

AC Analysis Limits

Run Add Delete Expand... Stepping... Properties... Help...

Frequency: Linear 1, 1e-3 Run Options: Normal  
 Number of Points: 1001 State Variables: Zero  
 Temperature: Linear 27  
 Maximum Change %: 5  
 Noise Input: NONE  
 Noise Output: 2

☒ Operating Point  
☐ Auto Scale Ranges  
☐ Accumulate Plots

☐ Ignore Expression Errors

	Page	P	X Expression	Y Expression	X Range	Y Range
		1	re(v(5))	im(v(5))	1,-1	1,-1
		1	re(v(5))	sqrt(1 - (re(v(5))^2))	AutoAlways	AutoAlways
		1	re(v(5))	-sqrt(1 - (re(v(5))^2))	AutoAlways	AutoAlways

$a$  - расстояние от (0,0) до точки пересечения годографа отрезка [-1,0]

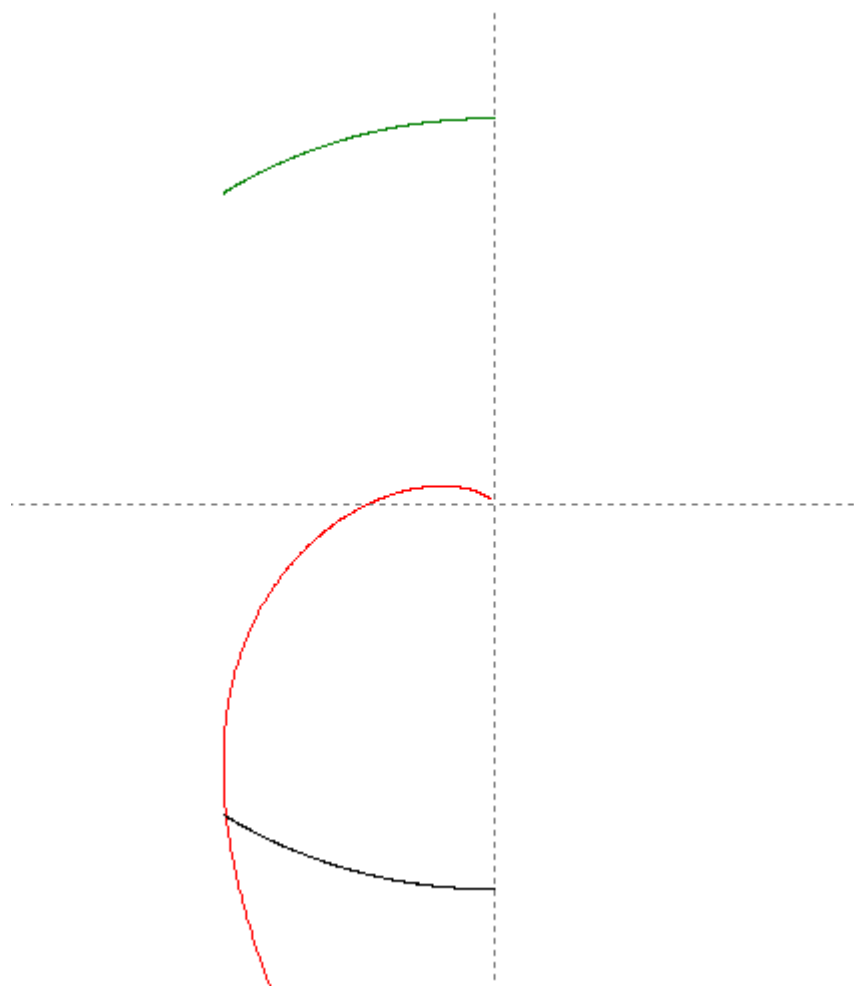
$K_a = 20 \lg(1/a)$

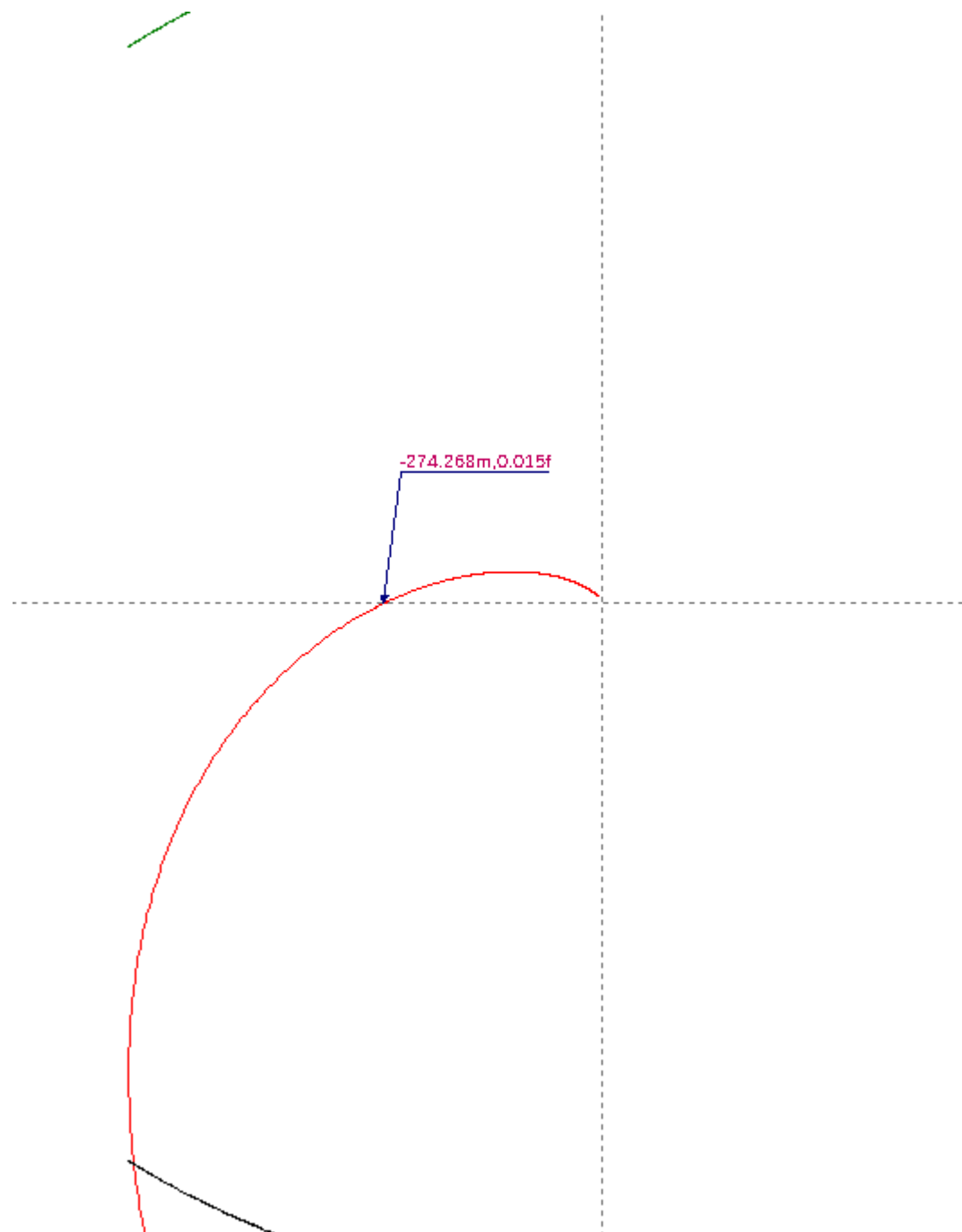
$\Delta\phi$  - угол между лучом  $(-\infty, 0)$  и отрезком  $(0, \text{точка пересечения годографа с ед окр})$

