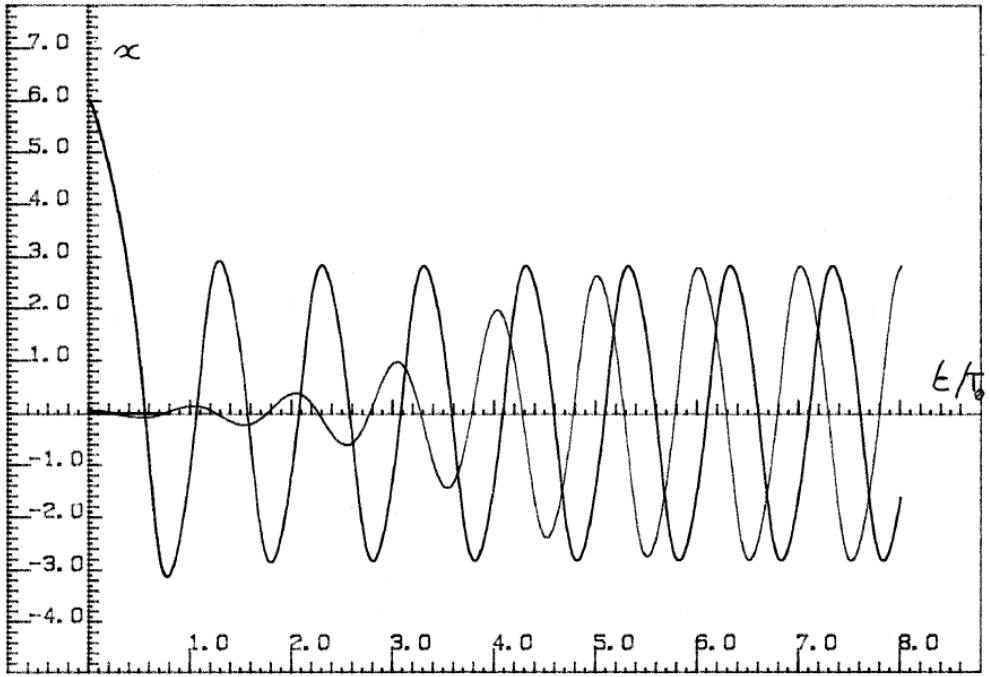
3. L'oscillateur forcé

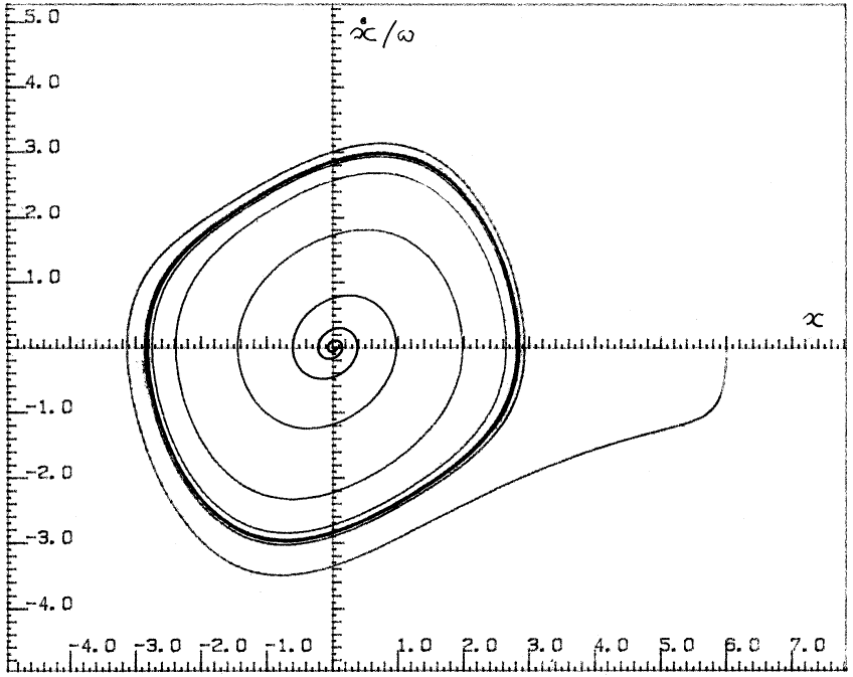




