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Presenting Some Pure Calculations and Proposing Seven Practical Approaches to Prove the Theory of Modeling the Earth as a Rotating Solenoid

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ABSTRACT

This study proposes a practical framework to validate the Electro-Dynamo Theory, which models the Earth as a rotating solenoid influenced by electromagnetic forces. Central to this theory is the hypothesis that electric charges and currents are induced in the Earth's upper atmospheric layers—particularly in the ozone layer of the stratosphere and the Van Allen radiation belts—by the solar radiation. These induced currents are proposed to play a fundamental role in driving both the Earth's axial rotation and its orbital motion around the Sun.Contrary to the conventional view rooted in Newtonian mechanics, this theory suggests that the gravitational constant G=6.673×10−11 N\cdotpm2/kg2 G = 6.673 \times 10^{-11} \, \text{N·m}^2/\text{kg}^2G=6.673×10−11N\cdotpm2/kg2 serves only as a simplifying coefficient for mathematical modeling. It is argued that gravitational attraction is not the result of mass alone, but rather a secondary effect emerging from electromagnetic interactions on a planetary scale. In this framework, mass does not exert force by virtue of its quantity alone, but through its interaction with electromagnetic fields.Additionally, the theory challenges a common interpretation of Einstein's General Relativity, which attributes gravity to the curvature of spacetime. It is posited here that spatial curvature is not the root cause of gravitational force, but rather a geometric consequence of underlying rotational and electromagnetic dynamics.To examine this hypothesis, several practical experiments are proposed, aimed at detecting atmospheric electric currents, measuring charge distributions, and correlating these phenomena with Earth's motion. This alternative perspective offers a new approach to understanding planetary mechanics, where electromagnetism is not merely a supplementary force, but potentially the primary driver of gravitational-like effects in planetary systems.

Keywords: Earth, gravity , solenoid ,gravitational constant ,Maxwell's electromagnetism equations.

Introduction

From a historical point of view, the evolution of our understanding of the universe has often followed a sequential path, shaped by the scientific tools and conceptual frameworks available at each era. When Sir Isaac Newton introduced his groundbreaking theory of gravitation in the 17th century, the scientific world lacked the necessary knowledge and experimental data regarding electromagnetic phenomena. Newton's laws, though revolutionary and foundational to classical mechanics, were based on observations limited to terrestrial and celestial bodies as understood at the time. Electromagnetism, as a formal field of physics, did not emerge until the 19th century with the pioneering work of scientists such as Michael Faraday and James Clerk Maxwell. (Lee, 2004).) Therefore, Newton's gravitational theory operated in a context where the role of electromagnetic interactions in cosmic dynamics was entirely unknown.Similarly, when Albert Einstein presented his theories of special and general relativity in the early 20th century, humanity had not yet ventured into space. No artificial satellite had been launched, and our knowledge of the Earth's upper atmosphere was extremely limited compared to current standards. The precision with which we now analyze atmospheric layers—enabled by satellite imaging, remote sensing technologies, and atmospheric probes—was unimaginable at that time. Phenomena such as the Van Allen radiation belts, which represent crucial indicators of the interaction between Earth's magnetic field and the solar wind, had not yet been discovered. These radiation belts, detected in 1958 by instruments aboard the Explorer 1 satellite, illustrate the dynamic nature of electromagnetic activity in the near-Earth environment, and would have significantly informed any theory attempting to unify gravitation and electromagnetism had they been known earlier.In light of these historical limitations, it becomes clear that many foundational theories in physics, while incredibly accurate within their domains, were developed without the benefit of full information about the Earth's electromagnetic environment. As scientific understanding evolves and new empirical data become available, it is both necessary and intellectually productive to revisit and refine our theoretical frameworks. In particular, there is growing interest in developing models that integrate electromagnetism with mechanical and gravitational phenomena to provide a more unified picture of natural processes. The Earth, as both a mechanical and electromagnetic system, presents a unique opportunity for such integrative modeling.(Bruni, Vinolas, Berg, Polach, Stichel, 2011).

