

# A New Conceptual Explanation for Terrestrial Wormholes and Earth's Magnetic Field Deviation Effects

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**Abstract-** The fields we know up till now are electric and magnetic. These fields can be classified according to different categories; from these categories, the field nature category consists of natural or artificial (electromagnetic) fields. One of the most essential artificial electromagnetic fields is the rotating magnetic field (RMF). In this paper, RMF will be used to explain one of the mysterious physical phenomena: wormholes. The paper will present how it can contribute to solving one of wormholes' problems in modern physics: the construction of artificial terrestrial wormholes. Also, in this paper, the interaction between electric and magnetic fields will be presented, and a new idea about the biological life nature of all living things, especially humans, will be proposed.

**Keywords-** Magnetic Field, Electric Field, Electromagnetic Field; Rotating Magnetic Field (RMF).

## 1. INTRODUCTION

All living things exist in an electromagnetic world, from the chemical bonds that bind us together to the immense and powerful forces of thunderstorms and solar flares. Human understanding of electricity emerged during an era of wonder and fear surrounding unexplained natural phenomena like lightning and the aurora borealis - the natural fields are either electric or magnetic [1].

Centuries ago, the Earth's magnetic field became an invaluable tool for explorers, yet there is yet to be a comparable large-scale map of the Earth's electric field or magnetic field. Unlike the Earth's continuous magnetic field lines, which extend deep into the planet, electric fields start and stop at electric charges, which can be located anywhere, and we are still discovering new locations and shapes of them around our atmosphere [2].

The Earth's magnetic field is a protective force created by the movement of molten iron in its outer core. This field stretches from the planet's interior out into space, forming a region known as the magnetosphere. It is crucial in shielding the Earth from solar wind and cosmic radiation while guiding navigational systems through its interaction with magnetic compasses [3].

The magnetic field is dynamic and constantly changing, with its strength and orientation shifting over time in a process known as geomagnetic variation. Occasionally, the magnetic poles even reverse in a geomagnetic reversal, which has occurred many times throughout Earth's history [4].

This field also plays a role in phenomena like the auroras -

commonly referred to as the Northern and Southern Lights - which occur when charged particles from the sun interact with the Earth's magnetic field and atmosphere [4].

The Earth's magnetic field is strongest at the poles and weakest at the equator, resembling that of a giant bar magnet. Field lines emerge from the South Pole and re-enter at the North Pole [3].

The Earth's magnetic field varies from about 22 to 67  $\mu\text{T}$  (0.22 to 0.67 Gauss). In comparison, a strong refrigerator magnet has a field strength of around 10,000  $\mu\text{T}$  (100 Gauss). A map depicting intensity contours is known as an isodynamic chart. According to the world magnetic model, the intensity of the field decreases from the poles to the equator [2].

The Earth's electric field is a less well-known but essential aspect of the planet's electromagnetic environment. It primarily arises due to the interaction between the ionosphere, a layer of Earth's atmosphere, and the surface. The field is generated by the separation of positive and negative charges, with the atmosphere generally carrying a positive charge while the Earth's surface holds a negative charge [5].

Their electric fields interact when charged particles are near enough to influence one another. The field lines converge when particles with opposite charges attract. At the same time, they diverge when particles with like charges repel - The electric field forms to keep electrons bound to ions, preventing their escape. Once this field is established, it can provide a boost to lighter ions, such as hydrogen, giving them enough energy to overcome Earth's gravity and speed away as part of the polar wind [5].

Thunderstorms, lightning, and solar radiation influence this global electric circuit. Thunderstorms, in particular, act as

generators, transferring charge between the atmosphere and Earth, creating strong local electric fields. These local fields can vary dramatically depending on weather conditions, altitude, and location [6].

Unlike the Earth's magnetic field, the electric field is not continuous and begins and ends with electrical charges, which can be located almost anywhere. While it's weaker than magnetic fields, Earth's electric field plays a role in atmospheric phenomena, influencing weather patterns and the behaviour of charged particles in the atmosphere [4, 5].