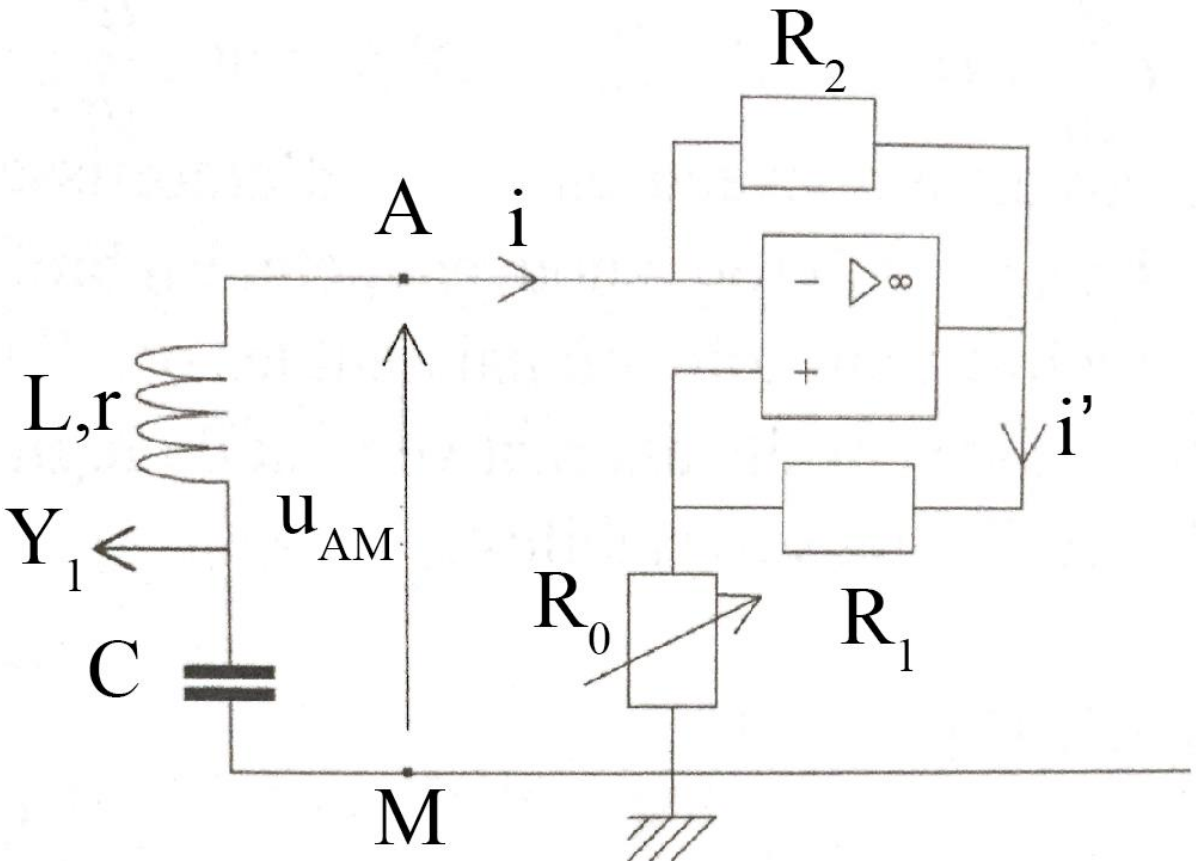


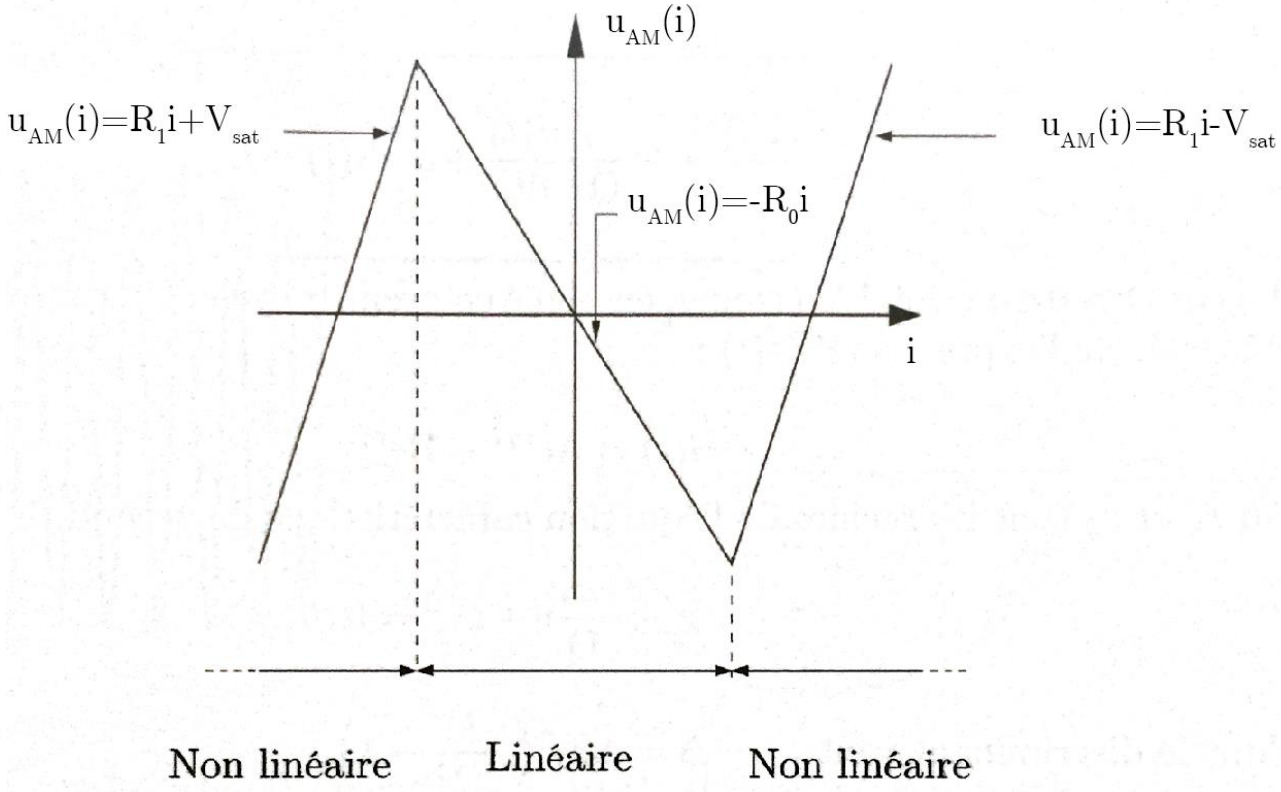
4. L'oscillateur auto-entretenu
Le modèle de Van der Pol





