

PCT Lab Report 1

Alexander Hiller (11850637)

August 8, 2018

Contents

1	Method	3
2	Results	3
2.1	RC Circuit	3
2.2	Loci of RC Circuit	3
2.3	RL Circuit	3
2.4	RLC Circuit	3
3	Discussion	3
4	Conclusion	3

List of Figures

1	The locus of V_r	4
2	The locus of V_c	4
3	The locus of I_p	5

1 Method

2 Results

2.1 RC Circuit

Table 1: Tabulated experimentally measured and calculated results. Note that ϕ_r denotes the phase angle of V_r and ϕ_c denotes the phase angle of V_c .

V_r	V_c	I_p	R	ϕ_r (radians)	ϕ_r (degrees)	ϕ_c (radians)	ϕ_c (degrees)
0	120.9	0.764	0.000	1.571	90.000	0.000	0.000
10	120.1	0.748	13.369	0.917	52.548	-0.654	-37.452
20	119.1	0.732	27.322	0.568	32.570	-1.002	-57.430
30	116.6	0.716	41.899	0.395	22.614	-1.176	-67.386
40	114.4	0.698	57.307	0.296	16.939	-1.275	-73.061
50	110.5	0.684	73.099	0.234	13.429	-1.336	-76.571
60	107.7	0.664	90.361	0.191	10.932	-1.380	-79.068
70	102.3	0.628	111.465	0.155	8.899	-1.415	-81.101
80	95.1	0.580	137.931	0.126	7.212	-1.445	-82.788
90	86.8	0.534	168.539	0.103	5.912	-1.468	-84.088
100	73.8	0.458	218.341	0.080	4.570	-1.491	-85.430
110	59.5	0.360	305.556	0.057	3.269	-1.514	-86.731

2.2 Loci of RC Circuit

2.3 RL Circuit

2.4 RLC Circuit

3 Discussion

4 Conclusion

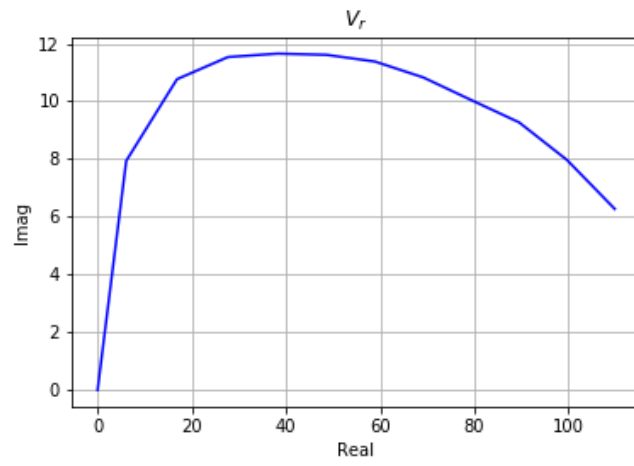


Figure 1: The locus of V_r

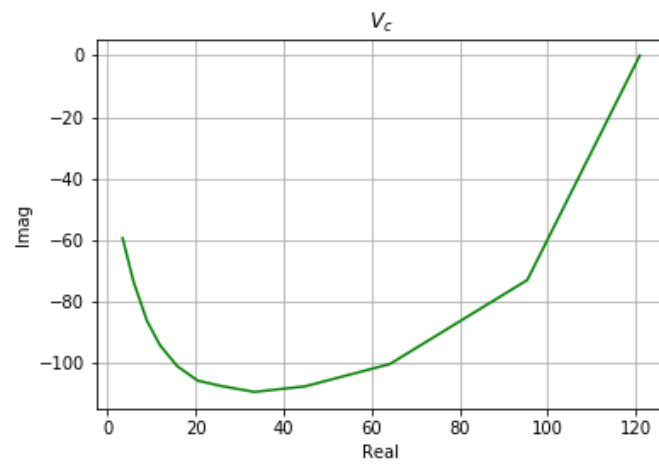


Figure 2: The locus of V_c

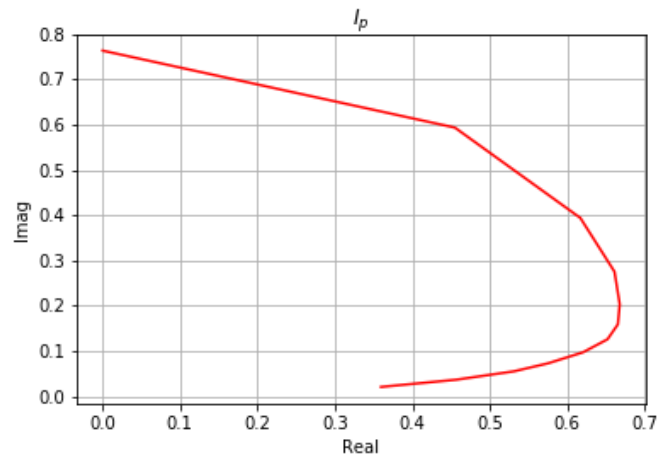


Figure 3: The locus of I_p