Experiment Regarding Magnetic Fields with Gravity

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Research Article

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Abstract

We observed the Earth's gravity to produce electricity in the magnetic sea. The gravity generator (GG) generated currents and voltages on the mesoscopic scale when we connected it in the vacuum. Gravity interacts to generate electricity in the Earth's direction or the opposite direction by the repulsive magnetic force. The ground-based device simulates the potential energy (voltages) between gravity and magnetic seas. The GG increased simulations of gravity quantum effects using different physical set-ups. A trapped gravity was set to behave as free relativistic quantum particles or fluids, which made it possible to measure the particle position as a function of time and study the magnetic sea for different initial superpositions of positive- negative-gravity spinor state. It might explain the relativistic quantum equations, antigravity, and the heating mechanism of the Sun.

Background

Detection of astrophysical gravitational waves with laser interferometers such as LIGO can explore relatively low-frequency ranges[1]. Electromagnetic detectors of gravitational waves could explore a higher frequency range, typically from kHz to 100GHz when using radio-frequencies or from 100GHz to THz[2]. It is tough to make electromagnetic detectors of gravitational waves[3].

It would be better to make electromagnetic detectors of gravitational collisions within a more prosperous Earth's gravitational field in the magnetic seas. Gravitation has been regarded as week interactions compared to electromagnetism or nuclear forces. However, if we can use the Earth's gravity for experiments, we face a different situation. It is because the Earth's gravity is a huge force, as seen when we fall. We decided to use Newton's third law (Lex Tertia): the law of conservation of momentum[4]. The Earth's gravitational collisions does not require any new physics nor technology[5]. We tried to demonstrate that gravity induces magnetic seas by monitoring the electricity and time in the gravity generator (GG).

Results

We connected the GG to a TDS 2014 four-channel digital storage oscilloscope (100 MHz, 1 GS/s). The voltage was measured during experiments in order while the generator was rotating through the monitor. Gravity only generates electric potentials [6].

The data were

6.20→4.80→11.0→10.6→10.6→11.0→9.00→11.0→5.00→6.60→10.4→8.40→11.6→10.2
→10.6→8.60→6.80→11.2→8.60→9.20→9.00→11.2→10.4→8.40→7.60→9.00→10.6→7.
00→6.80→10.2→12.6→10.8→9.40→10.2→9.20→10.0→7.00→11.2→11.0→8.40→8.60
→8.80→7.80→11.4→9.20→7.20→9.00→7.80→6.80→8.80→9.60→5.60→8.80→12.0→9.
40→7.60→5.60→11.0→8.60→11.6→12.2→11.6→11.2→9.00→10.2→8.20→9.40→7.40
→11.4→9.60→11.4→6.60→7.40→9.40→9.80→10.6→9.20→8.20→11.8→9.20→6.80→1
0.0→9.00→8.40→8.00→9.00→9.60→10.8→8.40→8.80→9.20→12.0→9.80→12.6→8.40
→9.20→8.20→12.8→9.20→8.20→10.6→9.60→8.20→6.40→8.40→9.40→10.8→14.8→1
0.4→12.0→11.4→9.00→12.2→5.80→11.2→11.0→12.6→13.0→9.20→7.80→11.6→11.0
→8.00→13.8→5.20→6.60→10.2→9.40→11.0→9.80→10.6→9.60→11.0→10.8→11.2→8.
00→8.40→10.2→10.0→6.20→7.60→9.60→7.60→9.20→8.20→9.20→9.60→7.60→9.60
→8.00→9.60→10.0→6.60→12.0→10.8→8.60→12.4→9.80→5.20→8.60→9.80→11.8→1
0.0→5.00→6.60→6.20→4.00→3.00→3.20→3.80→3.20→3.40→3.80→4.00→3.40→4.40
→3.20→4.00→7.60→7.60→11.6→10.6→14.6→10.4→12.2→11.4→9.80→14.4→13.6→1
2.6→8.80→10.2→7.40→13.6→11.8→11.0→13.4→10.0→8.40→8.60→9.20→10.4→9.60
→7.80→7.20→10.6→12.4→8.80→9.00→6.80→5.40→10.4→5.60→8.00→9.00→8.80→1
0.2→7.00→10.2→9.60→10.8→8.80→6.00→10.2→8.80→10.4→8.80→8.20→11.6→7.80
→8.20→8.80→10.4→7.60→8.60→9.00→10.8→9.60 (V) while the generator was rotati
ng.

Furthermore, the voltage was measured during experiments in order while the generator was stationary through the monitor. Gravity only generates electric potentials well[7].

The data were

3.60→3.20→3.40→3.20→4.00→3.60→3.40→3.80→4.00→5.00→3.40→2.80→3.80

→4.00→3.40→4.00→3.60→3.40→4.00→3.80→3.40→4.20→3.40→3.80→3.40→3.20→3.40→4.00

→3.20→4.20→3.40→3.60→3.00→3.20→3.80→4.20→3.40→3.60→3.40→4.00→3.40→4.00→3.80

→3.00→3.80→4.00→3.00→3.20→3.80→3.20→3.40→3.80→4.00→3.40→4.40→3.20→4.00→7.60

→4.60→3.60→4.00→3.80 (V) while the generator was stationary.

The GG was connected to measure the amount of electricity. When it rotated faster, it produced more electricity. We measured electricity three times (A, B, C) while the GG rotated (Table 1) and three times (D, E, F) when the GG was stationary.