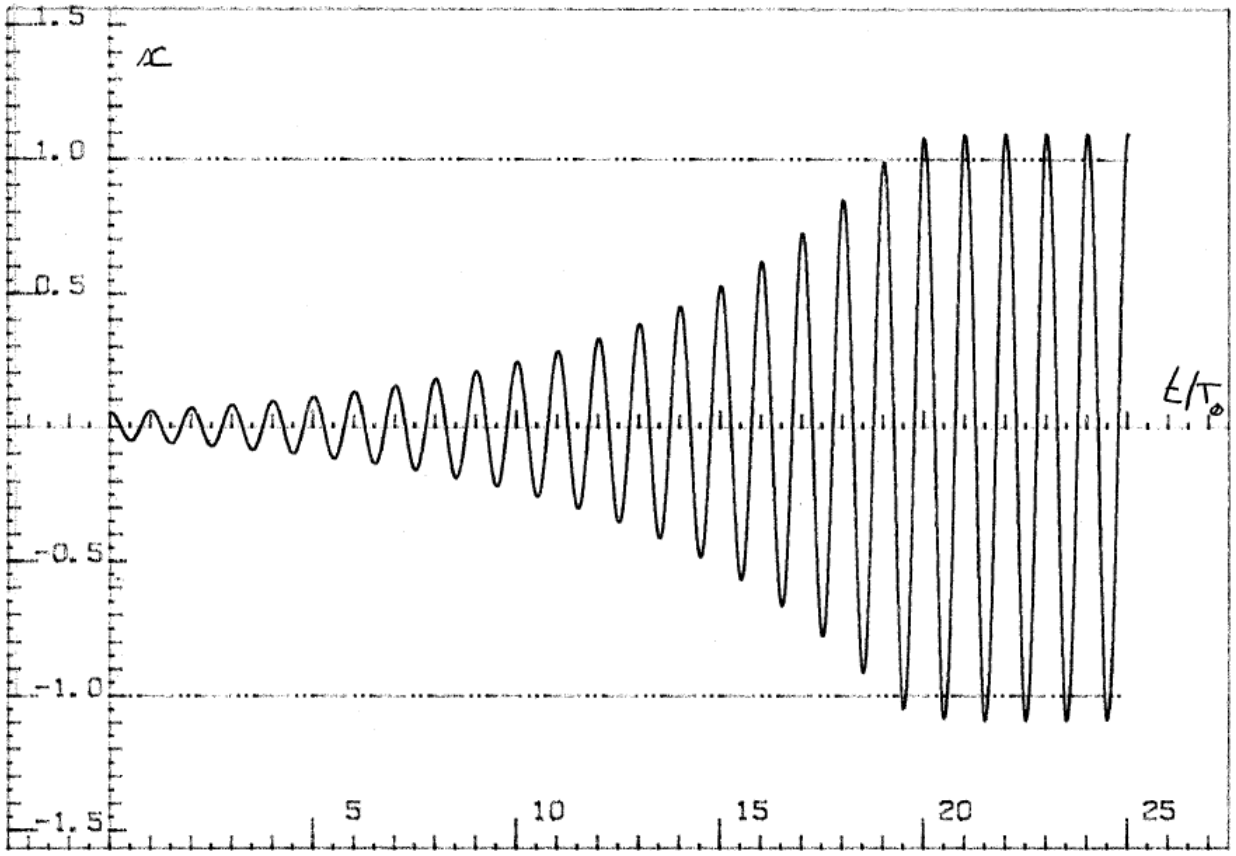
4. L'oscillateur auto-entretenu
L'oscillateur à résistance négative

