

```

clear

ymin=-4. ; ymax=+4. ;
ypmin=-3. ; ypmax=+3. ;

n=628;
h=0.01;
y(1)=0.5;
yp(1)=0.;

duree=n*h;

for i=1:n
y(i+1) = y(i) + h * yp(i);
yp(i+1) = yp(i) - h * sin(y(i));
end

plot2d(y,yp,rect=[ymin,ypmin,ymax,ypmax])
xtitle('Pendule theta'''+sin(theta)=0','theta','theta'')

//pause

delta=0.5;
y=[ymin:delta:ymax];yp=[ypmin:delta:ypmax];
fy=ones(length(y),1)*yp;
fyp=-sin(y)'*ones(1,length(yp));
champ(y,yp,fy,fyp,)
xtitle('champs de vecteurs pour le pendule theta'''+sin(theta)=0','theta','theta'')

```