Many theories combine quantum mechanics with Einstein's theory of gravity, which predicts space and time's frothiness. Nevertheless, Earth's gravity was the sole factor influencing this experiment's magnetic fields in a firmly fixed Hieut space (H: Hieut) on Earth. We found the data of voltage (0) and current (0) in

the equilibrium state during experiment F4 6380 (6379) (Data S1 2019.10.10. Experiments with the gravity generator in the air: F4.csv). Earth's gravitational field at a location is a fixed vector pointing downwards to the Earth's centre. Its average magnitude is 9.8 m/s at its surface [8]. There was a balanced state in the direction under gravity and the opposite direction under the repulsive magnetic force (Fig. 1).

The electricity generated in a stationary state was examined more precisely than in a rotated state: Experiments D1, E1, and F1. The data of experiments D1, E1, and F1 from the stationary GG were analyzed in rows 312 to 412 to remove the effects of weight, the time interval was 0.1 seconds, and there were 100 measured points[9]. The x-axis represents time, and the y-axis denotes voltage and current in a radial chart. Gravity and magnetic force were in balanced states while the GG stopped, but in experiment D1, the voltage ranged from -11.1 to 13.0 microvolts, and the current ranged from -1.90 to 29.0 microamps. In experiment E1, the voltage ranged from -11.9 to 9.60 microvolts, and the current ranged from -2.00 to 2.40 microamps. In experiment F1, the voltage ranged from -8.10 to 14.1 microvolts, and the current ranged from -3.30 to 3.00 microamps (Fig. 2).

We measured the amounts of electricity generated in the vacuum chamber again. When preparing the GG for a vacuum experiment, we measured the values -578 picoamps ~ +595 picoamps in the air. The GG generated the voltage from -16.1 microvolts to +18.3 microvolts in the air (Data S2 2020.06.18. Vacuum chamber & gravity generator in the air: equipment1.csv). However, the GG generated voltage from +42.8 microvolts to +794 microvolts in the vacuum experiment (Data S3 2020.06.18. Experiments with the vacuum chamber's gravity generator: vaccum_0.0001mbar4.csv). The current values all indicated negative (-) in the vacuum experiment (Table 2).

To compare the GG's electricity, three measurements were made first in air and ten times at 0.0001 mbar. We compared from point 2897 to 2997 of 100,000 points for 10 seconds. The GG has a large amount of (-) current generated in a vacuum (Fig. 3). The GG has a large (+) voltage generated in a vacuum (Fig. 4).

It means that the GG generated electric currents in the Earth direction. Earth pulls the sea of magnetic field just as the moon pulls the oceans. By substituting the measured data into various quantum mechanical equations, we will predict valid values and verify correct equations. If the GG generates current (-) and voltage (+) in vacuum states, this signifies the gravitomagnetic potentials induced by fluids or particles within the magnetic sea.

Discussion

On the Relationship between Gravity and Electricity

The GG produced a certain amount of electricity in the stationary state. The current was produced in the downward direction when the bearing cover was pressed. Furthermore, electricity was also produced upward when the bearing cover jumped near the magnetic field. Electricity was generated when dumbbells 1 and 2 were placed on the GG rotating[10] or stationary[11].

There have been several studies between electromagnetic and gravitomagnetic permittivity and permeability[12-14]. If gravity is present in the magnetic seas, gravity can induce the magnetic seas.

Time to the Voltage in the magnetic seas

We measured the currents in order from 1 to 10000 and summed them all. The changes in the magnitude of the current were observed as the barometric pressure decreased.

The 4th measurement, measured for 10 seconds in the vacuum chamber experiment, was selected for data analysis: the data were analyzed from point 4000 to point 4999, with this interval corresponding to one second. The x-axis represented time, and the y-axis defined voltage. Then, the x-axis represented voltage, and the y-axis designated time. The data were reconstructed with the voltage on the x-axis and the time on the y-axis. There were 107 cases where the voltage had two times and 16 cases where voltage had three times, and 1 case where voltage had four times. We could find the same voltage but at different times for one second (Fig. 5).

Voltage is formed among the nucleus and the electron clouds because their distances are not relatively long. The differences in time indicate the differences in voltage. The D1, E1 and F1 voltage-time graphs were rearranged in order of size based on the obtained voltages. It was not until 1989 that microampere measurements were possible. The relationships between time and voltage might explain the time-dependent or independent equations. Ohm's law means that the current flowing by the potential difference (voltage) appearing between two points of a conductor obeys a specific law. Ohm's law is microscopically the same as if an object moves at a speed of v for the magnetic field B; this equation has a relationship with the Lorentz force that there is a drag proportional to the speed of the charge carrier[15,16].

[Ohm's law is microscopical]

$$\mathbf{J} = \sigma \mathbf{E}, \quad \mathbf{J} = \sigma \cdot (\mathbf{E} + \mathbf{v} \times \mathbf{B}) \qquad (1)$$

(J is the current density, σ is the electrical conductivity (maybe a tensor in anisotropic materials), and E is the electric field)

However, electricity cannot be generated according to Maxwell's equation when the GG is stationary in the equilibrium state.

[Maxwell's equation]

$$\frac{\partial Bx}{\partial x} + \frac{\partial By}{\partial y} + \frac{\partial Bz}{\partial z} = 0, \quad \varepsilon^{\mu\nu\kappa\lambda}\partial_\nu F_{\kappa\lambda} = 0 \qquad (2)$$

Suppose the currents and voltages were generated at the equilibrium state. In that case, there is no other way to explain this phenomenon other than describing it as the generation of electricity by dividing particles according to the Weinberg-Witten theorem[17].