In this article, a novel theoretical hypothesis is proposed, grounded in the historical development of physics and informed by contemporary atmospheric science. The central idea explored herein is the modeling of the Earth as a *rotating solenoid*, (Mattis,2006). a conceptual framework drawn from electromagnetism that has been underutilized in geophysical models. A solenoid, in its simplest form, is a coil of wire that produces a magnetic field

when an electric current passes through it. When adapted to the planetary scale, this analogy opens the possibility of describing Earth's rotational motion and electromagnetic behavior in a unified manner. The theory posits that solar radiation—specifically, the high-energy particles and electromagnetic waves emitted by the Sun—induces electrical currents and charge separations within Earth's atmospheric layers.(Chyba, Hand, Chyba, 2025). This induced charge and current, particularly concentrated in the ozone layer, may not merely be a passive response to solar input but may also play an active role in influencing the Earth's rotation.The atmosphere, and especially the ozone layer located approximately 20–30 kilometers above the Earth's surface, is treated in this model as the outer plate of a spherical capacitor, with the Earth's surface functioning as the inner plate. This conceptualization allows for a formal treatment of atmospheric electrical activity in terms of energy storage, current induction, and electromagnetic feedback.(Bastos, Sadowski, 2013). According to this hypothesis, as solar radiation interacts with the ozone layer, it not only initiates photochemical reactions but also induces a separation of charges across atmospheric strata. The ozone layer, by virtue of its electrical conductivity and location, becomes a dynamic participant in an electromagnetic system whose effects could potentially extend to the mechanical rotation of the Earth itself.(Cooley et al: 2015)To explore and validate this theory, seven practical experiments have been designed, each intended to test specific components of the hypothesis.(Sung et al: 2019) These experiments are aimed at measuring induced currents in the upper atmosphere, identifying rotational correlations with solar electromagnetic activity, and examining changes in atmospheric capacitance over time. The experiments range from direct atmospheric sampling using high-altitude balloons and satellite instruments to ground-based observations of geomagnetic fluctuations and their synchronization with solar activity. Particular attention is given to temporal variations—such as the diurnal and seasonal cycles—as well as extreme events like solar flares and geomagnetic storms, which may amplify the interactions proposed by this model.(Knight,2016& Poole, 2017).

The implications of this theory, if supported by empirical data, are significant. It challenges the long-standing assumption that Earth's rotation is purely a mechanical inheritance from the formation of the solar system. Instead, it suggests that electromagnetic phenomena—especially those driven by solar radiation—may contribute in a measurable way to maintaining or modulating Earth's rotational motion. This perspective not only bridges gravitational and electromagnetic theories but also enriches our understanding of Earth-Sun interactions, atmospheric science,(Transeth, Pettersen, Liljebäck, 2009). and planetary dynamics.In conclusion, this article seeks to contribute to the broader discourse on the intersection of electromagnetism and mechanics in planetary systems. By integrating historical context, modern atmospheric data, and a novel theoretical framework, it offers a fresh perspective on a question that lies at the heart of geophysics and cosmology. (Mattis, 2006). As science advances, revisiting classical assumptions with new models and experimental tools is essential for the continued refinement of our understanding of nature. Through this work, we aim to stimulate further research into the electromagnetic forces that may be subtly yet fundamentally shaping the motion of our planet.

Materials and methods

In the far distances, the electric charges can be considered as point charges. Therefore; the Sun and the Earth can be considered as point charges and the Coulomb's rule can be used for equilibrium of the charges. First, the constants of capacitor around the earth and the electric charge of the Earth is calculated.

1. $C = \varepsilon_0 A/d$

$\varepsilon_0 = 8.85 * 10^{12}$ ($C^2/N.m^2$)

As half of the Earth is receiving the radiation current and induces electromagnetically, the effective area is supposed to be half of the Earth surface. Also, based on the calculations of the Prof Greg Poole in the 22 kilometers of the Earth surface the equilibrium between electromagnetic fields around the earth is received that refers the ozone layer (Poole , 2017) Thus for this capacitor:

$D_{1 =} d_{\text{ozone layer – earth}} = 22$ km

$R_{\text{earth}} = 6.37*10^6$ m

$R_1 = R_{\text{earth}} + D_1 = 6.4 * 10^6$ m

If the Earth is considered as a point charge, the electric field of it is equal to :

2 . $E = \frac{1}{4\Pi\varepsilon_0} \times \frac{q}{r^2}$

The real electric filed of the Earth is about 100 to 150 (V/m) that we consider e=100 (V/m)

