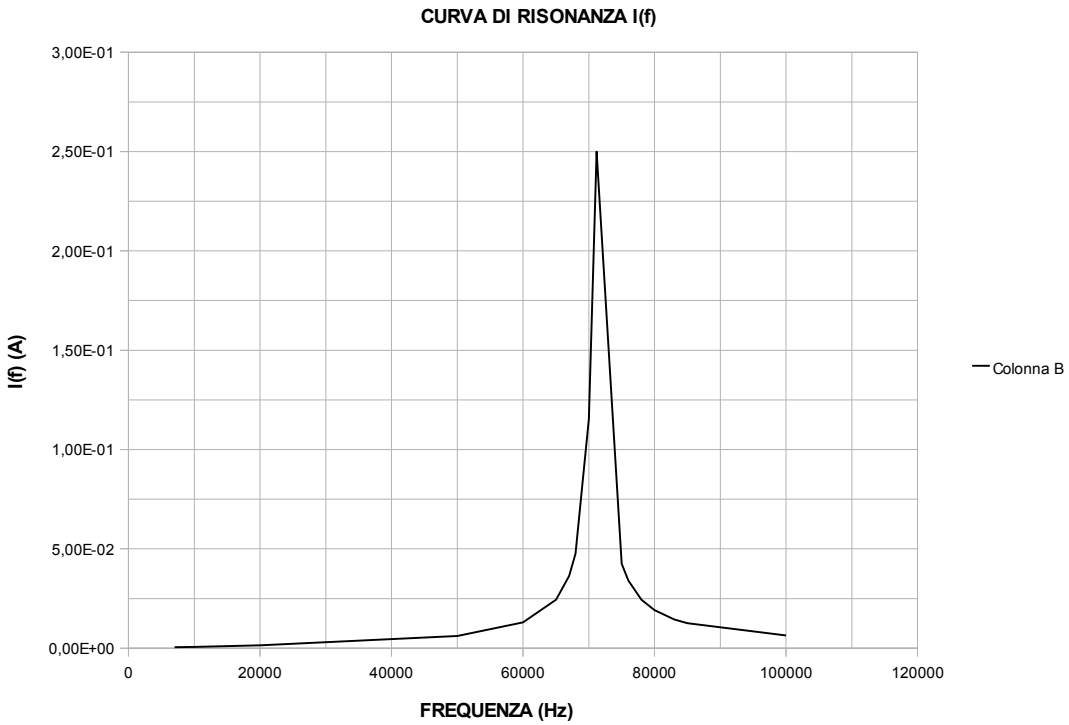
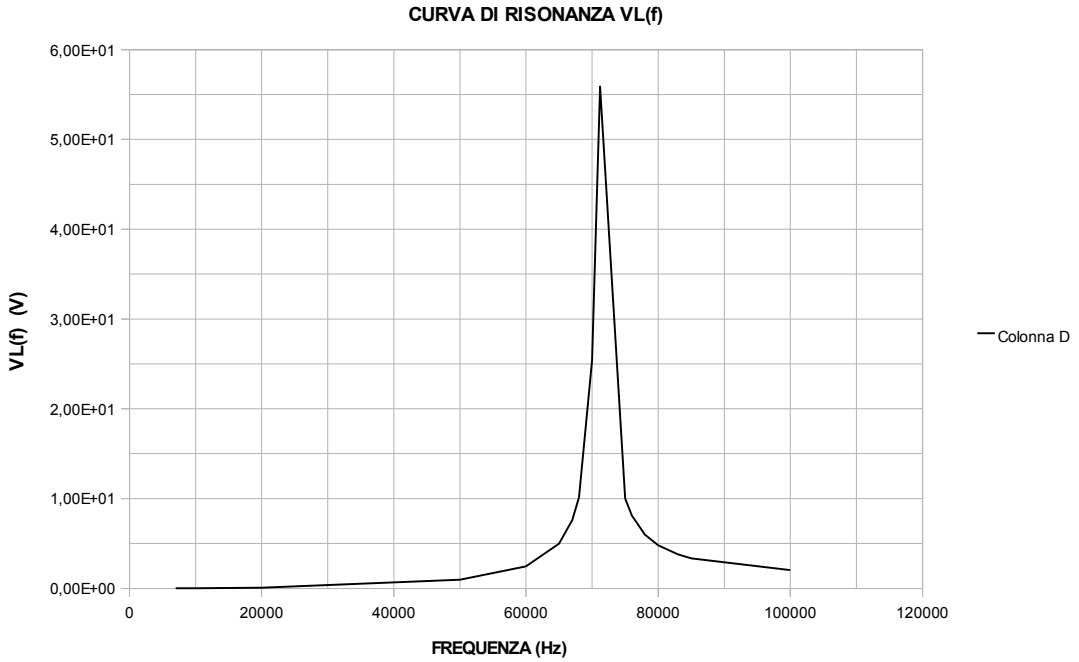
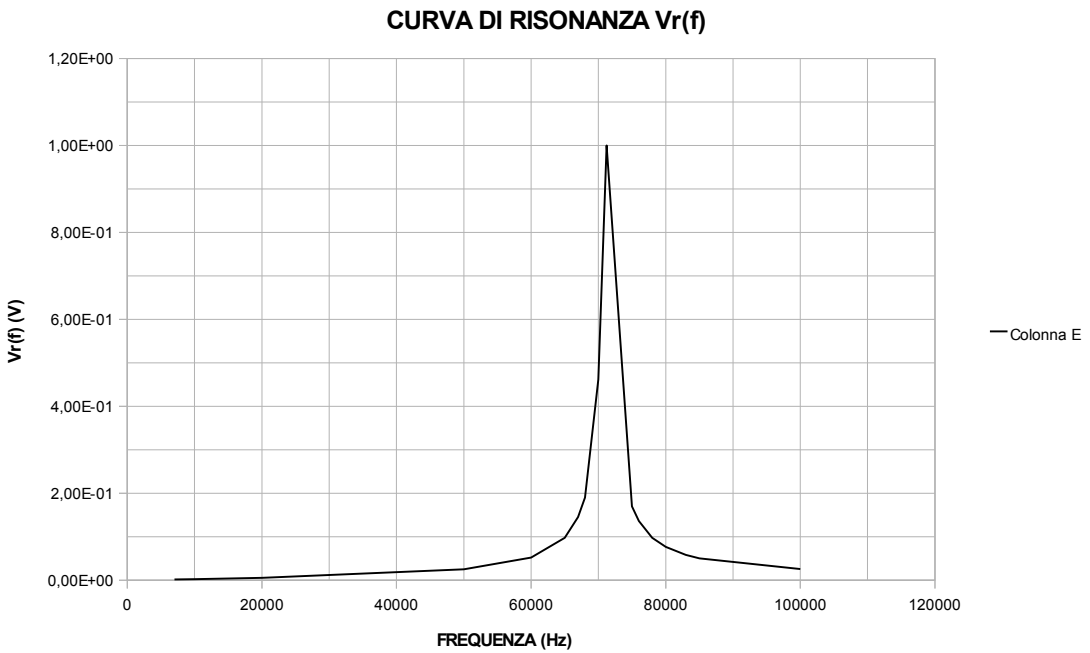
PROF. ANTONINO CUCINOTTA
I.T.I.S. "MAJORANA" - MILAZZO
RISONANZA IN UN CIRCUITO RLC- SERIE