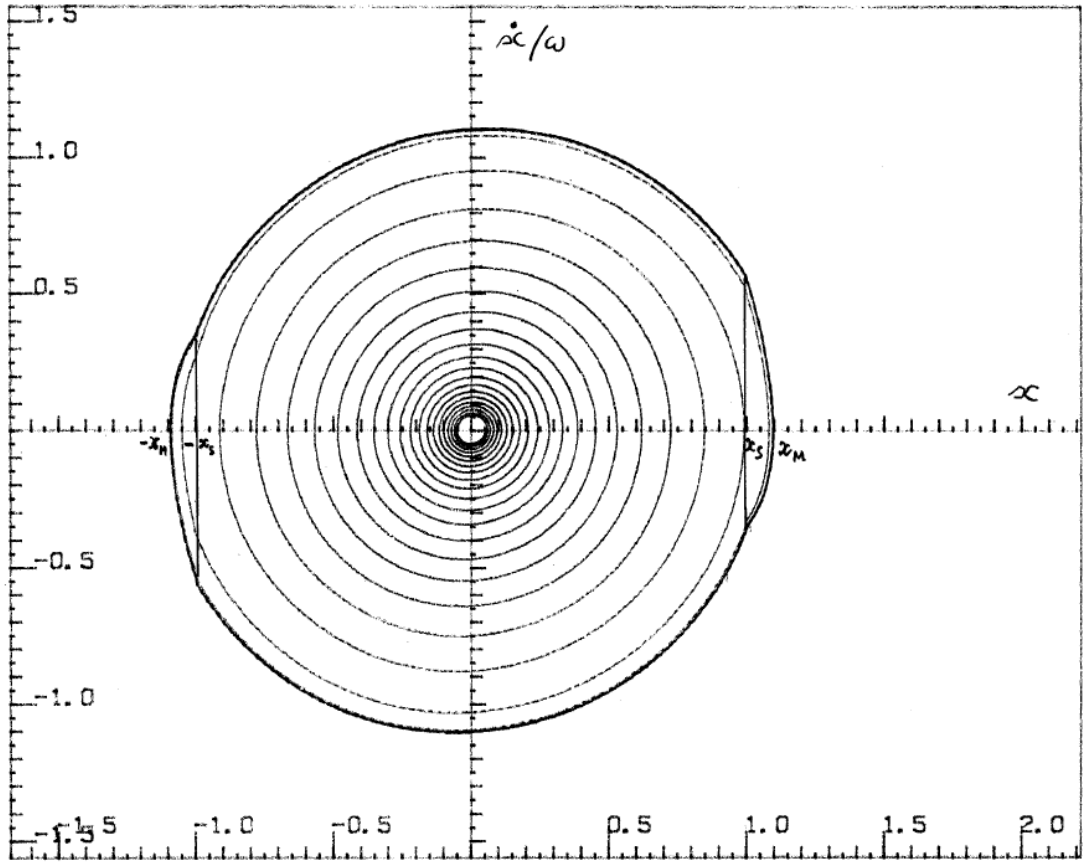




4. L'oscillateur auto-entretenu
L'oscillateur à résistance négative

$Q=-20 - \tau=0.2$





4. L'oscillateur auto-entretenu
L'oscillateur à résistance négative

$Q=-4 - \tau=0.2$