R is equal to earth radius and from equation 2 the q obtain as :

$Q_{\text{earth}} = 100(V/m) * 4 * \pi * 8.85 * 10^{-12}*(6.37 * 10^6)^2 = 4.51*10^5$ C

In this calculation, the maximum of estimation is one order of magnitude base on the simple rules of physics as the complexing the calculation from start point do not help to improving the theory . The charge of the Sun is calculated by the equilibrium of Gravitational forces and Coulomb's law :

3. $K*Q_{sun}* Q_{\text{earth}} / (d_{\text{erth-sun}})^2 = G * Ms_{un} * M_{\text{earth}} / (d_{\text{erth-sun}})^2$

$Q_{\text{earth}} = 4.5 *10^5$ C

$K= 1/4\pi\varepsilon_0 = 9*10^9$ $N.m^2/c^2$

$M_{sun} = 1.99 * 10^{30}$ kg

$M_{earth} = 5.98 * 10^{24}$ kg

G = gravitational const.

By considering the electric charge of the Sun and the the distance between Sun and Earth, the electric charge of the Sun can be calculated from equation 3 .

$Q_{sun} = 2.64 * 10^{29}$ C

At the past this calculation was performed and did not accepted(Lloyid ,1961).The reason is that supposed this charge must be produced in the moment but if the capacitor shape of the Earth and Sun considered this problem does not occur . For clearing the meaning some basic calculation performed to show the relations of these constants. The radiation energy that Earth receives from the Sun is about 1.36 KW/m^2.If the atmosphere layer is considered about 500 km, the surface of the sphere that absorbs this energy is :

$R = R_{earth} + 0.5 *10^6$ m = $6.87*10^6$ m

4. $E_{earth} = 1.36 * 10^3$ (W/m^2) * 4 * π* R^2 ($R = 6.87 * 10^6$ m)

E earth = $8.06 * 10^{17}$ W

By this value the energy of the radiation source can be calculated.

5) . $E_{sun}/E_{earth} = d^2_{earth-sun}/R^2_{sun}$

$R_{sun} = 6.96 *10^8$ m

$d_{earth-sun} = 150 * 10^6$ km = $1.5 * 10^{11}$ m

Therefore, the radiation emitted from the Sun in each moment that can be calculated from equation 5 is:

$E_{sun} = 3.74 *10^{26}$ W

From the mass and energy equation, if it is supposed that all the radiation energy obtained from the mass is converted to energy , the disappearing mass would be :

6). $E = m C^2$

C = Light Speed = $3*10^8$ m/s

$3.74*10^{26} = m * (3*10^8)^2$

m = $4.15 *10^9$ kg

The amount of mass reported in the literature is 4.26 million tons that is converted in the Hydrogen to Helium fusion reaction, which is about 0.7% of converting mass in the nuclear reaction (i.e.$3.846 *10^{26}$ watts) and we consider this accepted value. If it is assumed that all that energy is in the form of electrons by the mass of $m_e = 9.11*10^{-31}$ kg, then the produced electrons in the free space will be:

7). $m= n* m_e$

$4.26*10^9 = n*9.11*10^{-31}$ kg

$n = 4.67*10^{39}$

Each electron has the charge of $1.6 *10^{-19}$ Coulon. Therefore; the produced charge is :

8). $q = 4.76 *10^{39}*1.6*10^{-19} = 7.62*10^{21}$ C

That is far from the Sun's charge that was calculated in the order of 10^{29} C . In the recent study, by considering the radiation and solar storms and analyzing the layers of atmosphere, it was observed that there is a capacitor around the earth that is presented in Fig 1.(Mohanty, 2023)This capacitor has been formed slowly in the historical ages of the Earth and charged to this level as atmosphere of the Sun does.

