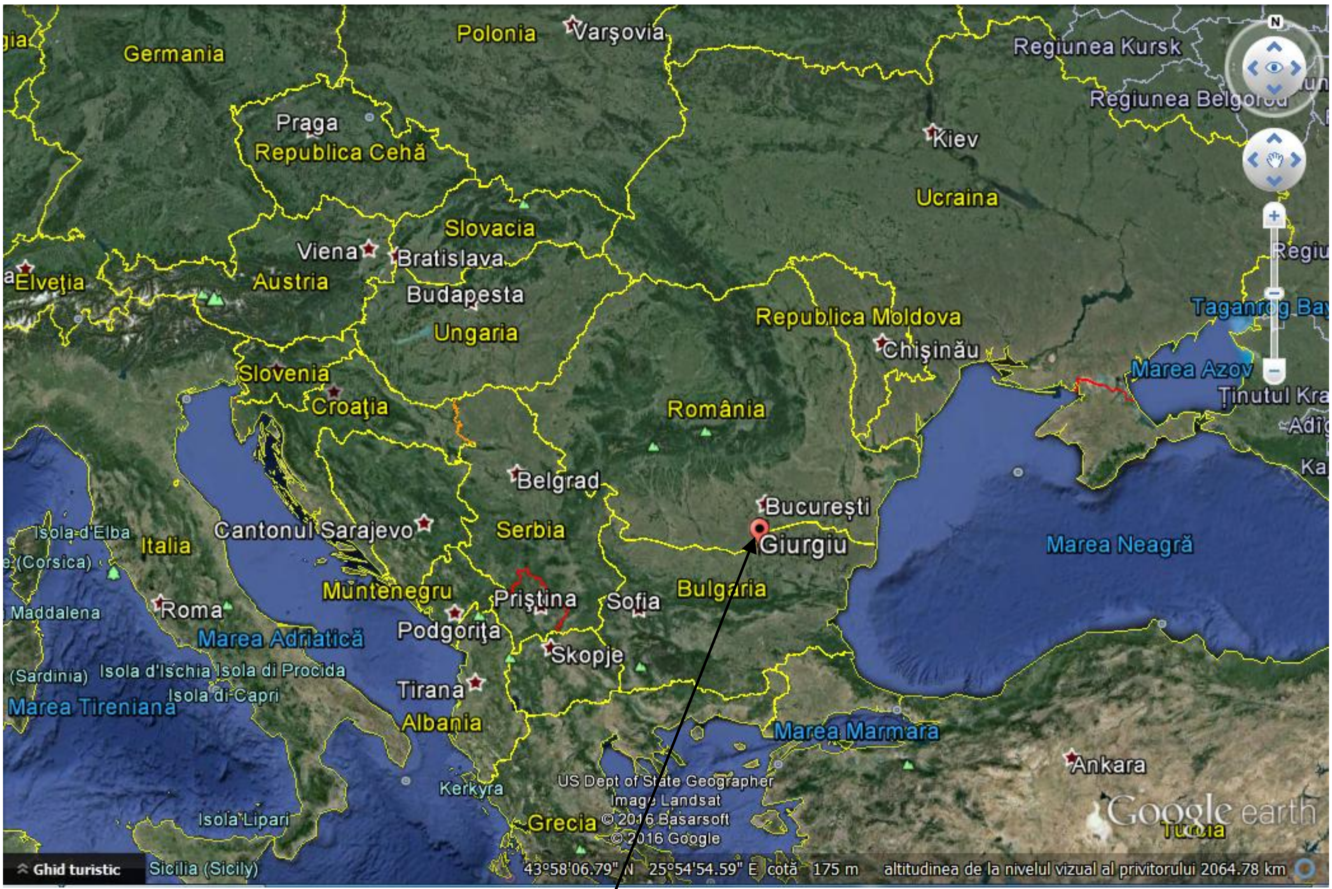
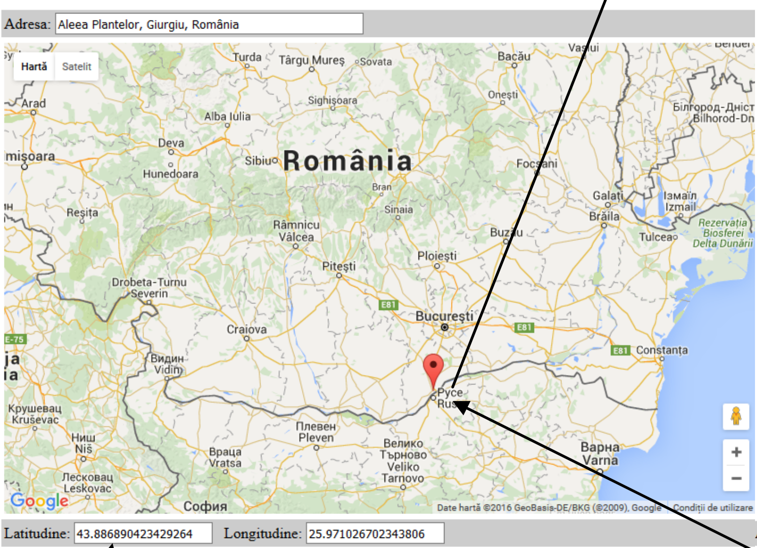
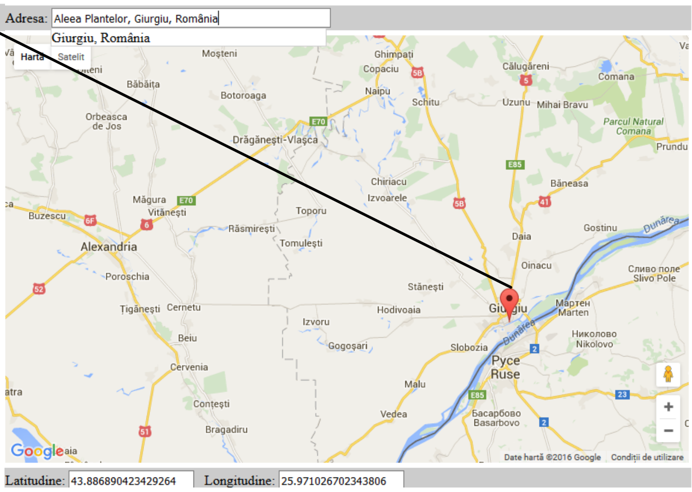
The results of measurement gravity acceleration