We can express the magnetic-electric field through its respective gravitational analogues using the proportionality coefficient k. This coefficient k depends on the ratio of mass and charge. Although the last coefficient is minimal, it represents the ratio is between the electromagnetic and gravitomagnetic permittivity and permeability[18].

(Coupled Maxwell-Einstein equations in a weak field approximation) [18]

$$rot\,\vec{g} = -\kappa \frac{\partial \vec{B}}{\partial t}$$
$$rot\,\vec{B}_g = -\frac{m}{e}\mu_g \rho \vec{v} - \kappa \frac{1}{c^2}\frac{\partial \vec{E}}{\partial t} \quad (3)$$

We found that every electromagnetic field is coupled to a gravitoelectric and gravitomagnetic field[18].

The Dirac equation, which is satisfied when a particle with a stationary mass of m moves freely without being influenced by the outside environment, is expressed as follows [19,20].

$$i\hbar \sum_{\mu=0}^{3} \gamma^{\mu} \frac{\partial}{\partial x^{\mu}} \psi - mc\psi = 0. \quad (4)$$

It provides a natural description of the electron spin and predicts the existence of antimatter[21]. The Dirac equation as relativistic quantum mechanics is considered the natural transition to quantum field theory and predicts some peculiar effects, such as Klein's paradox[22] or 'Zitterbewegung', an unexpected quivering motion of a free relativistic quantum particle[23].

Dirac Sea is a state filled with infinitely many particles in the negative energy state. These are all virtual particles, but empty spaces appear as anti-particles when they get enough energy and become fundamental particles. In such a Dirac sea, positrons could be predicted for electrons[21]. There have been increased simulations of relativistic quantum effects using different physical set-ups. A single trapped ion was set to behave as a free relativistic quantum particle, which made it possible to measure the particle position as a function of time and study Zitterbewegung for different initial superpositions of positive- and negative-energy spinor states[24].

However, we find that the magnetic sea is full of negative energy by gravity. If gravity gains enough power and becomes a fundamental particle, we may predict that antigravity appears in space. There may be instability associated with negative kinetic energies in the antigravity regions[25]. It is in line with how black holes obtains energy and emit energy and particles[26,27]. It may be the basis for the discovery of the existence of dark energy in the universe[28].

The heating mechanism to drive the Sun's outermost atmosphere

The Sun's diameter is 865,400 mile, and its surface area is approximately 12,000 times that of Earth. The magnetic flux transfer occurs thru space and provides energy to motor the Earth. The corona produces the solar wind, an outflow of plasma particles (free ions and electrons) that expands into the space[29]. Parker Solar Probe (PSP) has presented the magnetic field line's presence and the Sun's magnetic field's direction and strength, dragged out into space by the solar wind [30,31]. The heating mechanism candidate includes Alfvén-wave turbulence or heating by reconnection in nanoflares or ion cyclotron wave heating or acceleration by thermal gradients[30].

According to our study, it is possible to estimate that the solar gravitational force and electromagnetic force generated in the magnetic sea are also mechanisms that cause solar wind. It is similar to the situation when the magnetic sea generated electricity from space H within the GG. The presence of switchbacks and folds in the magnetic field was crucial in past studies of the total solar magnetic flux derived from in situ measurements [32,33]. PSP second solar encounter makes it possible to measure the nascent slow wind with white-light images of streamer flows. The impact of specific structure makes a higher occurrence of magnetic field reversals associated with much stronger density variations inside than outer streamer flows. The highest-energy particles could be accelerated when strong shocks reach the tip of streamers [34,35]. The Sun might use the Sun's gravity in the Sun's magnetic seas to heat the corona like this experiment studies.

Methods

Experimental Design

The gravity generator (GG) exhibits electronic properties distinctive for the quantum particles described by the Dirac or Schrödinger equation. This system is not only impressive in itself but also allows one to access – in a condensed magnetic-gravity field experiment – the subtle and rich physics of quantum electrodynamics.

In 2018, we designed an testing device to convert gravity into electricity (Supplemental Section 1). The experimental device was assembled on 26 September, 2019. Electricity was measured by a precision source/measurement device (Supplemental Section 2). To prove that the electricity in the electromagnetic (EM) field was caused by gravity, we assembled a generator that cannot generate electricity according to Maxwell's equations. The N poles of the magnets were placed upwards, north, south, east, and west. Coil

Ass'Y was placed between two N poles, and the generator was assembled with bearing covers on the top and bottom. The precision source/measurement unit was connected to measure the electricity generated from a Pico ampere (pA) to a microampere (μA).

Sample Preparation and Measurement

i While the generator was rotating (Supplemental Section 3)

The experiments were carried out three times by placing dumbbell A and dumbbell B on the generator while rotating the magnets. The procedure was as follows:

1. We measured the amount of electricity generated while rotating without weight.

2. To apply the weight in a three-dimensional world, we measured the amount of electricity generated by placing dumbbell A while rotating.

3. To apply more weight in the three-dimensional world, we measured the amount of electricity generated by placing dumbbell B on dumbbell A while rotating.

4. To reduce the weight in the three-dimensional world, we measured the amount of electricity generated by removing dumbbell B from dumbbell A while rotating.

5. To reduce the weight in the three-dimensional world, we measured the amount of electricity generated by removing dumbbell A while rotating.