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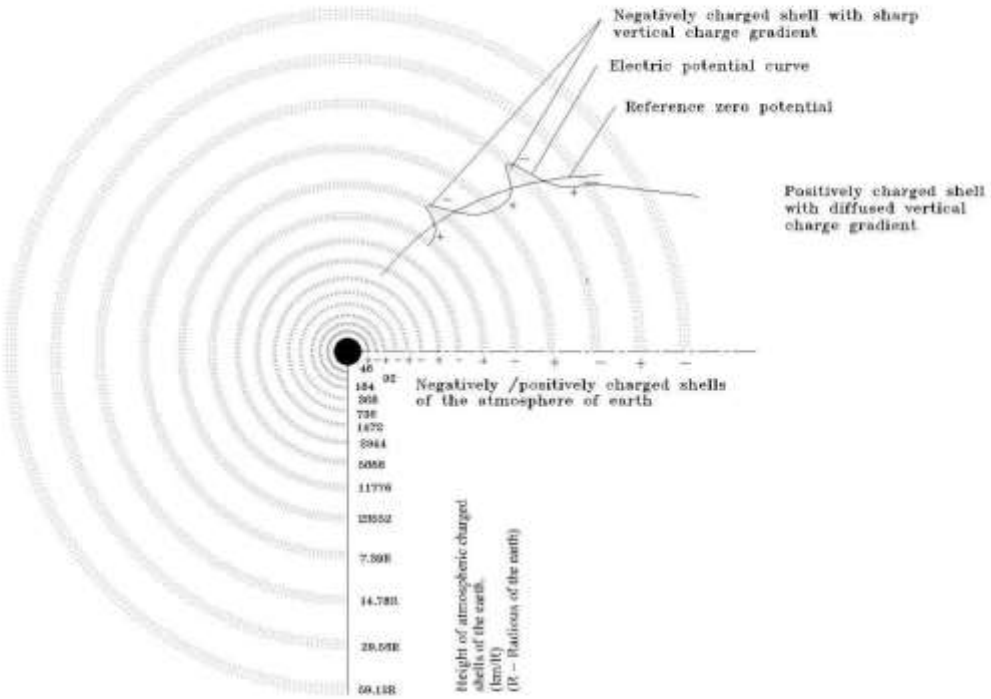

Fig.5 ATMOSPHERIC CHARGE STRUCTURE OF THE EARTH.

(Deformation of the ion-shells due to the impact of solar wind, lunar transit etc. are not taken into consideration).

Also, the Van Allen belt was discovered three years after Einstein death (Fig. 2) (Halliday, Resnik, Walker, 2007).

