Strings and Things

1. ✓
2. Yes.
3. Yes.

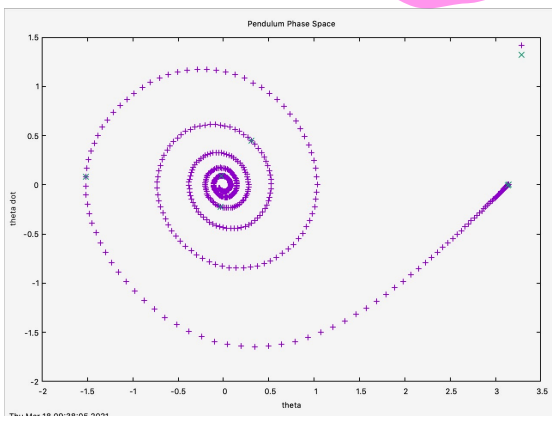
I have the same name and changed the output successfully

Upgrades from the diffeq_oscillation to diffeq_pendulum code

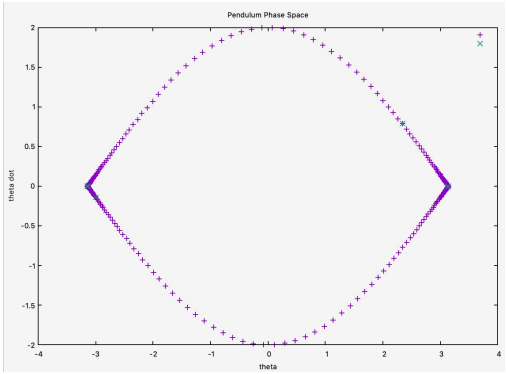
1. ✓
2. ✓

Damped (Undriven) Pendulum

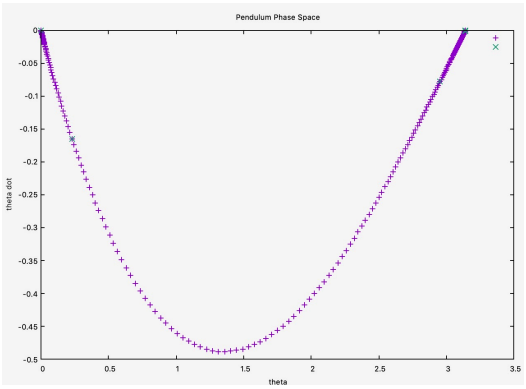
1. ✓
2. output file : diffeq_pendulum_0.2.dat
3. $f_{ext} = 0$ $\alpha = .2$ $\theta_0 = \pi$