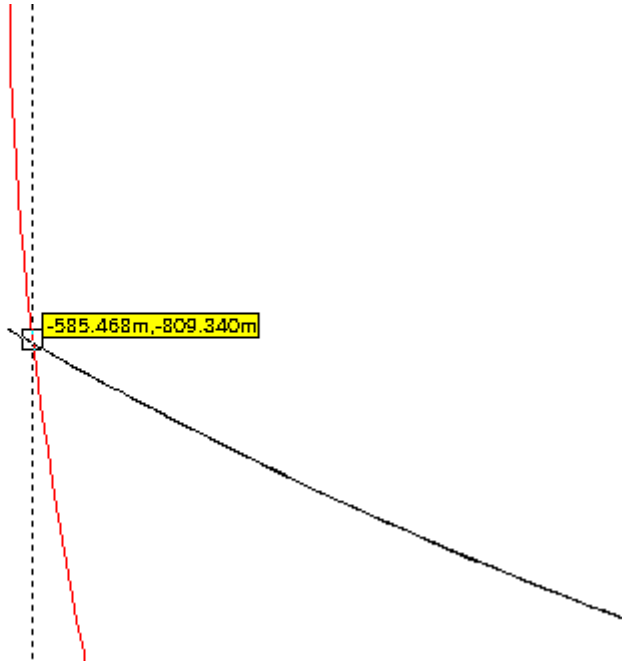
ПИ регулятор

T (задержка)	K	Ti	$\Delta\phi$	a	$K_a$
0	1.5	2.375	54.13	0.274	11.2
1.5	0.9	4	68.84	0.03	30.5
3	0.9	8.67	88.63	0.008	41.9