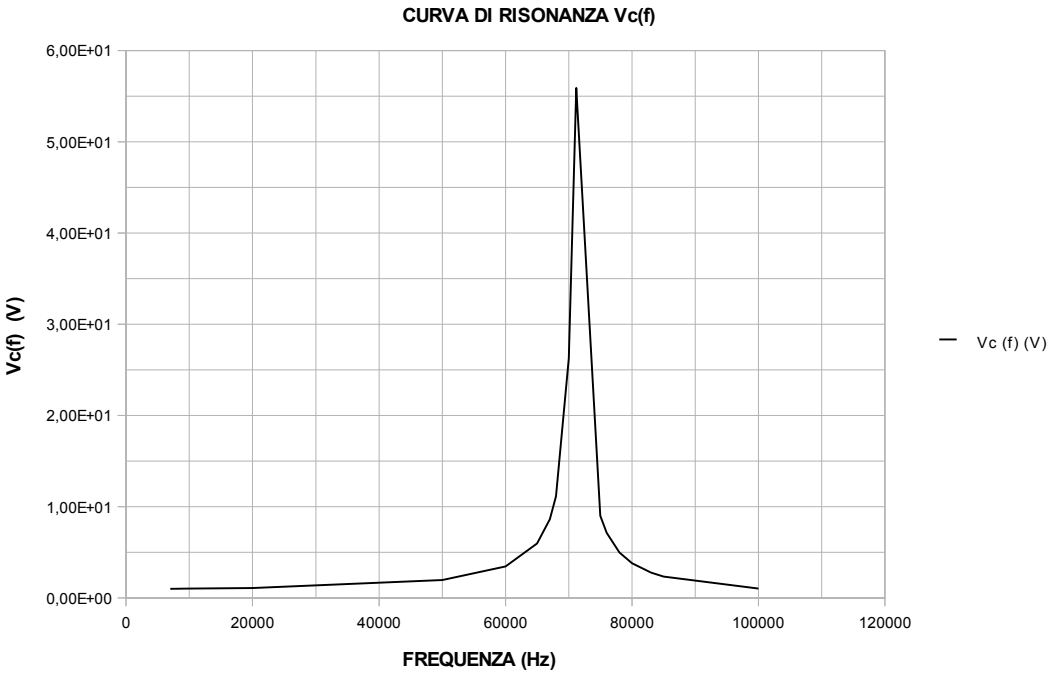
VALORE EFFICACE DELLA F.E.M. DEL GENERATORE	**E (V):**	1,000
RESISTENZA OHMICA	**R(Ω):**	4,00E+00
INDUTTANZA	**L (H):**	5,00E-04
CAPACITA'	**C (F):**	1,00E-08
FREQUENZA DI RISONANZA	**fo :**	7,12E+04
COEFFICIENTE DI SOVRATENSIONE	**Qo:**	55,902
LARGHEZZA DI BANDA A - 3 dB	**B (Hz):**	1273,885
IMPEDENZA MINIMA, PER f = fo	**Zmin (Ω):**	4,00E+00
VALORE EFFICACE DI I PER f = fo	**Imax (A):**	2,50E-01
VALORE EFFICACE DI Vc PER f = fo	**Vcmax (V):**	5,59E+01
VALORE EFFICACE DI V_L PER f = fo	**$V_L$max (V):**	5,59E+01
VALORE EFFICACE DI V_R PER f = fo	**$V_R$max (V):**	1,00E+00