6. We measured the amount of electricity generated while rotating without weight.

The experiments were conducted three times (A, B, C) while the magnets were rotating.

ii While the generator was stationary (Supplemental Section 4)

While the generator was stationary, dumbbell A and dumbbell B were placed on the generator in turn and measured three times, and the procedure was as follows:

1. We measured the amount of electricity generated while the generator was stationary.

2. To apply the weight, we measured the amount of electricity generated by placing dumbbell A while stationary.

3. To apply more weight, we measured the amount of electricity generated by placing dumbbell B on dumbbell A while stationary.

4. We measured the amount of electricity generated by removing dumbbell B from dumbbell A while stationary to reduce the weight.

5. We measured the amount of electricity generated by removing dumbbell A while stationary to reduce the weight.

6. We measured the amount of electricity generated while the generator was stationary and free of dumbbells A and B.

These experiments were conducted three times (experiments D, E, F) while the generator was stationary.

iii Only voltage measurements (Supplemental Sections 5 and 6)

Experiments were performed to compare only the voltages obtained while the generator was rotating or stationary. We used a TDS 2014 four-channel digital storage oscilloscope voltage metre (100 MHz, 1 GS/s). A video was taken because the voltage metre could not save and output the data.

Calculations with Data

We used Google spreadsheets for R^2 calculation and drawing the trend lines.

Electricity, while Stationary in the Vacuum Chamber

The amounts of electricity and voltage generated in the vacuum chamber were measured. The Korea Institute of Civil Engineering and Building Technology (KICT) has operated at the centre of extreme environmental construction technology (Supplemental Section 7). This experiment was performed in a vacuum chamber and measured points 1 to 100,000 for 10 seconds and all added together, so we compared the increasing and decreasing trends. The change in the amount of current generated as the barometric pressure decreased was observed.

Declarations

Acknowledgements

Il-whan Kim designed the generator. He is a generator developer with 40 years of experience and asserted that electricity could never be generated from this device; James Oh, general manager of Jays, Inc., in South Korea, compiled the data to assist with the Keysight B2901A electricity experiment when running the generator. Taeil Chung of the Extreme Engineering Research Center at the Korea Institute of Civil Engineering and Building Technology operated a vacuum chamber to assist with this experiment. Woo-Seung Maeng and Jae-yeol Shim provided the necessary expenses for this paper. D. Młodziankowski provided the references of gravitational experiments to explain Dr Füzfa’s experiments.

Author Contributions

JH Lee developed the theory of gravity generation, performed the experiments and wrote the manuscript.

Competing Interests

"The authors declare no competing interest"

Data and Materials Availability

All data is published by OSF: Gravity to Electricity as Quantum (https://osf.io/ntuda/).

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Tables

Table 1. The electricity generated while the GG was rotating and stationary was measured on October 10, 2019.

	CH1 Current (A)			CH1 Voltage (V)			10 second -100,000 point (every 0.001 s)
	Maximum	Minimum	Sum	Maximum	Minimum	Sum	
A1	0.0004433	-0.0003803	-0.0009149	0.0000204	-0.0000172	-0.0019751	
A2	0.0007458	-0.0016802	-0.1374131	0.0000179	-0.0000208	-0.0002372	
A3	0.0010683	-0.0017568	-0.1140228	0.0000251	-0.000031	0.0017442	
A4	0.0026882	-0.0011917	0.1360524	0.0000189	-0.0000229	-0.0002788	
A5	0.0056106	-0.0047926	0.1460264	0.0000815	-0.0000623	-0.0017428	
A6	0.0004334	-0.0003605	0.0101899	0.0000194	-0.0000186	-0.0022982	
B1	0.0005052	-0.0003646	0.0056757	0.0000209	-0.0000189	0.0005494	
B2	0.0008837	-0.0021383	-0.1239456	0.0000237	-0.0000212	0.0019692	
B3	0.0008959	-0.0032941	-0.1080884	0.0000406	-0.0000417	-0.0024536	
B4	0.0024636	-0.0011921	0.0723971	0.000019	-0.0000214	-0.0013109	
B5	The test recorder overwrote the measurement data in the notebook.						
B6	0.0004619	-0.0003687	-0.0004063	0.0000211	-0.0000182	0.0013422	
C1	0.0004593	-0.0003969	0.033351	0.0000198	-0.0000202	-0.0034343	
C2	0.0004714	-0.0012035	-0.0831234	0.0000191	-0.0000231	-0.0006971	
C3	0.0026662	-0.0019067	-0.0950192	0.0000236	-0.0000218	0.0001664	
C4	0.0029132	-0.0016932	0.118348	0.0000194	-0.0000221	-0.0022711	
C5	0.0052364	-0.0065765	0.1328696	0.0000721	-0.0000538	0.000513	
C6	0.0004454	-0.000404	0.0400267	0.0000224	-0.0000205	0.0011928	
D1	0.0000047	-0.000004	0.0025892	0.0000186	-0.0000187	-0.0014627	
D2	0.0010419	-0.0015249	-0.1176412	0.0000171	-0.0000197	-0.003063	
D3	0.0010506	-0.0007511	-0.0177963	0.0000178	-0.0000204	-0.001477	
D4	0.0004691	-0.0004882	0.0123762	0.000017	-0.0000158	-0.0009084	
D5	0.0072367	-0.0075738	0.1321999	0.0001089	-0.0000709	-0.001653	
D6	0.0000038	-0.0000042	0.0020211	0.000019	-0.0000218	0.0019935	
E1	0.0000084	-0.0000079	0.0012128	0.0000195	-0.0000191	-0.0003436	
E2	0.0013242	-0.002625	-0.1247941	0.0000429	-0.0000418	-0.0008347	
E3	0.0010188	-0.0005505	-0.013439	0.0000193	-0.0000207	0.0005212	
E4	0.0004207	-0.0003099	0.0131795	0.0000188	-0.0000196	-0.0018299	
E5	0.0049669	-0.0050688	0.1273632	0.0000908	-0.0000666	0.0001761	
E6	0.0000043	-0.0000044	0.0010742	0.0000184	-0.0000191	0.0015754	
F1	0.0000042	-0.0000044	0.0002018	0.0000176	-0.0000189	-0.0001177	
F2	0.0004822	-0.0015375	-0.1268739	0.0000174	-0.0000233	-0.0024814	
F3	0.0008517	-0.0004604	-0.0165925	0.0000196	-0.0000191	-0.0001067	
F4	0.0006965	-0.0002703	0.0236493	0.0000186	-0.0000201	0.0014059	
F5	0.004052	-0.0040384	0.1180847	0.0000597	-0.0000483	-0.0016282	
F6	0.0000041	-0.0000042	0.0002543	0.0000187	-0.0000202	0.0015011	