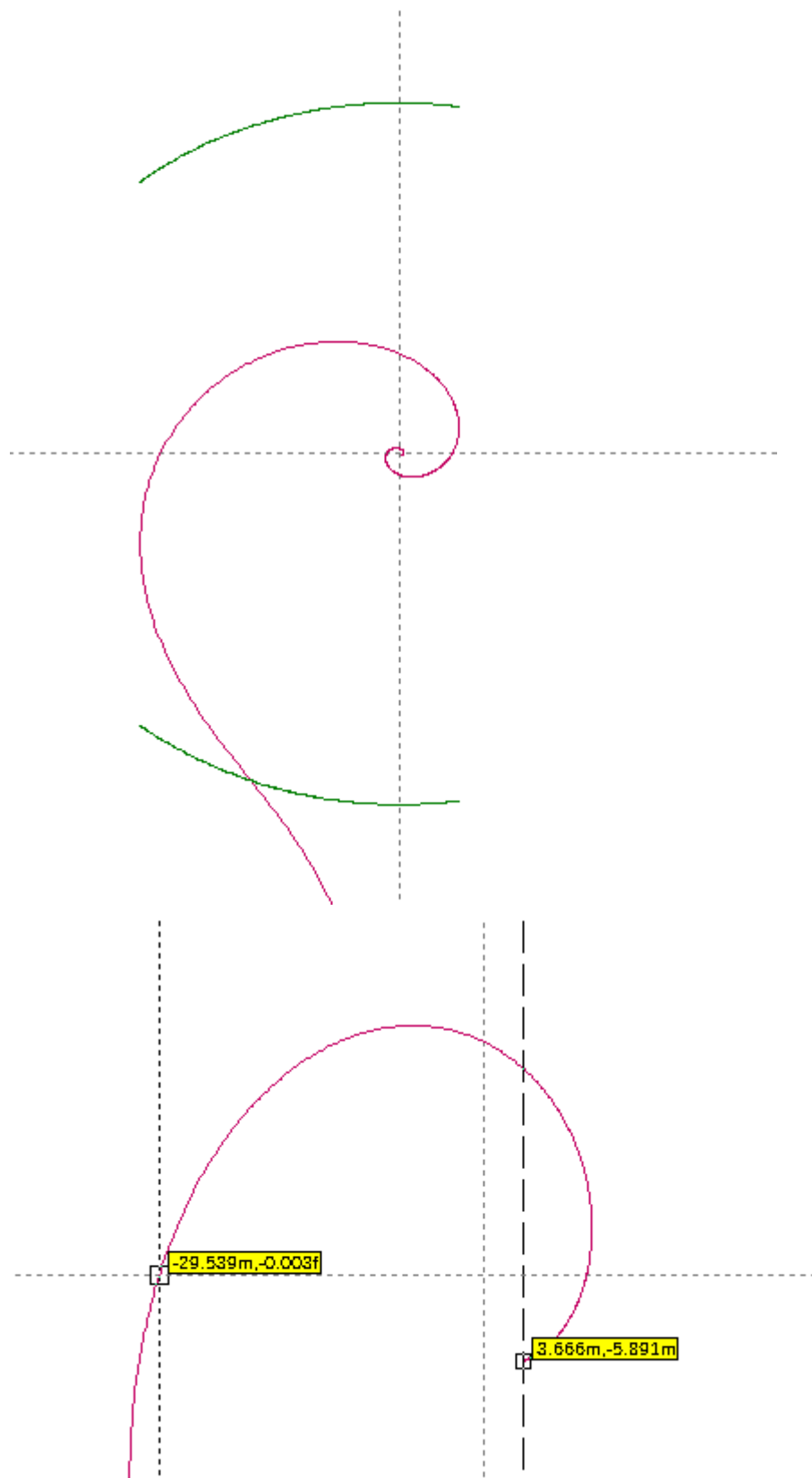
$T = 0$

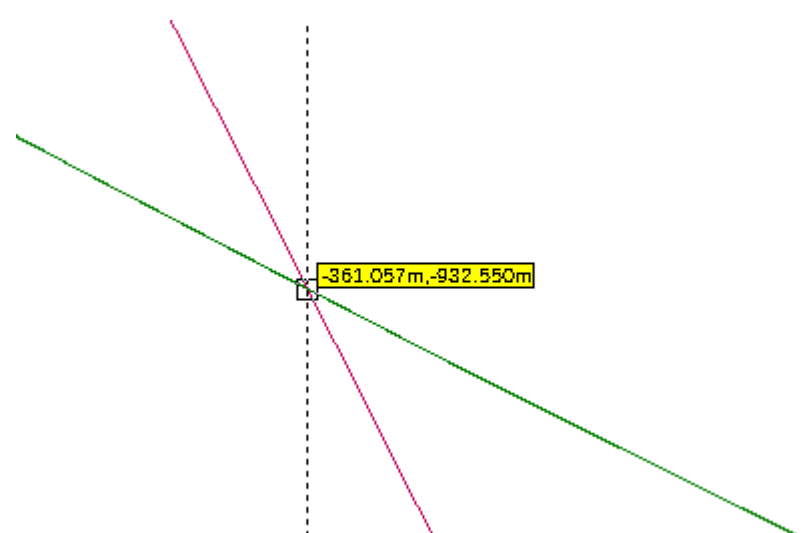