Scientists continue to study Earth's electric field to better understand its impact on weather, climate, and even the behaviour of living organisms. The previously stated fields are known as natural fields. The upcoming sections in this paper will discuss the nature of artificial fields, especially the well-known electromagnetic fields. The paper will also discuss how they can be harnessed and used in some physical issues. Two issues will be discussed: the interaction between electric and magnetic fields and wormholes.

## II. ELECTROMAGNETIC FIELDS

Electromagnetic fields are a famous type of artificial field. They originate from electric currents, so their nature depends on the current type. When a direct current (DC) passes through a coil, a constant or stationary field will be erected. When an alternating current (AC) passes through a coil, a pulsating field will be erected.

The most interesting one is the rotating magnetic field (RMF). When electrically balanced three-phase alternating currents pass through a stationary mechanically balanced three-phase coil winding, RMF is found in the domain of these coils [7].

RMF is a field or flux with a constant amplitude whose axis continuously rotates in a plane at a specific speed. If a permanent magnet is arranged to rotate, it generates an RMF.

The current-carrying windings generate a magnetic field or flux. Through the interaction of the three fluxes created by the three-phase supply, the resultant flux maintains a constant magnitude and rotates in space without the windings themselves physically rotating. This type of field is known as RMF.

RMF can be characterized by three factors: magnitude, direction and speed. In this paper, only the speed of RMF will be considered. RMF speed (angular speed) is the synchronous speed ( $n_s$ ).  $n_s$  can be defined as:

$$n_s = \frac{120 \cdot f}{2p} \quad (1)$$

Where ( $f$ ) is the frequency and ( $2p$ ) is the total number of poles. So, if a power frequency 3-phase current (50 Hz) passes through 4-pole wound 3-phase coils, RMF will have a synchronous speed of 1500 r.p.m.

## III. INTERACTION BETWEEN TWO FIELDS

As shown before, all living organisms are exposed to two types of fields at all times: the electric field, which is perpendicular to every point on the Earth, and the magnetic field, which is parallel to the Earth's sphere along the north-south direction.

A tangential vector represents each of these two fields. The two vectors are perpendicular. The cross product calculates the area between two vectors. Its formula provides the magnitude of the resultant vector, representing the area of the parallelogram formed by the two vectors.

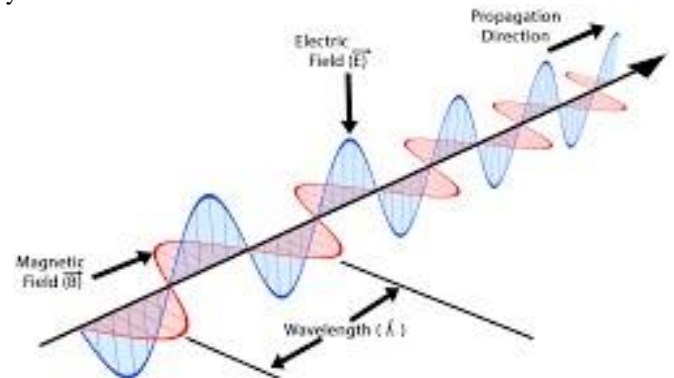


Figure (1): Wave energy flow

The cross product indicates the "direction of wave propagation" or the "propagation vector", as illustrated in Fig. (1). This direction represents the flow of a wave's energy and the movement of a small wave packet, specifically the group velocity. All living organisms are continuously exposed to this energy wave packet.

Currently, the axis of the dipole is offset from Earth's rotation axis by about 11 degrees. As a result, the geographic north and south poles do not align with the magnetic north and south poles. This means the tangential magnetic field vector has shifted by 11 degrees from its original position. Consequently, the amount of energy flow will decrease by this amount:

$$\cos(11^\circ) = 0.981627 \quad (2)$$

This means that all living beings, including humans, will be exposed to about 2% less energy than the natural or cosmic energy that humans are supposed to receive under normal conditions and now, the paper 1<sup>st</sup> question:

**"What are the health effects of exposing humans to about 2% less energy than is supposed?"**

This question is just the first question; it must be followed by another. A complete study is required in this direction.