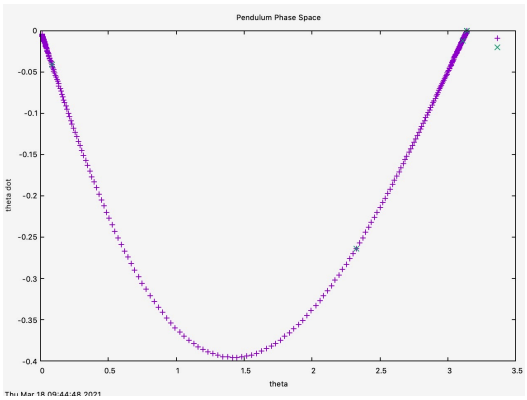
$\alpha = 0$



$\alpha = 2$

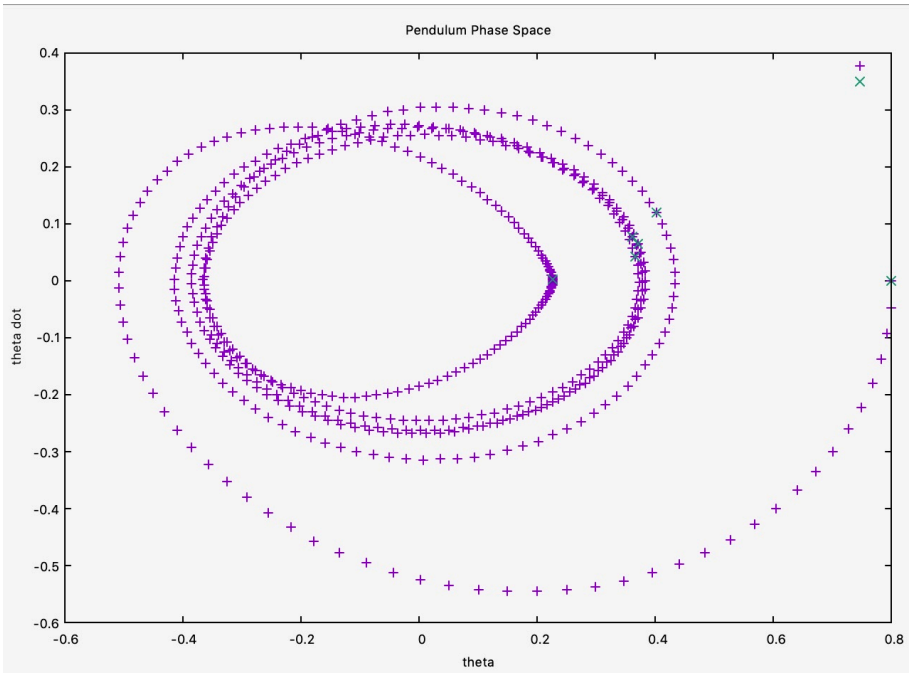


$\alpha = 2.5$



Damped, Driven Pendulum

1.

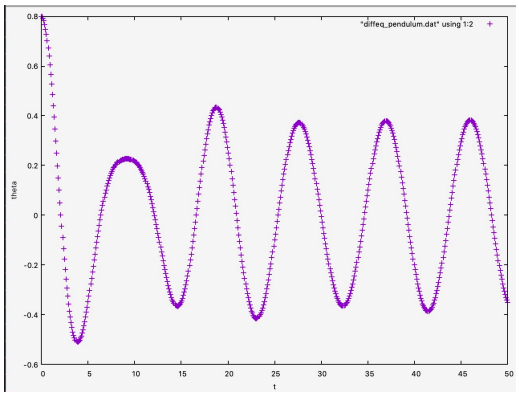


they show that this does not have periodic behavior

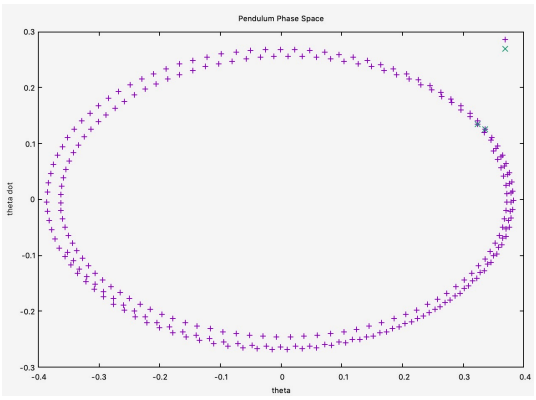
2. ✓

3. plot_start: t = 27s

not entirely



→



Looking for Chaos

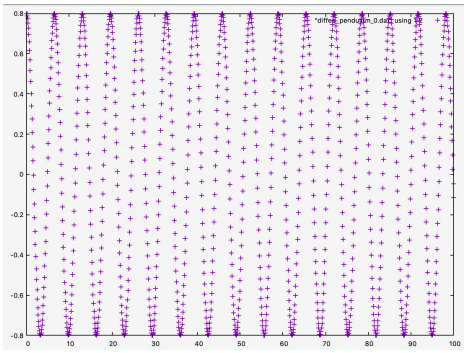
1. ✓

2.