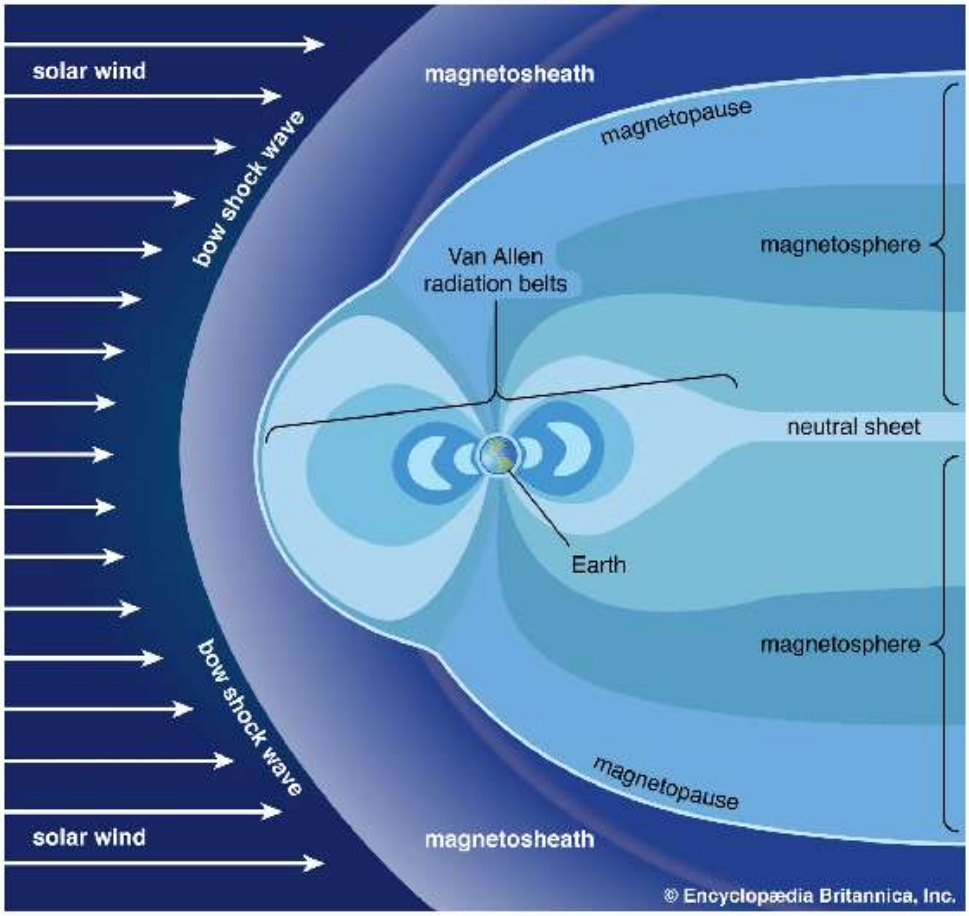

Figure2 . Van Allen Belt at the atmosphere of the Earth discovered 1958.

In understanding the dynamic interactions between celestial bodies and their atmospheric phenomena, it is essential to consider not only gravitational influences but also electromagnetic interactions, particularly those involving large-scale capacitive systems. One intriguing consideration is the enormous scale of the Sun's atmosphere compared to that of Earth. It has been estimated that the mass and volume of the Sun's atmosphere exceed those of the Earth's atmosphere by a factor of approximately 10^{13}. This dramatic difference suggests the possibility that the Sun itself may function as a kind of natural spherical capacitor—much like what has been proposed for the Earth—wherein its atmosphere acts as a dielectric medium, capable of accumulating and storing electrical energy over astronomical timescales. Given the ongoing nuclear reactions within the Sun's core, which release vast amounts of radiation and charged particles, it is plausible to hypothesize that the Sun's atmospheric capacitor has been gradually charged over billions of years. This process would be driven primarily by the continuous flow of high-energy particles and radiation pressure generated by fusion reactions. As charged particles are emitted into the solar atmosphere and beyond into the heliosphere, they may induce long-term charge separation between different layers of solar plasma, resulting in a quasi-stable electromagnetic configuration. Extrapolating this idea to the Earth, it can be postulated that Earth's own atmospheric capacitor—comprising the surface of the Earth as one "plate" and the ozone layer or other upper atmospheric boundary as the second "plate"—was not always in its present mature form. During earlier geological and atmospheric epochs, especially when the atmosphere was still forming and stabilizing, the capacitive properties of the Earth-atmosphere system were likely different in both magnitude and behavior. In particular, during the periods when this "capacitor"

was incomplete or poorly developed (either in terms of charge retention, atmospheric density, or spatial configuration), the system may have been more vulnerable to electrical imbalances or discharges.(Halliday, Resnik,R., Walker, 2007)

These imbalances could have manifested in the form of extreme weather phenomena, such as prolonged or heavy rains, electrical storms, or sudden pressure changes. (Consa, 2018). This idea aligns with the broader hypothesis that atmospheric conductivity and capacitance are directly linked to the planet's electromagnetic interactions with the Sun. In the early stages of Earth's atmospheric evolution, when the upper layers were thinner or contained different chemical compositions, the resistance and dielectric properties of the atmosphere would have been much lower.(Knight, 2016). This lower resistance could have facilitated easier discharge paths for atmospheric electricity, possibly contributing to more volatile weather patterns and increased precipitation. Hence, periods of "heavy rain" in Earth's geological past may not have been driven purely by thermal or oceanic factors but also by electromagnetic instability related to an immature atmospheric capacitor system. Turning our attention to Earth's broader motion through space, it is well-established that our planet follows a complex set of trajectories, one of the most significant being its elliptical orbital rotation around the Sun, which takes approximately 365.25 days to complete. This orbital movement is typically modeled using Newtonian gravitational mechanics, and from that framework, it is understood that the centripetal acceleration experienced by Earth in its orbit is balanced by the gravitational pull from the Sun. However, if one incorporates electromagnetic effects into this system—such as those potentially induced by the interaction between the Earth's atmospheric capacitor and the solar wind—new dynamics could emerge. (Cheng et al, 2014) According to classical mechanics, the angular acceleration α\alphaα of an object in rotational motion around a central body is related to the net torque acting upon it. For circular or near-circular orbits, the equilibrium condition is often expressed by equating the required centripetal acceleration aca_cac to maintain the orbital path with the actual acceleration produced by the net forces acting on the object. That is:

ac=v2r=GMr2a_c = \frac{v^2}{r} = \frac{GM}{r^2}ac=rv2=r2GM

Where:

- vvv is the orbital velocity of Earth,
- rrr is the distance between the Earth and the Sun,
- GGG is the gravitational constant,
- MMM is the mass of the Sun.