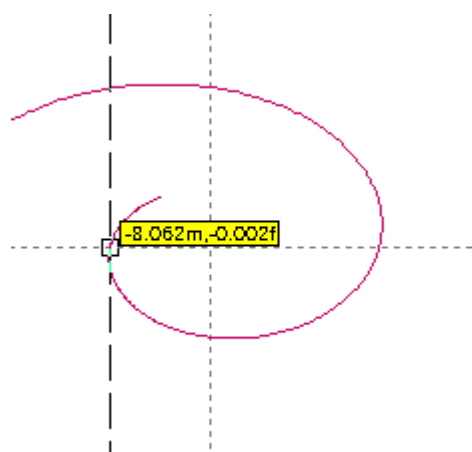
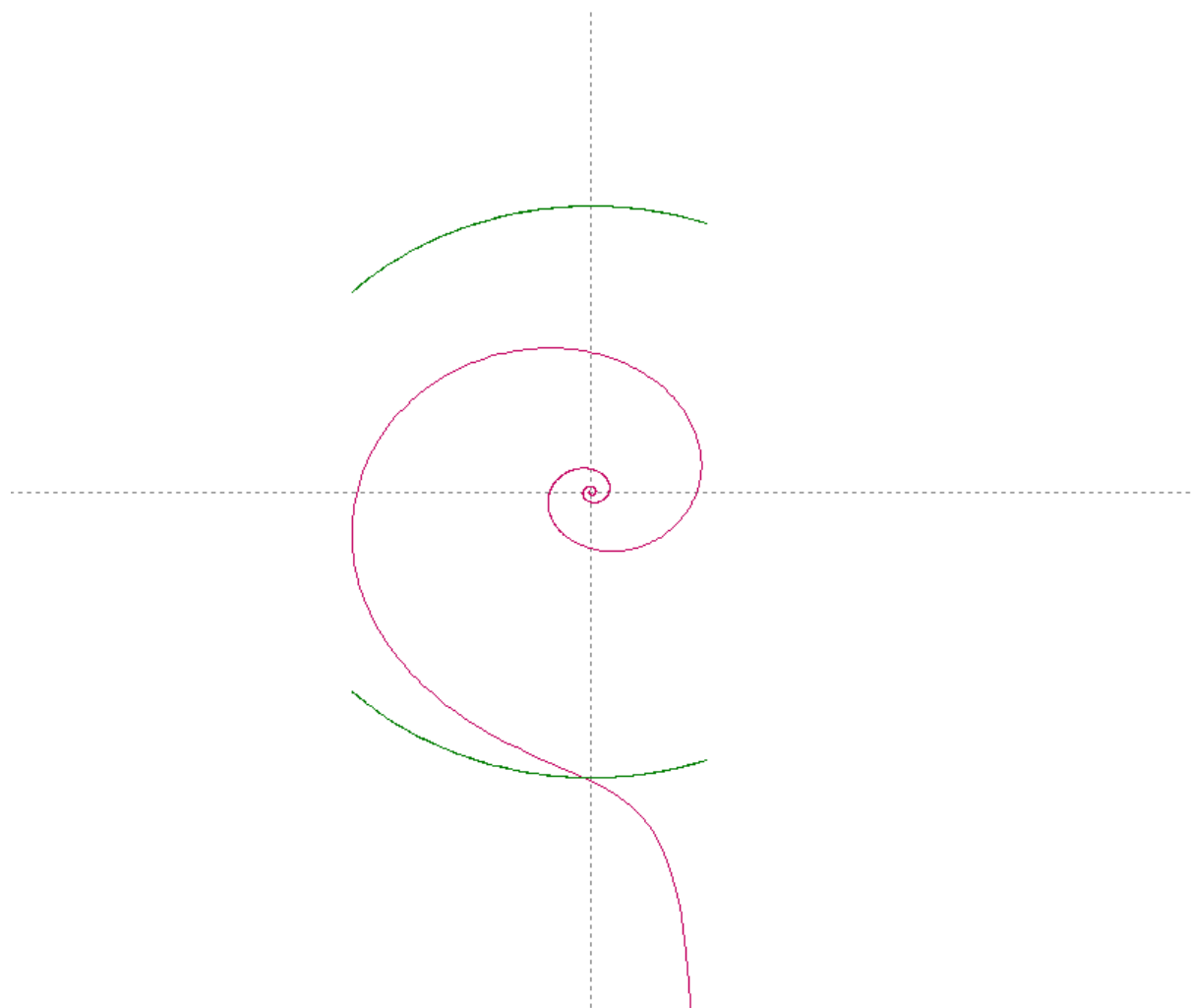


