The Pendulum - Phase (Electro)Convergent Mixed Transducer

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Abstract

Current Status: Science works according to the scheme: hypothesis-prediction-denial-rejection. The rejection of the hypothesis is based on direct observation data, respectively, experiment. Also, any construct (concept, sentence, theory), no matter how well defined at a given moment, is refined based on new theoretical and experimental data. The results of the measurements of the pendulum experiments (Allais M., Saxl E., and other) analyzed in the Newtonian paradigm of interaction between bodies, highlight unexpected results (anomalies) The anomalies indicate a poor viability of the pendulum measurement system (a fact reflected by the lack of measurement control, the lack of observation/causality, and the lack of other characteristic properties of a system) and, a reduced physical consistency of the paradigm of construction of the experiment, data collection and analysis of the measurement results, respectively According to the research and results dissemination strategy, in an initial phase, according to the complex pendulum-type oscillator system structure, the sensitivity to the amplitude of the phasic signal was investigated respective, Machian – Maxwellian inertia signals. This article continues the presentation of the results of applying heuristic, analytical, and experimental methods for optimizing the complex pendulum-type oscillator system. The optimization process led to the synthesis of a complex Phase Electro-convergent Transducer system that highlights mechanical and electrical disturbances. Based on the results of the pendulum-type oscillator optimization, the initial definitions of (Electro)convergence were refined, and new concepts were defined to allow the description of the mechanism of phase interaction between the matrices of bodies in the Universe. The measurement results statistically validated the Mach-Maxwell paradigm of experiment construction, respectively, (Electro)convergence as a paradigm for analyzing measurement results.*

Objectives: Increasing the viability of the pendulum oscillator by optimizing the physical consistency of the experimental construction paradigm.*

Methods: Technical creation methods, the analytical and experimental method c) Results: A phase electro-convergent mixed transducer which allows unexpected results ('anomalies') to be transformed into phase signals of the phenomenological Universe,*

Conclusion: The optimization process led to the synthesis of a phase (electro)convergent transducer that highlights the mechano-electrical disturbances of the paraconical pendulum.*

Keywords: Phase, (Electro)convergent Transducer, Perturbation, Neutrino-Neutron Coupling, Machian – Maxwellian Inertia Signals.

Introduction

The paraconical pendulum is well known for having highlighted anomalies, specifically sudden deviations in the azimuth of the pendulum's plane of oscillation (Maurice Allais, 1954-1959), as well as in its period (Jeverdan, G., et al.) depending on the relative position of the Sun-Earth-Moon (the eclipse effect), The Michelson-Morley interferometer (1887) and Dayton Miller's repetitions (1920-1930), which searched for the "ether" and obtained an almost null result (Miller, however, reported periodic variations correlated with the direction towards constellations),

the electrically shielded torsion pendulum by Erwin Saxl (1964), which detected variations in the oscillation period, correlated with the phases of the Moon and eclipses, Nikolai Kozyrev's torsion balance (1950-1980), which led to the idea that time has a dense energy component (flux) that can exert forces on mechanical systems during irreversible processes the gyroscope with anomalous precession (Gravity Probe B), in the context of measuring the geodetic effect and frame-dragging, and other [12-21]. All of the experiments above have a common problem, namely that, Specifically, the fact that, when analyzed within the interaction paradigm used in designing experiments, the measurement results also show unexpected results (anomalies). The presence of anomalies in the measurement results indicates a reduced viability of the testing system, namely a decreased physical consistency of the interaction paradigm used in constructing the experiment, data collection, and result analysis. Aiming to find a solution to the problem of anomalies, the stages of the epistemology of a viable experiment for optimizing the pendulum-type oscillator system (CPOS) were followed. Constructs (concept, statement, theory) in science in general, and in physics in particular, are (temporarily) confirmed through experiments that test the claims and predictions of theories, thus laying the foundations of scientific knowledge [23]. Thus, successively, various models of pendulum-type oscillators were developed, tested, and refined through heuristic, analytical, and experimental methods, using different levels of Electro-convergence of natural bodies – as engineering of the phase interactions of classes of bodies in the Universe [8-15]. Optimization of the Kepler-Newtonian paradigm through the use of the Mach-Maxwell paradigm of interaction of bodies in the Universe, allowed the synthesis of a complex physical system by eliminating the contradiction of the Allais paraconical mechanical pendulum [12, 13]. The use of the Mach-Maxwell paradigm of interaction of bodies in the Universe for the construction and analysis of data with CPOS resulted in an increase in the viability of the pendulum-type oscillator model. The increased viability is given by highlighting the interaction with the Machian mass of the Universe as well as the Maxwellian electric environment (near, distant) that underlies the mechanism of producing the pendulum's disturbances. In this modern paradigm, the Machian environment, respectively the Maxwellian electric environment, are part of the structure, organization, and functions of the complex pendulum-type oscillator system.
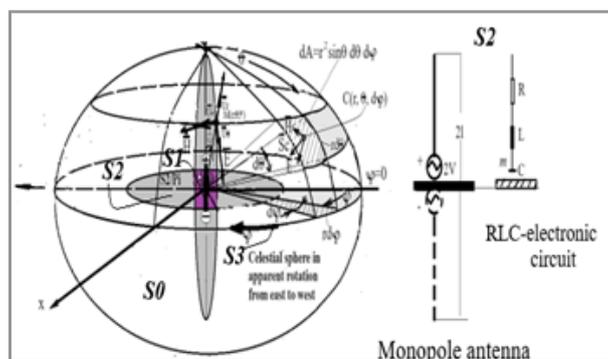