Table 2. The experiment with the gravity generator in the vacuum chamber on June 18, 2020.

Barometric pressure (mbar)	1000	100	10	1	0.1	0.01	0.0001
1st measurement	-5.69E-03	-5.70E-03	-5.68E-03	-5.69E-03	-5.73E-03	-5.70E-03	-5.68E-03
2nd measurement	-5.77E-03	-5.69E-03	-6.00E-03	-5.67E-03	-5.70E-03	-5.70E-03	-5.33E-03
3rd measurement		-5.72E-03	-5.78E-03	-5.31E-03	-5.31E-03	-5.38E-03	-5.69E-03
4th measurement						-5.74E-03	**-5.66E-03**
5th measurement						-5.74E-03	-5.69E-03
6th measurement							-5.27E-03
7th measurement							-5.76E-03
8th measurement							-5.76E-03
9th measurement							-5.68E-03
10th measurement							-5.69E-03
Average (Current)	-5.73E-03	-5.70E-03	-5.82E-03	-5.56E-03	-5.58E-03	-5.65E-03	-5.62E-03

Figures

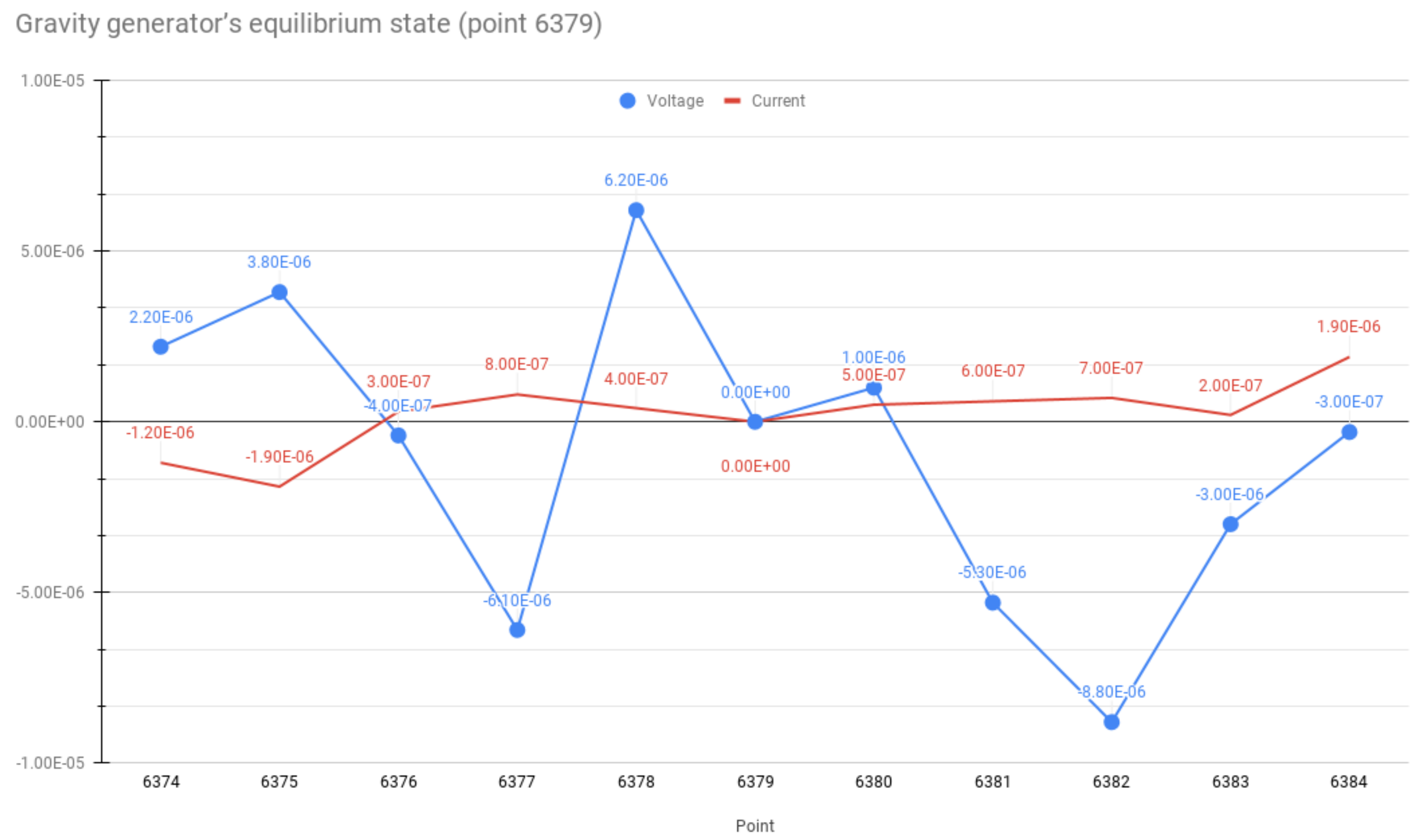

Figure 1

Gravity generator. 0 voltage and 0 current in the equilibrium state during experiment F4 6380 (6379): in the direction Earth spins under gravity and in the opposite direction under the repulsive magnetic force.