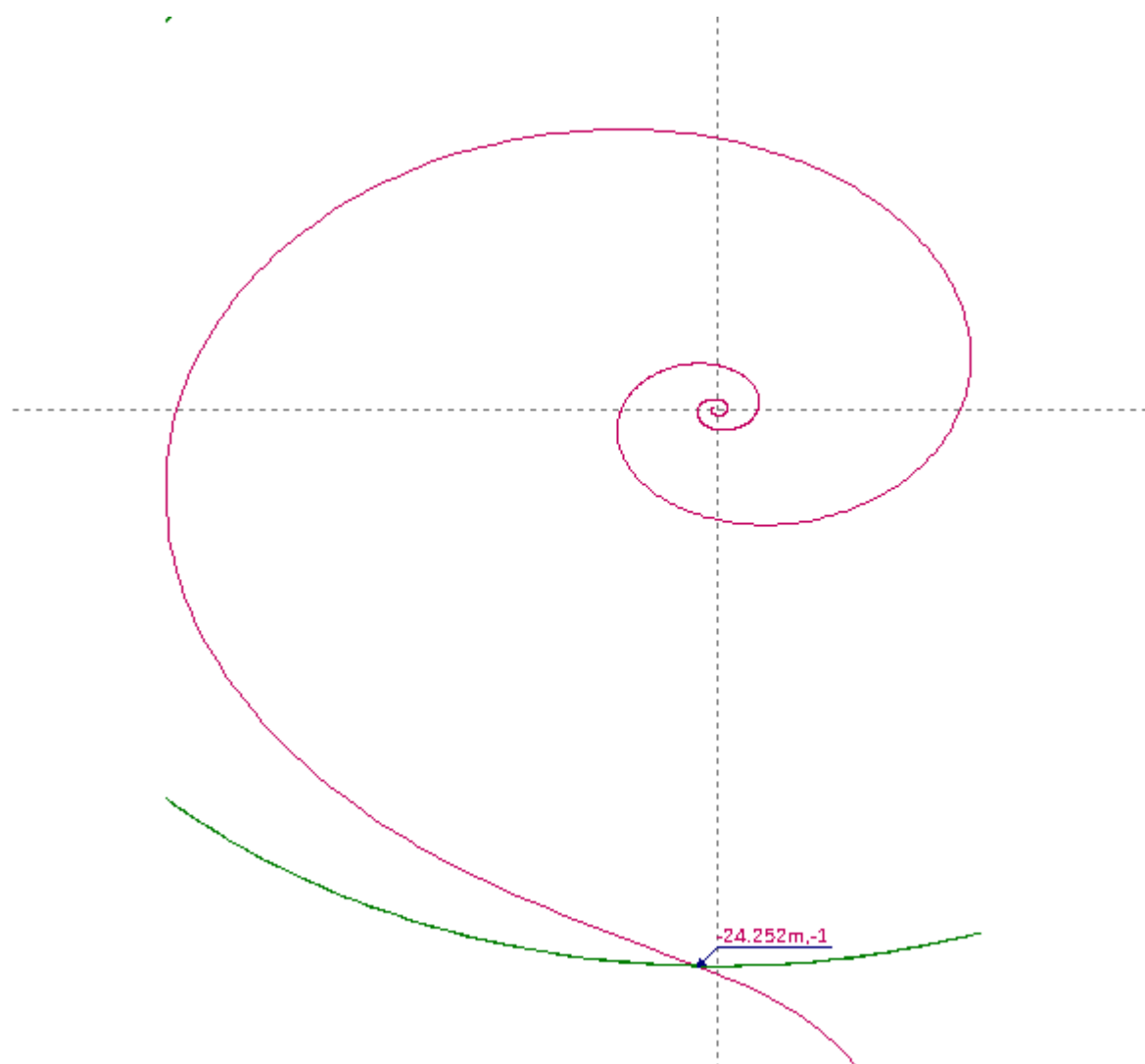
$T = 1.5$





$T = 3$



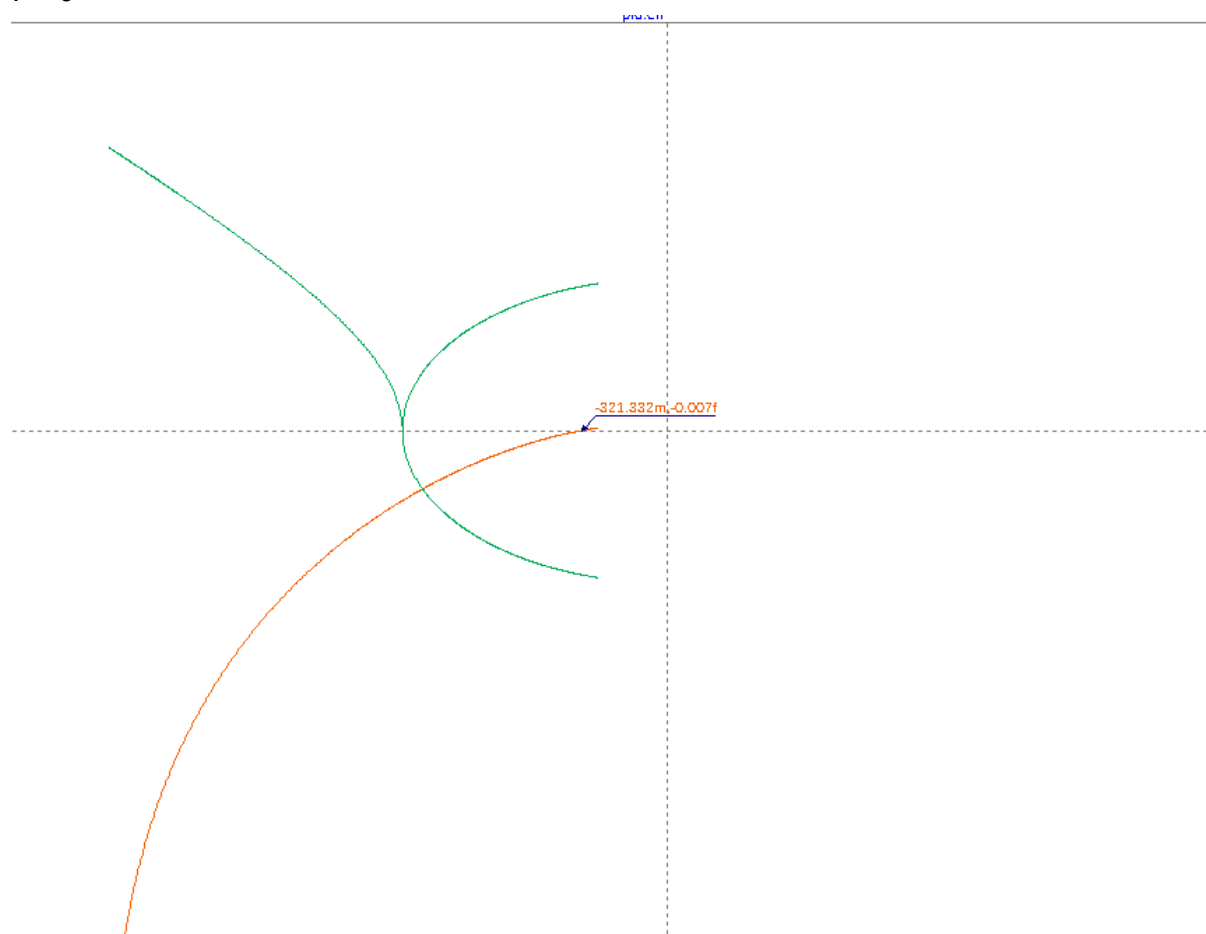