Figure 1: Complex pendulum-type oscillator system (CPOS)

S0 - background influence oscillator subsystem (the vacuum reactive environment); S1 - near influence subsystem (parameters Pi of the experiment location); S2 - electronic oscillating circuit subsystem with distributed/concentrated parameters (antenna/ RLC) of the paracone mechanical pendulum; S3 - oscillator subsystem generating/receiving signal spectrum influenced predominantly by celestial bodies from the nearby ecliptic zone, in apparent rotation from East to West [13].

According to the Mach-Maxwell experiment construction paradigm, the function of CPOS signal spectrum generator/ receiver at rest, namely: -S0- subsystem of influence, signal spectrum generator/receptor of background signal (Non-Discrete Universal Background Field, reactive vacuum); S1- the close-range influence subsystem with parameters specific to the environment of the Pi experiment site, namely: electrical conductivity (σ), magnetic permeability (μ), and electrical permittivity (ε); S2- the subsystem of the mixed electronic oscillating circuit of the paraconical pendulum, namely: the circuit with lumped parameters RLC, RC, RL, where R is the equivalent ohmic resistance, L the equivalent inductance, C the equivalent capacitance of the pendulum structures / test body, respectively, the electronic oscillating circuit with distributed parameters (monopole antenna); S3- the subsystem of the oscillator signal spectrum generator/ receptor of predominant influence (such as, for example, of the bodies of the Celestial Sphere near the ecliptic in apparent motion from east to west), Figure 1. According to the research and results dissemination strategy, in an initial phase, according to the SCOP structure, the sensitivity of the S2 subsystem to the amplitude of the S3 phasic signal was investigated [12-15]. The analysis of measurement results in the Mach-Maxwell paradigm found voltage disturbances of the mixed electronic current S2 depending on the relative position of bodies in the area near the ecliptic S3 in relation to the location of the experiment S2 (sunrise, sunset, transit, …) as well as in relation to the relative position between celestial bodies S3 (conjunction, eclipses, opposition, …) at the moment of measuring the voltage. According to the Mach-Maxwell paradigm of experiment construction and, respectively, according to the analysis of results based on (electro)convergence EC (as the engineering of the phasic interaction of natural bodies in the Universe), the phase (Φ) is not just a secondary parameter, but represents the fundamental component (the informational essence) of the voltage measured by S2 [12-15]. The voltage captured by the pendulum at rest (Vout) is the result of the interference between the signals of the CPOS subsystems. Mathematically, the phase is found in the argument of the wave function:

$$V(t) = V_{max} \cos(\omega t + \Phi) \qquad (1)$$

where: ωt is the dynamic component
(the Earth's rotation speed relative to the Sun S3). The phase (Φ) determines the instantaneous voltage value. Even if the