## IV. WORMHOLES

In this section, the light will be shed on the wormholes. Unlike the previous section, the section will start with the paper 2<sup>nd</sup> question:

**"Is it possible for wormholes to exist on the Earth's surface?"**

**Or within the Earth's atmosphere? i.e. Something similar to terrestrial wormholes."**

And as a subsequent question:

**"Can it be manufactured?"**

Although we know so far that wormholes are not terrestrial but somewhat extraterrestrial, or at least they connect the Earth with other planets and stars, let us try to answer the two previous questions. The starting point is the RMF synchronous speed. As in Fig. (2), the figure shows the relation between angular velocity vector ( $\omega$ ) and speed vector ( $v$ ), and hence:

$$v = \frac{\pi \cdot n_s}{30} = \frac{4 \cdot \pi \cdot f}{2p} \quad (3)$$

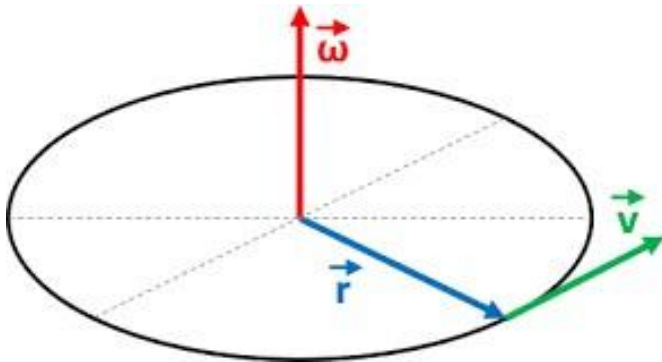


Figure (2): Angular velocity and speed vectors

From Eq. (3), and as it will know, speed of light =  $c = 3 \times 10^8$  m/sec., the frequency required of the current that principle to generate an RMF with a light speed of  $3 \times 10^8$  m/sec. will be:

$$f = \frac{2p \cdot v}{4 \cdot \pi} \quad (3)$$

If  $2p = 2$ ,  $f$  will be equal to  $\approx 48$  MHz. If  $2p = 4$ ,  $f$  will be equal to  $\approx 96$  MHz. If,  $2p = 4$  is proposed, the exact frequency value will be = 95.45454545... MHz. So, if the frequency  $f = 95.45454545$ ... MHz is injected into the three-phase windings' conductors, and the RMF wave's speed will be exactly the speed of light. Now, a new 4<sup>th</sup> question will be generated:

**"If  $f > 95.454545$ ... MHz, the speed will be greater than the speed of light; what will happen?"**

Now, let us discuss the situation of wormholes. The idea of wormholes or Einstein-Rosen bridges (ER bridges, 1935) can be described as connections between areas of space that can be modelled as vacuum solutions to the Einstein field equations or the wormhole right here on Earth that connects Earth with another planet or other universe as shown in Fig. (3), or as we'll **suppose the 1<sup>st</sup> proposition:**

**"The wormhole right here on Earth that connects an Earth's place with a different another Earth's place too"**

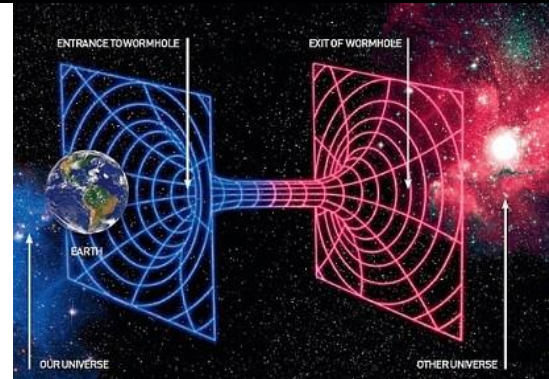


Figure (3): Wormholes

To prove this proposition, Fig. (4) shows a demonstration of the strange and amazing signs of farm fields, a small portion of which is shown. These fields are normal agricultural fields, and suddenly, the farmers find them like this. Due to the science fiction movies that dominate the minds of many people, some attributed this to the landing of flying saucers (unidentified flying objects -UFOs -) in these fields, causing these signs.