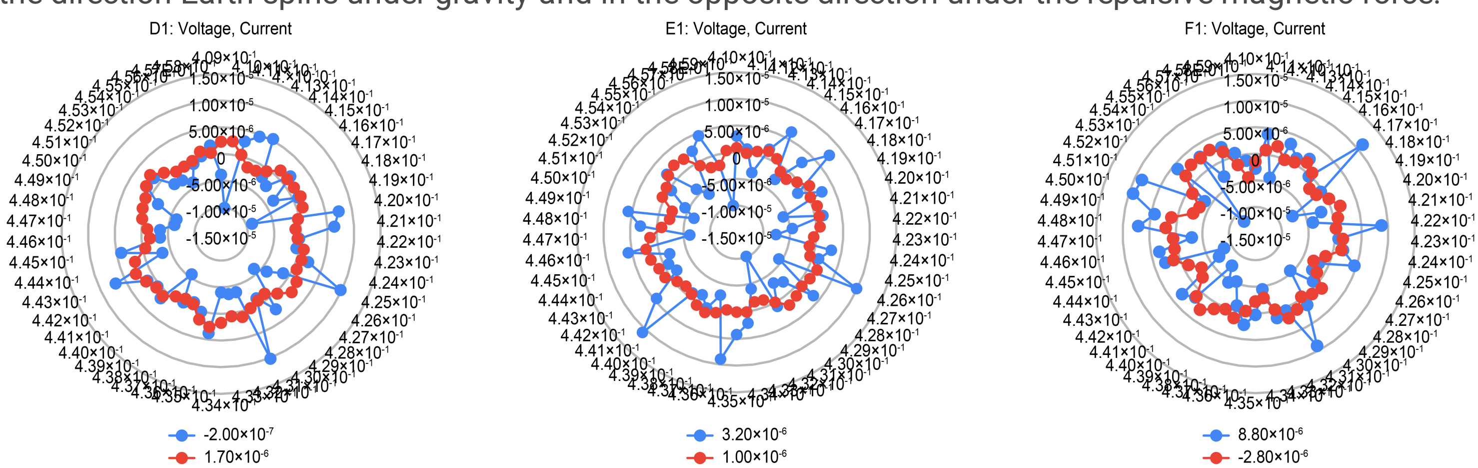

Figure 2

First row: Experiments D1, E1 and F1 were measured when the gravity generator stopped. This includes the data from points 408 of D1 (409 of E1, F1)) to 458 of D1 (459 of E1, F1) of the raw data 8. The blue is

the voltage, and the red is the current. Located on the y-axis, the round black x-axis is the time in 0.001-second increments.