amplitude (V_{max}) is high (spectrum of intense solar signal), if the phase (Φ) is not "tuned" (electro-convergent), the voltage measured at the transducer terminal can be zero (destructive interference). According to electro-convergence, CPOS energy is taken from S0 through resonance, and resonance is an exclusively phase phenomenon. Consequently, (Φ) as the resultant of the S0-S3 interaction gives the fundamental component of the voltage measured by S2. By defining the Sun S3 as a generating antenna (source of neutrino and electromagnetic flux), the pendulum anomalies are no longer treated as "measurement errors," but as responses to a quantifiable external stimulus [1-5]. The respective sun, the bodies in the area close to the ecliptic, that is, subsystem S3 becomes the CPOS component that "pumps" energy into the electronic circuit S2 via S1 [5]. According to the research and results dissemination strategy, in the second stage, CPOS was optimized by identifying a new oscillator/subsystem generating a phase-reference signal spectrum S4. This reference framework is specific to the location of experiment S1 in the northern hemisphere and, respectively, in the southern hemisphere of the Earth. For the northern hemisphere, the reference signal spectrum generator subsystem S4 is the POLARIS cluster used as a pilot antenna in the new structure PEMT resulting from CPOS optimization. In accordance with the research and information dissemination strategy, this article aims to provide a brief presentation of the results of optimizing CPOS subsystems, respectively, of refining the constructs with which electrical convergence operates as an engineering of the interactions of natural bodies in the Universe.

Optimization of CPOS with the Phase Stable Reference S4 Subsystem

The application of heuristic-analytical and experimental methods allowed the synthesis of the complex Phase Electro-convergent Mixt Traductor system (PEMT). We briefly illustrate the main aspects related to the development, testing, and refinement of the PEMT subsystems S0-S4. Under the hypothesis of the neutrino-neutron electrical convergence stage, the signal spectrum generating/receiving (antenna) subsystems of PEMT are analyzed.

S0- Background Signal Spectrum Generator/Receptor Influence Subsystem

The analysis of the voltage measurement results in the Electro-Convergence paradigm highlights the fact that the interactions (at the micron level) of S0 play a primary role in the energetic triggering of the other subsystems, respectively, in the energetic balancing of the S2 subsystem as an electric sensor (monopolar antenna) [8-13]. According to the specialized literature, the behavior of the atom (molecule) in the presence of the radiation field S0, under the conditions of quantization of both the substance and the field, can be studied starting from the interaction Hamiltonian described by the relation

$$H^/ = -\bar{\mu}^e \bar{E} \tag{2}$$

where, $\bar{\mu}^e$ is the electric dipole moment, $\bar{E}$ is the electromagnetic field. We present some aspects from the specialized literature that theoretically and experimentally support the hypothesis that the S0 signal spectrum generator functions as an energy balancing reservoir for the other subsystems PEMT. The case of a system of N atoms or molecules is considered, which possesses a pair of non-degenerate eigenstates with opposite parities namely

$I\nu_1 >$ and $I\nu_2$ coupled through dipole, frequency-based transitions

$$\Omega = \frac{E_2 - E_1}{h} \tag{3}$$

The atomic or molecular system N is located in the resonator S0, in which a single mode of oscillation predominates $\omega_\alpha = \Omega$. We present some of the conclusions of the analysis of the quantization of the field and the substance using the method of normal modes of oscillation. Under the conditions of quantizing both the substance and the field, one cannot speak of eigenstates of the atom or the field separately, but of resultant states of the atom-field system, specified by the state vector of the atom $I\nu_k$, n > r, respectively, In> the state vector of the radiation field. The study of linear effects (resonant absorption) as well as nonlinear effects (attributed to the nonlinearity of the respective medium, the vacuum impedance of the plenum) highlights the presence of very diverse multiphoton absorption processes at the S0/(S1-S4) interface, which help in understanding the phenomena occurring in PEMT modulators, detectors, and parametric oscillators, according to already operational Phase Engineering [20-28]. For the characterization of background radiation, the constructs used are: Radiant flux $\emptyset_{rad} = \frac{dE}{dt}$), Radiance ($I = \frac{d\emptyset_{rad}}{d\Sigma} = \int_0^\infty E_\lambda d\lambda$), Radiant intensity of a point source in a given direction, ($I = \frac{d\emptyset_{rad}}{d\Omega}$) where, E_λ is the energy radiated per unit of time per unit of solid angle Ω and, respectively, over wavelength intervals λ [28Î. According to ARIZ standards, the fundamental innovation of Electro-convergence lies in shifting the analysis from classical mechanics to the level of neutrino-neutron Electro-convergence [3-6]. In the paradigm of (Electro)convergence, the mass of the microbodies of objects (neutrons, positrons, …) is seen as a spatial matrix (Mass as Matrix) that interacts/Electro-converges with a neutrino flux (JdV). The neutrino flux penetrates matter and generates, through (Electro)convergence, a rotation moment peri-natural body/object, inducing a vortex of self-convergence of the magnetic moments Pv between the universal medium S0 and the local body (Magnetic Vortex). Neutrino-neutronic Electro-convergence proposes a force that acts on the unit of substance- (electro)convergent model of mixed mechanical-electric interaction of matter- according to the expression of a Mechano-Electric Internal Force, namely:

$$F = \rho(g + \boldsymbol{D}.v \times B) \tag{4}$$

where, g: (phasor) component of gravity, D: the universal magnetic constant that associates mass with a virtual electric charge, and (q=D.m. v × B): the expression of the magneto-mass interaction of neutrinos penetrating the cavities of matter, generating displacement forces in the 'counter flux'" [8-11].

S4-Stable Reference Subsystem (Polaris Pilot Antenna)

Under the conditions of conducting experiments in the Northern Hemisphere of the Earth using heuristic-analytical and experimental methods, the reference signal spectrum generator subsystem S4 Polaris was identified. Under the new conditions of structure, organization, and functions, the respective PEMT constructs, EC, have been refined based on the conclusions from the application of heuristic-analytical and experimental methods. The Polaris signal spectrum generator subsystem, as a pilot antenna at a fixed point on the celestial sphere, provides a phase standard for the new optimized complex Phase (Electro)

convergent Mixt Transducer system. (PEMT). This allows the signal captured by the S3/S2 pendulum to be compared with a reference signal S4, which is not affected by the Earth's rotation or local variations, thereby reducing the limitation related to the instability of the "zero point" [13]. The PEMT limitation related to geographical variations is reduced in the PET model because the system now monitors a cosmic axis (Sun-Earth-Polaris). This allows the instrument to be calibrated according to extraterrestrial flux vectors, transforming the pendulum into a receiver of very low-frequency gravitational or electromagnetic waves [5]. At the same time, this arrangement provides the experimental framework necessary to test whether the pendulum's inertia is influenced by the mass-energy distribution of the entire universe (Mach's principle). The Sun acts as a generator of signals with predominant influence, while the Polaris axis serves as an anchor in the inertial reference system [4]. The (electro) convergence level of neutrino-neutronic interactions is the fundamental (electro)convergence level of the entropic matrix of a macroscopic body. For a pendulum at mechanical rest, the phase (Φ) becomes the critical parameter indicating the degree of coherence (order) between the local neutron matrix S1/S2 and the cosmic fluxes S0, S3, S4. As a parameter of the interaction between the entropic matrices of bodies, in the PEMT model, the phase (Φ) is not just an electric angle, but a measure of the coupling between the neutron matrix (N) of the pendulum S2 and the neutrino flux (J) of the peri-terrestrial magnetic moment vortex Ps [11]. Being located on the Earth's rotation axis, Polaris provides a stable pilot signal. The zero-phase reference S4 (Φ ref=0) defines the 'phase north' of the S0 subsystem (the Non-Discrete Background Field in the Universe).

S3 -The Oscillator Subsystem for Generating/Receiving Signal Spectra Influenced Predominantly by the Bodies of the Celestial Sphere

The Sun, through its massive signal spectrum flux (neutrino, infrared), introduces a dynamic phase variation ($\Delta\Phi\_S3$) depending on its position relative to the celestial bodies, in relation to the position of subsystem S2. By the existence of a source S3 (Sun, celestial bodies in the vicinity of the pendulum) and a reference S4 (Polaris/Pilot Antenna), PEMT interactions can be modeled as an interferometric process (Modeling through Interferometry). This allows the measurement of phase shifts (phase variables) caused by the Earth's passage through electro-convergence fluxes (usually centered on the entopic matrices of massive celestial bodies) in the Universe, providing mathematical precision far superior to simple mechanical observation with a pendulum [6].