However, if additional forces—specifically, electromagnetic in origin—are present, then this equilibrium equation may require modification. For example, if a net charge or current exists in Earth's atmosphere, induced by solar radiation or cosmic particles, then a Lorentz force component could theoretically affect the Earth's orbital motion, albeit subtly. In such a framework, the Earth's movement may not be governed purely by gravitational potential but by a composite of gravitational and electromagnetic potentials.Additionally, if we consider the Earth as a rotating solenoid, as suggested in earlier sections of this research, the rotation itself could generate a magnetic field that interacts with the Sun's own magnetic influence. This interaction, coupled with capacitive and inductive elements in the atmosphere, opens the possibility of electromagnetic torque contributing to or modifying Earth's angular momentum.(Transeth, Pettersen, Liljebäck, 2009). These interactions might be minuscule on human timescales, but over geological time periods, they could potentially influence orbital or rotational dynamics.In summary, by drawing analogies between planetary atmospheres and capacitive systems, and by acknowledging the immense scale of solar electromagnetic phenomena, we open new avenues for interpreting Earth-Sun interactions. These interactions may have played a more active role in shaping Earth's climate history and mechanical motions than previously considered.(Russenschuck,2011). The hypothesis that Earth's atmospheric capacitor was once immature and electrically unstable offers a compelling framework to explain certain periods of extreme weather in Earth's deep past. Moreover, re-evaluating Earth's orbital mechanics through an electromagnetic lens, rather than purely gravitational, challenges traditional models and invites interdisciplinary exploration across astrophysics, atmospheric science, and electromagnetism.Using gravitational equations, the angular acceleration must be equal to the centroid acceleration, which means:

9) . $G\frac{M\times m}{r^2} = m\frac{v^2}{r}$

G=Gravitational const.

M = Sun Mass

m = earth mass

d = sun-earth distance

10) . V = $\sqrt{\frac{GM}{r}}$ = 29.7km/s

Thus the Earth's move around the Sun with the speed of more than one100,000 km/hr, which is not sensible for us because it is a relative movement. However; in the rotating solenoid this movement is due to interaction of electromagnetic field of Earth with induced electric current of the atmosphere and the Earth is looks like a plunjer type solenoid. The necessary electric current estimated by Prof G. POOLE is about $1.7*10^7$ Ampere . In Halliday Physics book (Halliday, ,Resnik, Walker, 2007).by considering only one round wire around the earth equator, this current is estimated to the order of 10^8.The Earth has the electromagnetic torque of $8*10^{22}$ (J/T) and if one round wire around Earth 's equator is supposed to produce the same dipole momentum, the required electric current is :

11) $.i = \frac{\mu}{\pi R^2} = \frac{8\times10^{22}}{\pi(6.37*10^6)^2} = 6.3 \times 10^8\ A$

Also, if the solenoid has magnetic core, it's induction increases. Because of the Lorentz induction, two forward and backward wave exists. The rotating system of the earth cooled by air.

Also, the induced torque for rotating the Earth around it's axis has the order of magnitude of 10^{15} (N). In reference [6] the tidal force of Moon estimated as this amount and for circulation the friction is needed and no other mass exist than can cause this force. So it's the Month that cause the Earth to rotate around it's axis. If the moving velocity of the planet is comparable to the light speed, it must use relative equations. But the natural consequence of rotating is curving the space and as the result of curved space two object does not attract each other. However; if this current of order of 10^7 is not cleared completely like in the reference [3], that the maximum current is estimated about 2000 Ampere, it must use the maxwell induction relations. It means that some part of this current must be considered in the Earth. Also it must considered that ozone layer is in plasma state and has unusual temperature increase and is rotating by the different rotating velocity than Earth. For specifying this current in ozone layer or higher layers in Van Allen belt these experiments is proposed:

Experiments

Seven practical experiments are proposed:

1. Investigating of target layers of atmosphere in tidal moments and eclipse time.

2. Investigating of the target layer in coordinating of planets that cause electric fluctuations on the earth.

3. Investigating of ozone layer by isotope of ^{18}O in ozone molecule or charged microplastic that spread in ozone layer and investigating it's movement and suspension of them.