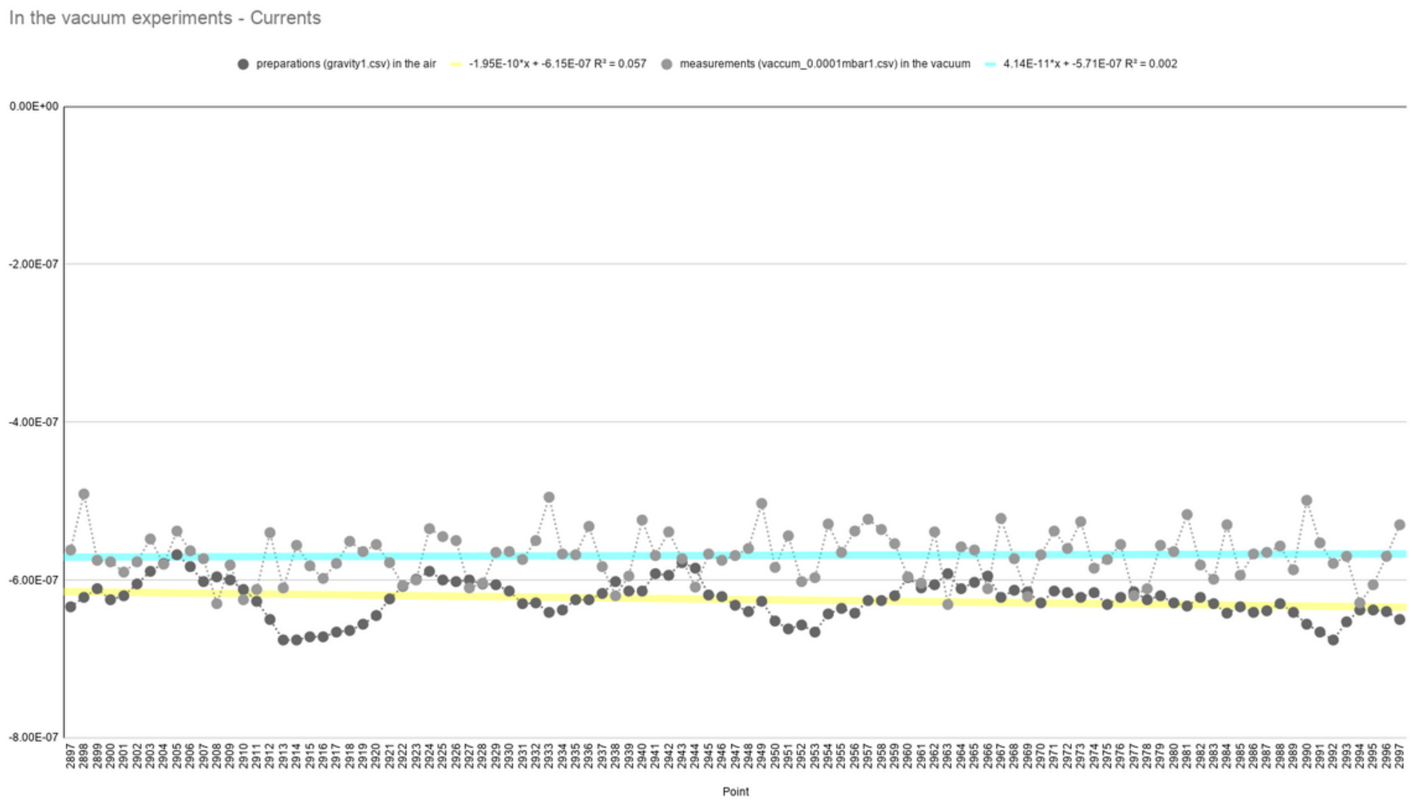

Figure 3

In the cacuum experiments – Currents: We compared from point 2897 to 2997 of 100,000 points for 10 seconds. When the GG was in the air, the currents from 2897 point to 2997 point (Raw data from Data S2 2020.06.18. Vacuum chamber & gravity generator in the air.- gravity1.csv) are displayed, and the trend line is displayed. Next, the currents from 2897 point to 2997 point were displayed in the data measured when the GG was in a vacuum (Data S3 2020.06.18.Experiments with the gravity generator in the vacuum chamber.-vacuum_0.0001mbar1.csv).