f (Hz)	I (f) (A)	Vc (f) (V)	V_L(f) (V)	V_R (f) (V)	φ(f) (°)
100	6,28E-06	1,00E+00	1,97E-06	2,51E-05	-0,001
200	1,26E-05	1,00E+00	7,89E-06	5,02E-05	-0,003
500	3,14E-05	1,00E+00	4,93E-05	1,26E-04	-0,007
700	4,40E-05	1,00E+00	9,66E-05	1,76E-04	-0,010
1000	6,28E-05	1,00E+00	1,97E-04	2,51E-04	-0,014
2000	1,26E-04	1,00E+00	7,89E-04	5,03E-04	-0,029
5000	3,16E-04	1,00E+00	4,95E-03	1,26E-03	-0,072
7000	4,44E-04	1,01E+00	9,76E-03	1,78E-03	-0,102
10000	6,41E-04	1,02E+00	2,01E-02	2,56E-03	-0,147
20000	1,36E-03	1,09E+00	8,56E-02	5,45E-03	-0,313
50000	6,19E-03	1,97E+00	9,72E-01	2,48E-02	-1,420
60000	1,30E-02	3,44E+00	2,44E+00	5,19E-02	-2,975
65000	2,43E-02	5,96E+00	4,97E+00	9,74E-02	-5,591
67000	3,63E-02	8,62E+00	7,63E+00	1,45E-01	-8,344
68000	4,75E-02	1,11E+01	1,02E+01	1,90E-01	-10,968
70000	1,15E-01	2,63E+01	2,54E+01	4,62E-01	-27,527
71200	2,50E-01	5,59E+01	5,59E+01	1,00E+00	-88,932
75000	4,25E-02	9,02E+00	1,00E+01	1,70E-01	-170,207
76000	3,40E-02	7,13E+00	8,12E+00	1,36E-01	-172,175
78000	2,44E-02	4,98E+00	5,98E+00	9,76E-02	-174,394
80000	1,91E-02	3,81E+00	4,80E+00	7,65E-02	-175,612
83000	1,45E-02	2,79E+00	3,78E+00	5,81E-02	-176,669
85000	1,26E-02	2,35E+00	3,35E+00	5,02E-02	-177,121
100000	6,46E-03	1,03E+00	2,03E+00	2,58E-02	-178,519
130000	3,50E-03	4,29E-01	1,43E+00	1,40E-02	-179,198
150000	2,74E-03	2,91E-01	1,29E+00	1,10E-02	-179,372
200000	1,82E-03	1,45E-01	1,15E+00	7,29E-03	-179,582
500000	6,50E-04	2,07E-02	1,02E+00	2,60E-03	-179,851
700000	4,60E-04	1,05E-02	1,01E+00	1,84E-03	-179,895
1000000	3,20E-04	5,10E-03	1,01E+00	1,28E-03	-179,927


CURVA DI RISONANZA I(f)
3,00E-01
2,50E-01
2,00E-01
1,50E-01
1,00E-01
5,00E-02
0,00E+00
I(f) (A)
0
20000
40000
60000
80000
100000
120000
FREQUENZA (Hz)
Colonna B