The explanation of these signs is easy. Some scientists can convert pictures of these signs to music. Hence, and vice versa, if we suppose a concert playing a musical piece at a particular moment. At this moment, due to the huge frequencies that already exist in the air surrounding us, and at approximately 96 MHz, a wormhole is opened that can carry this musical piece from a point on Earth to another point at another place in the Earth and print it as a sign on land.

The explanation of these signs is easy. Some scientists can convert these signs' pictures to music. Hence and vice versa, if we supposed that a concert playing a musical piece at a certain moment. At this moment and due to the huge frequencies that already exist in air surrounding us, and at approximately 96 MHz, a wormhole is opened that can carry out this musical piece from a point on Earth to another point at another place in the Earth also and printed it as a sign on land.



Figure (4): Farm fields' signs

Let's discuss the possibility of an electrical conductor carrying this significant frequency, 96 MHz. According to the American Wire Gauge (AWG) Conductor Size Table, the relation of



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maximum frequency for 100% skin depth against conductor diameter is shown in Fig. (5). The vertical axis is the conductor diameter in [mm]. The horizontal axis is the frequency in [Hz].

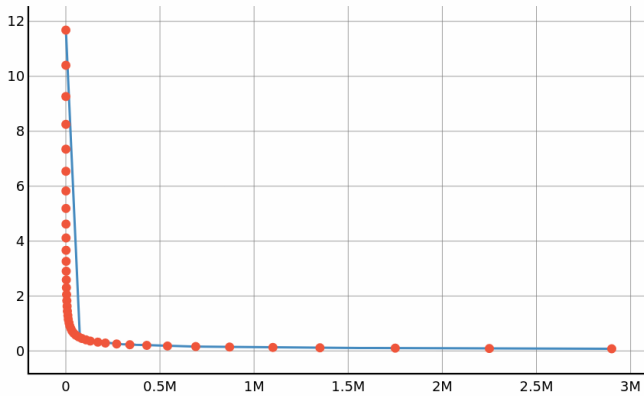


Figure (5): Conductor diameter vs frequency

Using the exponential curve fitting [8], the relation can be expressed as:

$$d = \frac{128}{f^{0.496}} \quad (4)$$

At  $R^2 = 0.99991$  and adjusted  $R^2 = 0.9999$ . From Fig. (5), It's clear that with the increase of Hz, the conductor diameter will be less and going to saturate. If a more precise model were required, the saturated tail of the previous curve (just 15 points) would also fit under the exponential curve. The relation can be expressed as:

$$d = \frac{122}{f^{0.494}} \quad (5)$$

At  $R^2 = 0.99983$  and adjusted  $R^2 = 0.9998$ . Fig. (6) will illustrate this relation.

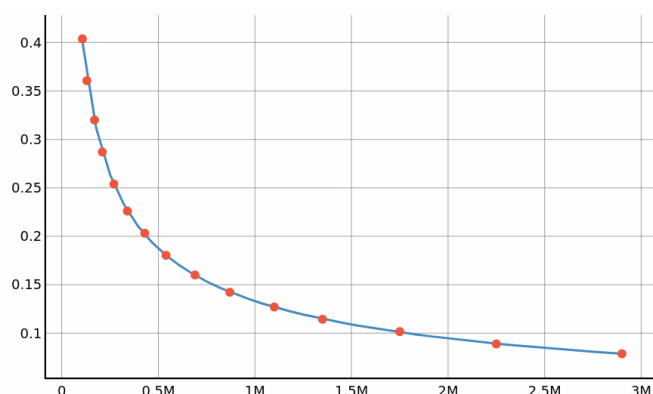


Figure (6): Conductor diameter vs frequency

From Eq. (5), and at a frequency of  $f = 95.45454545... \text{ MHz}$ , the diameter will be  $0.013942... \text{ mm}$ . From Eq. (4), and at the same frequency of  $f = 95.45454545... \text{ MHz}$ , the diameter will be  $0.0141... \text{ mm}$ . So, an electrical conductor with a diameter of  $0.01 \text{ mm}$  will be sufficient to carry out this frequency and possibly

more significant frequencies. From a practical point of view, a Titanium conductor with these minimal diameters is available nowadays.