α: 0 f_ext: 0 w_ext: .689 θ_0: .8 $\dot{\theta}_0$: 0

plot start: 0 plot end 100

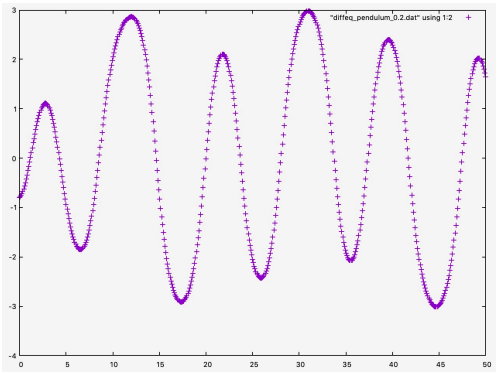
t_start: 0 t_end 100



a: .2 f_{ext}: .52 w_{ext}: .689 θ_0: -.8 $\dot{\theta}_0$: .1234

Plot start: 0 plot end 100

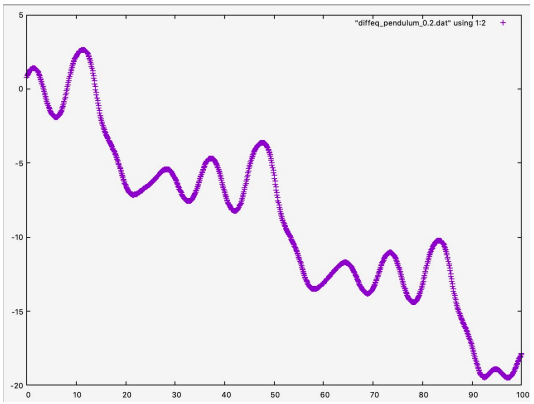
t_{start}: 0 t_{end} 100



a: .2 f_{ext}: .52 w_{ext}: .694 θ_0: .8 $\dot{\theta}_0$: .8

Plot start: 0 plot end 100

t_{start}: 0 t_{end} 100

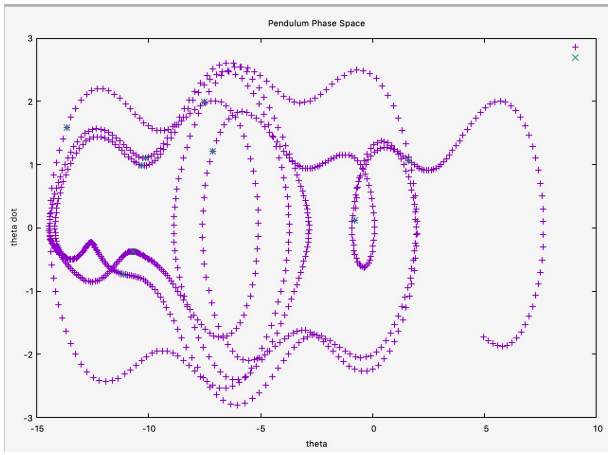


- the green points can be counted to find the number of periods
- I think the fourier transform would give the number and value of each frequency. But, if you look at the peaks/repitition in the graphs you can just count.

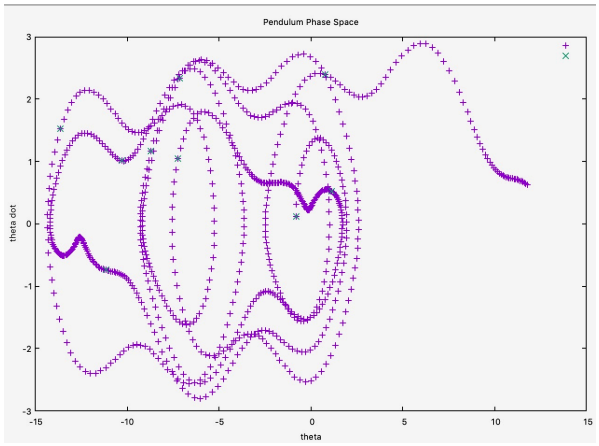
3. α: .2 f_{ext}: .9 ω_{ext}: .54 θ_0: -.8 $\dot{\theta}_0$: .1234

Plot start: 0 plot end 100

t_0 start: 0 t_0 end 100



x_0: -.8



x_0: -.81

- it seems like the beginning and ends of the plot change, and the middle stays relatively the same.