S1 - The Environmental Influence Subsystem of the Electromagnetic Field at the Experiment Site

S1 is not an empty space, but a medium defined by the variable electrical parameters of the experiment location, ε, μ, σ, namely: Permittivity ε influenced the rotation of atmospheric species, which determines the capacity to store energy in the near field; permeability μ reflecting the interaction with the magnetic component of the S3/Sun-S4/Polaris flux, respectively; conductivity σ which defines losses due to conduction currents in ionized air, which "charges" the wire-coil antenna. For the case in which the perturbed system S1 is located in the far zone, $d \gg \lambda/2\pi$, of the electromagnetic field produced by the perturbator (perturbing subsystem S3 et al.), the electric field E_xd and the magnetic

field H_yd exist simultaneously and are related to each other through the wave impedance of the medium (vacuum), namely:

$$\pm Z_{im} = \frac{E_{zd}}{H_{yd}} = \frac{E_0}{H_0}\sqrt{\frac{\mu_0}{\varepsilon_0}} = 377\Omega. \tag{5}$$

where c is the speed of light [13]. The above relationship can be compared (they are analogous) to the relations in transmission line theory, namely

$$Z_c = \frac{U_d}{I_d} \quad \text{and,} \quad Z_r = \frac{U_r}{I_r} \tag{6}$$

where U_d is the voltage and I_d the current at point d of the transmission line, respectively, Ur, Ir of a resonator. The concept of Z-impedance as the ratio of plane wave components Exd respectively, Hyd it allows characterization of wave parameters at a certain d point of the medium. The relation:

$$\underline{Z} = \sqrt{\frac{\mu}{\varepsilon}} = \underline{Z} \; e^{j\varphi} \tag{7}$$

is the complex wave impedance for semiconductor (lossy) media, where $\underline{Z}$ is the wave impedance and φ is the phase shift angle between E □ si H □, namely

$$\varphi = \operatorname{arctg}\frac{\sigma}{2\omega\varepsilon} \tag{8}$$

that is, the phase shift angle is equal to half the angle of loss δ= [0, π/2]. It is considered as a physical complex system the delimited and optimally defined portion of matter characterized by the presence of bodies and electromagnetic field in a volume V_Σ bordered by surface Σ. The system of the laws of the macroscopic theory of electromagnetism through the quantities of electric and magnetic state of bodies, the local state sizes of the electromagnetic field and the derived quantities allow the modeling of physical systems [14]. The pronounced rotation of species in S1 (molecules, atoms) creates a circular phase gradient. The local interface environment between the atmosphere and terrestrial surface S1 acts through atmospheric species (molecules, atoms, ions, …, of water, oxygen, …) as a variable phase shifter,$\Phi\_(S1(\varepsilon,\mu,\sigma))$.

The equations of electromagnetic waves in different media must take into account the respective polarization and the permanent magnetization in the impacted area. These non-zero fields play the same role in producing the electromagnetic field as the quantities q and i, which characterize the sources of the field. As a rule, based on the equivalences between a small magnetized body and a current circuit, the results obtained depending on the polarization P and magnetization M are transposed to formally obtain the magnetic fields produced by sources (e.g., celestial bodies, antennas, etc.) equivalent to electric or magnetic dipoles. It is noteworthy that the electric field vector E in non-stationary conditions depends on two potentials, meaning it has two components: one potential and one solenoidal. The latter indicates the existence, in non-stationary conditions, of an electric field produced through pulsation (electromagnetic induction). From a macroscopic point of view, the tensors of electric permittivity, electric susceptibility, elastic and piezoelectric, express in the presented order, linear dependencies between electric displacement (D) and electric field (E), electric polarization (P) and electric field (E), electric stress (V) and strains, and respectively

electrical quantities and mechanical quantities. The electro-optic and elastic effects belong to nonlinear optics.