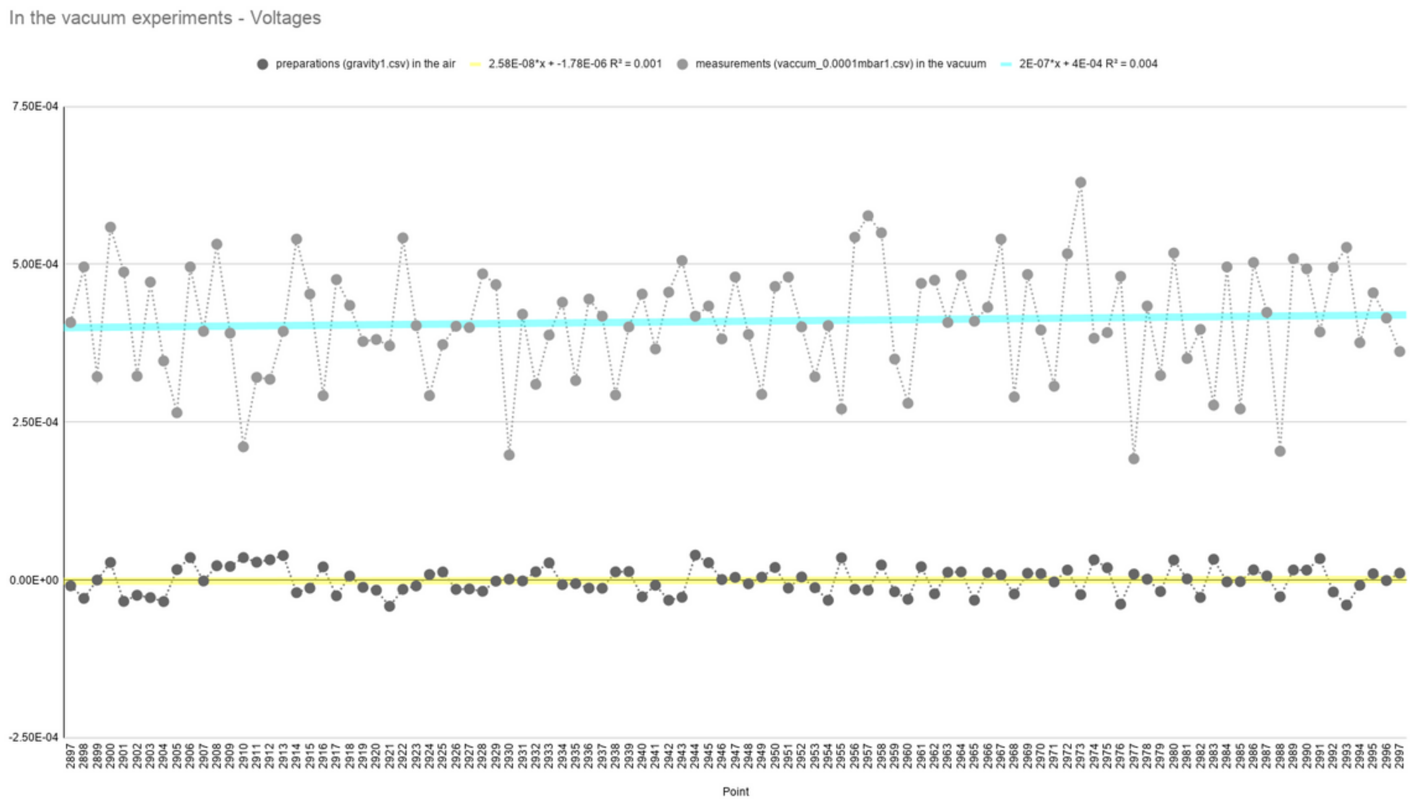

Figure 4

In the cacuum experiments – Voltages: We compared from point 2897 to 2997 of 100,000 points for 10 seconds. When the GG was in the air, the voltages from 2897 point to 2997 point (Raw data from Data S2 2020.06.18. Vacuum chamber & gravity generator in the air. - gravity1.csv) are displayed, and the trend line is displayed. Next, the voltages from 2897 point to 2997 point were displayed in the data measured when the GG was in a vacuum (Data S3 2020.06.18.Experiments with the gravity generator in the vacuum chamber.-vacuum_0.0001mbar1.csv).

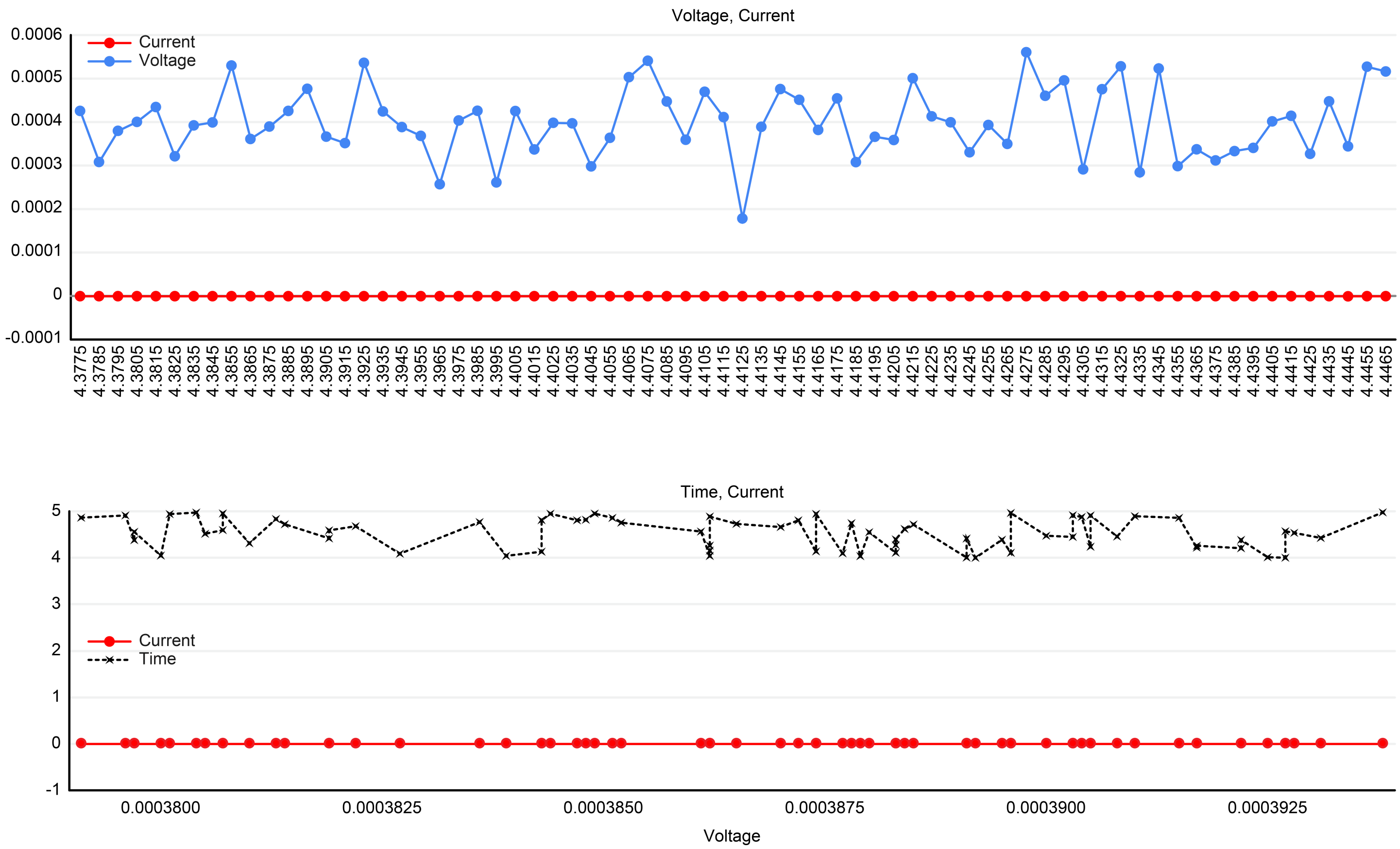

Figure 5

Graph with the same voltage but different times. The x-axis represented time, and the y-axis represented voltage. Then, the x-axis represented voltage, and the y-axis represented time. The data were reconstructed with the voltage on the x-axis and the time on the y-axis. There were 107 cases where the voltage had two times and 16 cases where voltage had three times, and 1 case where voltage had four times.

Supplementary Files

This is a list of supplementary files associated with this preprint. Click to download.

- 20200618preparationbeforeexperiment.zip
- 20191010GG.zip
- 20200618VacuumChamberGG.zip
- SupplementaryMaterialsfinal.pdf