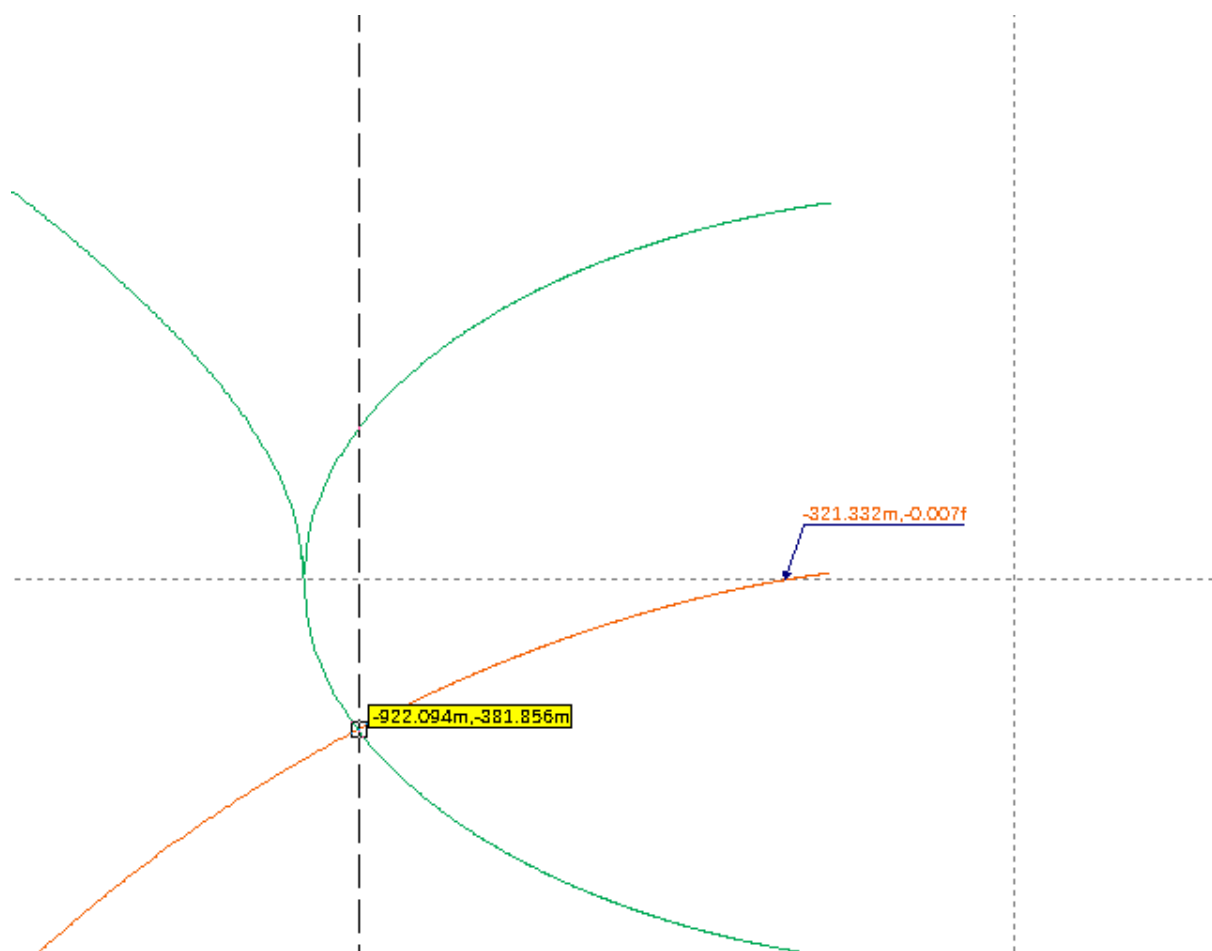


ПИД регулятор

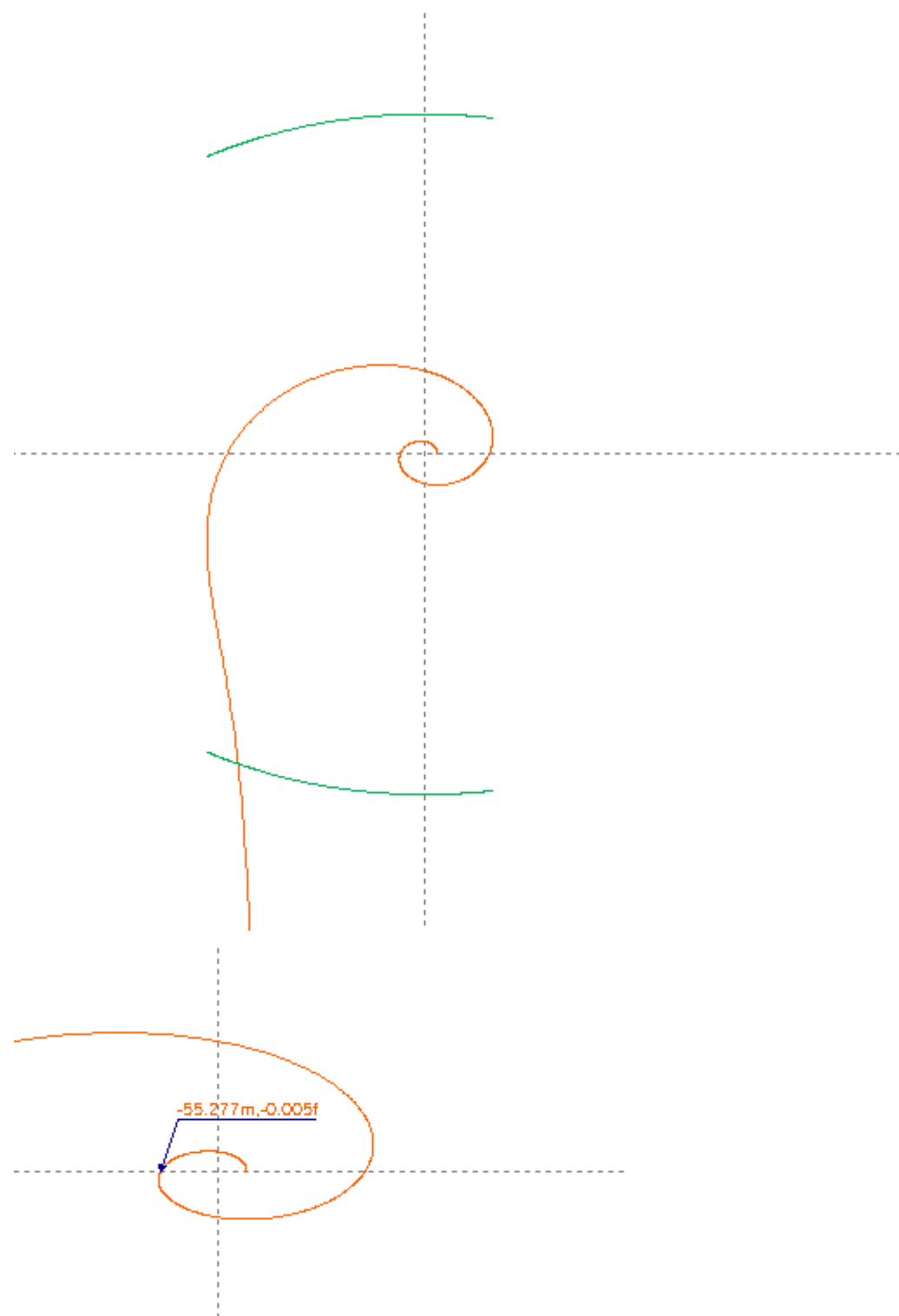
Т (задержка)	K	Ti	$\Delta\phi$	a	Ka
0	10	2	22.51	0.321	9.9
1.5	0.8	2.65	65.48	0.055	25.2
3	0.7	3.4425	63.38	0.028	31

$T = 0$





$T = 1.5$





$T = 3$