4. Investigating of the target layer in the rainfall of meteorites.

5. Investigating of the target layers of atmosphere in great earthquakes that accompanied by unusual light in the atmosphere.

6. The dark side and bright side of ozone layer investigated from the view of temperature change. As the dark side has some hours to cool down and must have different temperature compare to bright half if there is no electric currents .

7. The objects below than this capacitor is not able to rotate around the earth in atmosphere except light objects as air molecules. So by charging one side of the satellites when it is send to it's orbit this issue can be examined. It means that the satellite won't be able to rotate in it's orbit sustainably.

Results

If this theory is true it can be concluded some idea and hypothesis immediately. In the view of environmental aspect the air, water and soil is considered as one zone.

1. The greenhouses has direct effect in the atmosphere and changing the amount of them can impact in the rotation of Earth and speed of displacing of the poles of the Earth . Also by using nuclear or electromagnetic weapons that disturb the equilibrium of these gases, the rotation of the Earth or it's orbit can be changed.

2. Also as the friction is needed for rotation, Moon cause the Earth to rotate around it's orbit.

3. In the ages that Earth was forming it's capacitor around it's atmosphere, there was heavy rains.

4. The future trip is almost electromagnetically and the trip to Mars will be reversible by using electromagnetic characteristics.

5. The tectonic movement layers of the Earth and formation of the continents is due to these phenomena.

6. The coordination of the planet like Moon and Jupiter causes the interruption of electricity and earthquake.

7. If the solenoid is plunjer type and does not joint to the body, after some time the movement of it disrupted. Like this the displacing of the earth poles occurs.

8. In the breaking of the sound wall two forward and backward waves forms that is due to this induction. So passing of the concord aero plane from the sound wall is like to fist the compressed air and the result is that the dream of flying with concord is not reachable but it can be two changes:

8.1. Like the frog hands, the jet motors must be put in the front of the airplane to push aside the compressed air from the nose of the airplane,

8.2. In the wind tunnel the electromagnetic characteristics of the compressed air must be investigated to reduce it by opposite electromagnetic field. The UFOs uses these electromagnetic fields for movements but for military reason they not used for general trips.

9. In the equator part of the Earth as the radiation is greater some movement against the gravity will be exist. For example in Jam city in Bushehr province of Iran there is mountains that local drivers see the movement against the gravity.

10. Many of birds for finding foods and immigration paths are depended to these atmospheric fields besides of the Earth electromagnetic field. So investigating of immigration of them in the eclipse or fluctuation of the electromagnetic fields in the atmosphere can be useful.

11. In the extinctions ages of dinosaurs the flying species were more in danger than other groups because of the atmosphere electromagnetic field imbalances.

12. This theory will help one step to solving the black hole mystery. Two waves include in electromagnetism movement that one of the is because of Lorentz induction.

13.The atmosphere of the planets that do not have this capacitor, have heavy storms.

14. For returning of the wandering satellites to Earth, it can be used electromagnetism induction.

Conclusion

In classical physics, the gravitational force between two masses is described by Newton's Law of Universal Gravitation, which states that every mass attracts every other mass with a force proportional to the product of their masses and inversely proportional to the square of the distance between them. The gravitational constant GGG is employed in this equation to simplify and quantify the force. However, this traditional interpretation may overlook more fundamental physical interactions that could be responsible for the observed gravitational effects. This paper proposes that mass alone is not the intrinsic cause of gravitational attraction. Rather, it suggests that electromagnetic interactions may play a far more significant role than previously acknowledged in attracting two objects toward each other. The gravitational constant, under this view, acts primarily as a mathematical convenience—a fitting parameter—rather than as an expression of a fundamental physical constant. It facilitates computations but does not necessarily reveal the underlying cause of the attractive force. The hypothesis advanced here is that electromagnetic fields, induced and shaped by the interaction of solar radiation with planetary bodies, could be the true origin of what is observed as gravitational behavior. Further extending this hypothesis, it is posited that the curvature of space, as described in Einstein's General Theory of Relativity, is not itself the root cause of gravitational attraction. Instead, curvature may be viewed as a geometric manifestation of deeper physical processes such as electromagnetic field interactions. In this framework, the rotation of celestial bodies, and the electric and magnetic fields generated by their motion and composition, contribute to the apparent "curving" of spacetime—but the curvature is a result, not a cause. Specifically, the rotation speed of a planet like Earth influences the organization and intensity of its surrounding electromagnetic fields, which in turn may affect other bodies in its vicinity through long-range interactions.