## VI. WHAT NEXT?

This article concluded that it is possible to create a rotating magnetic field that can rotate at the speed of light or even faster than light. From this standpoint, this can be interpreted as an entrance to a wormhole or a wormhole tunnel.

But what next? It is not possible at the present moment to imagine the amount of mass that can pass through this tunnel or the amount of energy required for that. Likewise, guessing whether the change will be in space is difficult. Or will it be a change in time? In other words, where will the transition be if the difference is in space? And if the change is in time, will it take us to the past or the future?

All of this will require an extensive research cycle that begins with creating this wormhole in the laboratory and proving its possibility, then addressing the finding of answers to the remaining questions, especially with many scientists and laboratories worldwide working in this field [9].

## VII. CONCLUSIONS

In this paper, the correlation between electric, magnetic and electromagnetic fields with biophysics and modern physics is proposed, studied, and discussed, and the results of these discussions are presented. Concerning biophysics, the paper proposed a critical study that must be formulated to find the effects of deviating the energy wave propagation in all living beings' surroundings. Regarding modern physics, the paper proposed a vital study that must be formulated to construct terrestrial wormholes.

## VIII. REFERENCES

- [1] J. Potters, *Going Beyond the World of Atoms: Heinrich Hertz and the Electromagnetic Worldview*, Part of the book series: History of Mechanism and Machine Science ((HMMS,volume 42)), pp. 331–359, Springer, 2025, [https://doi.org/10.1007/978-3-031-26174-9\\_15](https://doi.org/10.1007/978-3-031-26174-9_15).
- [2] Alexander Bershanskii, *Randomization of the Earth's Magnetic Field Driven by Magnetic Helicity*, Physics of the Earth and Planetary Interiors, Vol. 356, 2024, <https://doi.org/10.1016/j.pepi.2024.107250>.
- [3] Sayak Ray, Batakushna Senapati, Bhaskar Kundu and Kosuke Heki, *A Global Perspective on the Interaction between Earth's Magnetic Field and Ionospheric Disturbances*, Advances in Space Research, Vol. 74, No. 8, pp. 3569-3582, 2024, <https://doi.org/10.1016/j.asr.2024.06.072>.
- [4] Haoting Wu, Peiling Cui, Pengtao Tian, Haifeng Zhang and Xiuqi Zhao, *Magnetic Field Interference Suppression Method based on Phase-Compensation Vector Resonance Control in Near-Zero Magnetic*

<https://jeats.journals.ekb.eg/>

- field Environment, Measurement*, Vol. 240, 2024,  
<https://doi.org/10.1016/j.measurement.2024.115548>.
- [5] P. A. Varotsos, N. V. Sarlis and E. S. Skordas, *Direct Interconnection of Seismicity with Variations of the Earth's Electric and Magnetic Field before Major Earthquakes*, Europhysics Letters (EPL), Vol. 146, 2024, <https://doi.org/10.1209/0295-5075/ad37d6>.
- [6] Michael J. Rycroft, Anna Odzimek and R. Giles Harrison, *Determining the Time Constant of the Global Atmospheric Electric Circuit through Modelling and Observations*, Journal of Atmospheric and Solar-Terrestrial Physics, Vol. 260, 2024, <https://doi.org/10.1016/j.jastp.2024.106267>.
- [7] E. Cecerska-Heryć, M. Gliźniewicz, B. Grygorcewicz et al, *The Effect of a Rotating Magnetic Field on the Antioxidant System in Healthy Volunteers*, Sci. Rep., Vol. 14, 2024. <https://doi.org/10.1038/s41598-024-59391-y>.
- [8] W. Sabry, *A New Regression Algorithm using the Least Squares Method*, International Journal of Mathematical Education in Science and Technology (IJMEST), Vol. 30, No. 3, pp. 419–472 1999, <https://doi.org/10.1080/002073999287941>.
- [9] J. Dimaschko, *Creating a Wormhole by Magnetic Field*, unpublished, 2024, <https://doi.org/10.13140/RG.2.2.16944.16645>.