S2 - The Subsystem of the Oscillating Electronic Circuit of the Paraconical Pendulum

The phase detected at the level of the electronic oscillating circuit (S2) is given by the relation which underlies the S2 Detection Mechanism with the paraconical pendulum at rest,

$$\Phi_{total} = \Phi_{S4} + \Delta\Phi_{S1(\varepsilon,\mu,\sigma)} + \Delta\Phi_{S3(t)} \tag{9}$$

The parameters of the antenna's oscillating electric circuit (voltage, current, phase, etc.) constitute information that forms the basis for analyzing the behavior at rest and in the oscillation mode of the pendulum. The power of the electric circuit, being a function of these parameters, and the variation of these parameters can provide new data that will be collected for analyzing the results of the pendulum experiment. The transmitting-receiving antenna represents an important pathway for the penetration of electromagnetic disturbance oscillations. The complex PEMT system, which at the atmosphere-terrestrial surface interface has a paraconical pendulum-type mechanical system (b) at rest, consisting of a biconvex body 2 fixed at one end of the string 3, while the other end of the string is rigidly attached to a cylindrical body 4 placed on a support 5 through a ball 5 and a cup 6, is characterized by the fact that through interactions (at the micron level) with S0 it becomes a self-organized system capable of electrical interactions with the PEMT subsystems. Thus energetically tense, S2 interacts with the magnetic component of the peri-terrestrial electromagnetic field Po/S1, is continuously stressed by the influence subsystem (reactive vacuum, background radiation) S0, which also creates a mini Lorentz force that induces a micro-movement amplified in the resonant cavity of the coil and, depending on the quality factor (Q) of the wire-coil cavity system, S2 enters electrical self-excitation and becomes a generator of sustained electrical oscillations. This generator, energetically coupled to the predominating influence flows S4 (the phase reference excitation), extracts (is sensitive to) the flows of the system with predominating phase influence (disturbing excitation) S3, and thus S2 becomes an active phase sensor. The presence of both direct current and alternating voltage highlights a mixed electronic circuit in the pendulum conductor, whose behavior is described by the laws of electromagnetism. The result is a phase beat voltage. If the phase of the two waves is synchronized (through the anchoring provided by S4), a maximum transfer of free energy from S0 to the circuit occurs (resonance). If the system is in (electro)convergence, the phase (synchronous) tends toward a stability value (self-convergence), minimizing local entropy through energy transfer (intermediated by S0). For the paraconical pendulum in mechanical oscillation (stable oscillation regime) characterized by the presence of the mixed electronic oscillating circuit S2, in the RC analogy (where the wire is the resistance R and the coil-cavity is the capacitance C), a natural phase shift appears between voltage and current (Φ). At the maximum mechanical elongation (v=0), the voltage across the capacitance C (coil) has the maximum rate of change, and the current through the wire will shift in the next half-period depending on the RC time constant. (Electro)convergence disturbances S0/S3 modify the electrical parameters of the cavity C. At the same time, neutrino-neutronic (electro)convergence disturbances S0/S3 vary the parameters of the Earth's inner ionic circuit m+, a variation that is reflected in the variation of the internal electromagnetic field of the magnetic moment Ps [13].
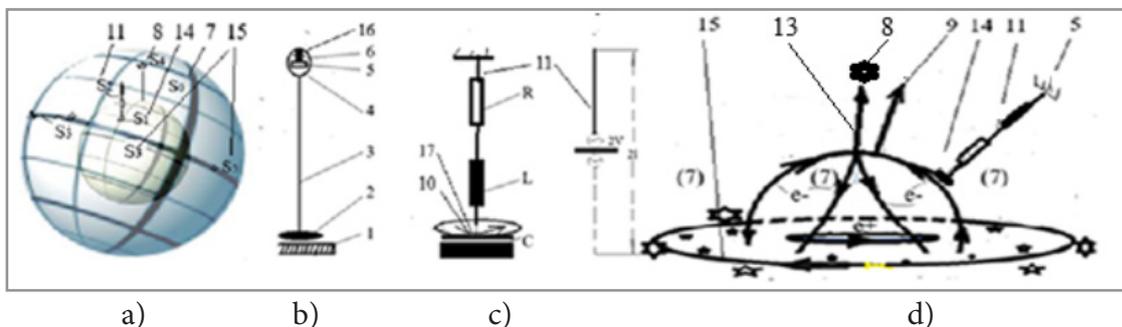