To explore these ideas, this study builds upon the Dynamo Theory, which models the Earth as a rotating solenoid—a cylindrical coil that, when rotated, can generate magnetic fields. This concept, well-established in geophysics to explain the Earth's magnetic field, is here expanded and experimentally investigated in a new context. The Earth, according to this refined theory, functions as a massive, rotating electromagnetic system. Solar radiation, which includes a broad spectrum of electromagnetic waves and high-energy particles, interacts with Earth's atmospheric layers, particularly the ozone layer and the Van Allen radiation belts**.** These layers act as conductive mediums where electromagnetic energy from the Sun induces both electric charges and currents of substantial magnitude. Initial estimates suggest that solar radiation can induce electric charges in Earth's atmospheric system on the order of 10510^5105 coulombs and electric currents on the order of 10710^7107 amperes. These figures are approximations and require more detailed modeling to obtain precise values, but they serve as indicators of the potential scale of electromagnetic activity driven by solar influence. This induced current and charge distribution effectively transform the Earth into a planetary-scale solenoid, complete with its own dynamic electromagnetic field that could influence its rotation and orbital behavior. The practical implications of this model are significant. If Earth's motion is not purely governed by gravitational forces—as traditionally defined—but is instead influenced or even driven by electromagnetic interactions between the Earth and the Sun, this would call for a fundamental shift in how we understand celestial mechanics. Moreover, the presence of the Moon introduces an additional layer of complexity. The Moon's gravitational pull on Earth produces tidal forces, which are commonly understood as causing the oceans to rise and fall. However, in this revised model, these tidal interactions are also accompanied by frictional forces—especially in the oceanic and atmospheric layers—which may contribute to the Earth's axial rotation. In other words, the Earth may rotate not solely due to initial angular momentum from the formation of the solar system, but also due to continuous frictional and electromagnetic interactions within the Earth-Moon-Sun system. To investigate and validate the core assumptions of this theory, **seven practical experiments** have been designed and proposed. These experiments are intended to empirically test whether electromagnetic forces induced by solar radiation have measurable effects on Earth's rotational and orbital dynamics. The experimental methodologies include:

1. **High-altitude electromagnetic field measurements** using balloon and satellite platforms to detect solar-induced current variations in the upper atmosphere.
2. **Observation of atmospheric charge distribution** under varying solar radiation intensities, especially during solar maxima and minima.
3. **Ground-based monitoring of induced currents** in conductive loops or structures sensitive to atmospheric electric fields.
4. **Tracking variations in Earth's rotational velocity** in correlation with solar electromagnetic activity and solar storms.
5. **Analysis of Van Allen belt fluctuations** during solar flares to determine shifts in electromagnetic energy storage.
6. **Measuring capacitance properties** of the atmospheric system under different thermal and radiation conditions.
7. **Simulation modeling** using a laboratory-scale rotating solenoid setup that mimics Earth's electromagnetic interactions under controlled radiation input.

Each experiment is designed to address a specific component of the theory and, collectively, they aim to provide a coherent dataset that either supports or refutes the hypothesis that Earth's motion is influenced significantly by induced electromagnetic phenomena. In conclusion, this theoretical approach challenges the traditional gravitational paradigm by presenting a model in which electromagnetic forces—particularly those induced by solar radiation—play a central role in planetary motion and interaction. The model of Earth as a rotating solenoid opens a new perspective on how solar energy affects not just climate and atmospheric behavior, but potentially the fundamental dynamics of planetary motion itself. If validated, this model could lead to a broader, unified understanding of celestial mechanics that incorporates both gravitational and electromagnetic forces into a comprehensive framework.

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