$g = 9,80439\ m/s^2$

We used two different lengths of wire (L_1= 1,08m, and L_2= 1,51m) and performed the experiment for the same number of oscillations. The results are relatively close to the standard value for the latitude where we are ($43^0 53' 12.5''$ the value of g =9,80439 m/s^2)

I.

L= 1,08 m

Nr.crt	N	Δt(s)	T(s)	g (m/s^2)	$\bar{g}$(m/s^2)	Δg =$\lvert g - \bar{g} \rvert$(m/s^2)	$\overline{\Delta g}$ (m/s^2)
1	5	10,33	2,066	9,98	9,774	0,206	0,122
2	5	10,35	2,07	9,94		0,166	
3	5	10,55	2,11	9,56		0,214	
4	5	10,49	2,098	9,75		0,024	
5	5	10,53	2,106	9,60		0,174	
6	5	10,40	2,08	9,85		0,076	
7	5	10,42	2,084	9,80		0,026	
8	5	10,46	2,092	9,73		0,044	
9	5	10,52	2,104	9,62		0,0154	
10	5	10,36	2,072	9,91		0,0136	

g =(9,774 ± 0,122) m/s^2

L= 1,08 m

Nr.crt	N	Δt(s)	T(s)	g (m/s^2)	$\bar{g}$(m/s^2)	Δg =$\lvert g - \bar{g} \rvert$(m/s^2)	$\overline{\Delta g}$ (m/s^2)
1	10	20,96	2,08	9,85	9,78	0,07	0,17
2	10	20,95	2,095	9,71		0,07	
3	10	20,36	2,036	10,26		0,48	
4	10	20,93	2,093	9,71		0,07	
5	10	20,72	2,072	9,91		0,13	
6	10	21,35	2,135	9,35		0,43	
7	10	20,80	2,080	9,85		0,07	
8	10	21,20	2,120	9,47		0,31	
9	10	20,84	2,084	**9,80**		0,02	
10	10	20,74	2,074	9,89		0,11	

g =(9,78 ± 0,17) m/s^2

II.

L= 1,51m

Nr.crt	N	Δt(s)	T(s)	g (m/s^2)	$\bar{g}$(m/s^2)	Δg =$\lvert g - \bar{g}\rvert$(m/s^2)	$\overline{\Delta g}$ (m/s^2)
1	5	12,01	2,402	10,31	9,82	0,49	0,138
2	5	12,49	2,498	9,53		0,29	
3	5	12,26	2,452	9,89		0,07	
4	5	12,3	2,45	9,91		0,09	
5	5	12,32	2,464	9,79		0,03	
6	5	12,27	2,454	9,87		0,05	
7	5	12,36	2,472	9,73		0,09	
8	5	12,41	2,482	9,65		0,17	
9	5	12,34	2,468	**9,76**		0,06	
10	5	12,33	2,466	9,78		0,04	

g =(9,82 $\pm$ 0,138) m/s^2

Nr.crt	N	Δt(s)	T(s)	g (m/s^2)	$\bar{g}$(m/s^2)	Δg =$\lvert g - \bar{g}\rvert$(m/s^2)	$\overline{\Delta g}$ (m/s^2)
1	10	24,36	2,436	10,03	9,82	0,21	0,123
2	10	24,67	2,467	9,78		0,04	
3	10	24,58	2,458	9,68		0,14	
4	10	24,48	2,448	9,93		0,11	
5	10	25,13	2,513	9,42		0.4	
6	10	24,55	2,455	9,88		0,06	
7	10	24,58	2,458	9,85		0,03	
8	10	24,52	2,452	9,88		0,06	
9	10	24,45	2,445	9,96		0,14	
10	10	24,56	2,456	9,86		0,04	

g =(9,82 $\pm$ 0,123) m/s^2

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