CURVA DI RISONANZA VL(f)
6,00E+01
5,00E+01
4,00E+01
3,00E+01
2,00E+01
1,00E+01
0,00E+00
VL(f) (V)
0
20000
40000
60000
80000
100000
120000
FREQUENZA (Hz)
Colonna D


CURVA DI RISONANZA Vr(f)
1,20E+00
1,00E+00
8,00E-01
6,00E-01
4,00E-01
2,00E-01
0,00E+00
Vr(f) (V)
0
20000
40000
60000
80000
100000
120000
FREQUENZA (Hz)
Colonna E


CURVA DI RISONANZA Vc(f)
6,00E+01
5,00E+01
4,00E+01
3,00E+01
2,00E+01
1,00E+01
0,00E+00
Vc(f) (V)
0
20000
40000
60000
80000
100000
120000
FREQUENZA (Hz)
Vc (f) (V)

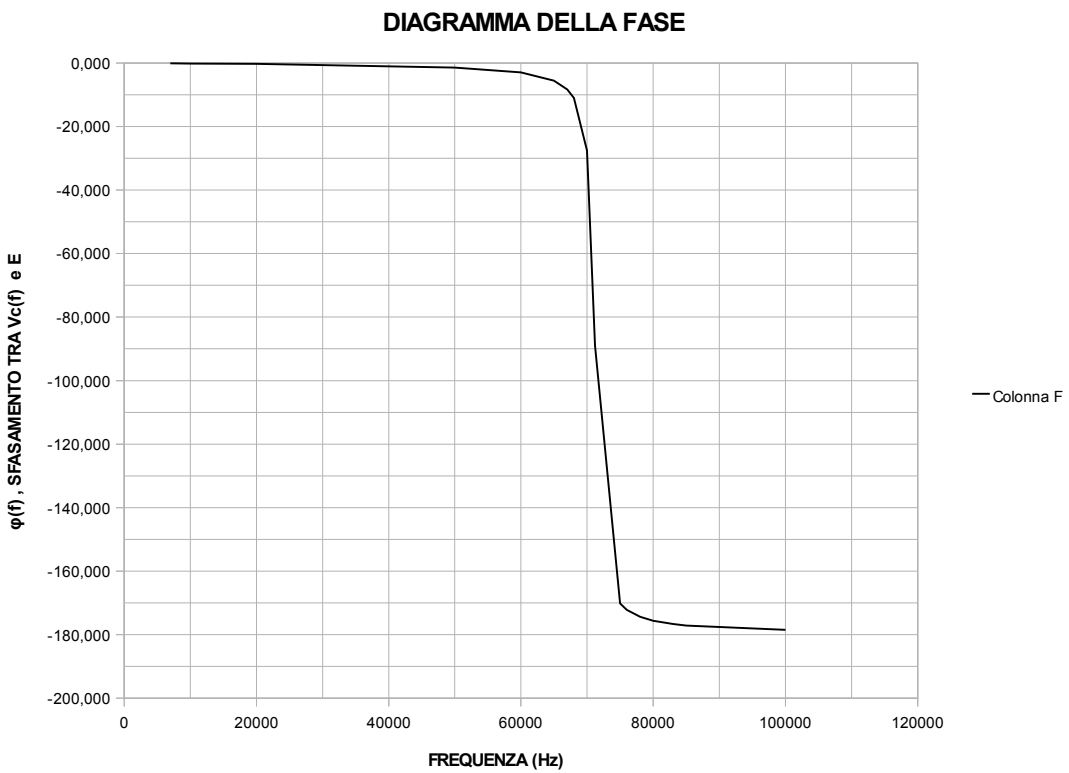


DIAGRAMMA DELLA FASE
0,000
-20,000
-40,000
-60,000
-80,000
-100,000
-120,000
-140,000
-160,000
-180,000
-200,000
φ(f) , SFASAMENTO TRA Vc(f) e E
0
20000
40000
60000
80000
100000
120000
FREQUENZA (Hz)
Colonna F

FUNZIONE DI TRASFERIMENTO: $F(j\omega) = Vc/E = 1/[RCs + LC\ s^2 + 1]$

$F(j\omega) = Vc/E = 1/[j\omega RC - LC\ \omega^2 + 1]$

MODULO DI F(jω): $|F(j\omega)| = Vc/E = 1/SQRT[\ (1 - LC\omega^2\ )^2 + (\omega RC)^2]$

FASE DI F(jω): $\varphi\ (f) = - \arctan[6{,}28\ f\ RC/(1 - LC*(6{,}28f)^2)\ ]$

$\varphi(\omega) = - \arctan[\ \omega RC/(1 - LC\omega^2\ )]$