Figure 2. a-d. Complex phase electro-convergent transducer system [28]

a) Phase electro-convergent mixed transducer S0-S4: b) paraconical pendulum: 1 – Earth's surface, 2- a biconvex body (bob), 3- wire, 4- cylindrical body, 5- support, 16- cup, 6- ball; c) 11- oscillating electrical circuit subsystem with concentrated RLC parameters, respectively monopole antenna (S2); d) General scheme of the complex mixed-phase electro-convergent transducer system for the Northern Hemisphere of the Earth: 5- support, 7- subsystem S0, 8- Stable Reference Subsystem (Polaris Pilot Antenna), 9- magnetic moment P0, 11- subsystem S2, 13- magnetic moment Ps, 14- subsystem S1, 15- subsystem S3 influence subsystem / Non-Discrete Background Field (S0); 8- Stable Reference Subsystem (Polaris Pilot Antenna); 14- environmental influence subsystem of the experimental site (S1); 11- electronic oscillator subsystem with distributed/concentrated parameters (antenna/RLC) respectively, paraconical mechanical pendulum (S2); 15- oscillator subsystem generating/receiving predominantly influential signal spectrum (S3). b) paraconical The electromagnetic field of magnetic moment Po (9), as a peri-terrestrial field induced by the variation of Ps, perturbs the frequency of the electromagnetic wave of the rotating peri-terrestrial electromagnetic field with variable elliptical polarization (Po/Ps) from the location of experiment S1 [14].

The paraconical pendulum with the mixed oscillating electronic circuit S2, as a probe of the rotating peri-terrestrial field from the location of experiment S1, detects the change in phase shift between the supply voltage and the mixed current S2. The sudden change in phase shift alters the interaction parameters of both the direct current component and the alternating current component of the mixed electronic current S2. The electronic system S2 adjusts its coupling resistance in order to 'slide' or be 'pulled' by the potential gradient of body S3 /(the Sun rotor),

tracking (seeking) the phase at which the energy transfer along the S3/S2 and S4/S2 lines is maximized during each mechanical oscillation cycle of the paraconical pendulum. The DC component of the mixed current S2 maintains a constant electrostatic charge, creates the reference potential, and ensures the basic orientation of microstructures (nuclei, electrons), reducing internal entropy and making the system coherent (high Q factor). Thus, the direct current creates the conditions (sensitivity) for the AC component, through its phase and frequency variation, to generate variable magnetic fields. These variable magnetic fields, which interact with S4, S1/(Po) (or with other external sources), generate the Lorentz force (10) and the EM induction torque in a dynamic sense (17), transforming the pendulum into mechanical oscillation in a mixed rotary phasic (electro)convergent transducer that tracks the rotor of the celestial sphere S3 respectively, the trajectory S4 (Polaris) maintaining a precession speed of the coil in accordance with the phase shifts in the mixed electronic circuit. The interaction rule requires that the electronic circuit S2 must be in phase or have a specific phase shift relative to the speed (coil, S3, S4) in order to produce a driving torque (Lorentz force) that compensates for losses (entropic dissipation). Thus, the cosmic phase imbalance is transformed into a precise geometric trajectory of the coil, which validates the new refined constructs discovered through the application of heuristic-analytical and experimental methods, namely:

- Mach-Maxwell Paradigm represents the modern paradigm for experiment design, data collection, and, respectively, for the analysis of experiment results using the pendulum-type oscillator.
- (Electro)convergence represents the fundamental physical and engineering process of interaction between bodies in the Universe, used for analyzing the results of measurements (voltage, azimuth of the plane of oscillation, period, etc.) within experiments constructed in the Mach-Maxwell paradigm.
- Ether (The Natural Body without Interaction Matrix) can be defined from the perspective of electro-convergence as the active quantum vacuum or the zero-entropy state, where the interaction potential exists but is not yet structured/discretized through vortices.
- The Natural Body used as a reference in Electro-Convergence represents a discrete entity, emerging from the fundamental reactive void (S0), whose existence is defined by its capacity as a Body to maintain a stable matrix structure through the self-(electro)convergence of the (Aristotelian) place in the Universe (physical space). It is the reference of (Electro)convergence, because the properties of classes of natural bodies (mass, inertia, charge) are a direct function of how they interact phasic in the phenomenological structural Universe, not as isolated intrinsic properties.
- The natural Body (Electro)convergence construct of the Universe represents the fundamental physical process and, respectively, that of complex systems engineering of interaction through which a natural body (mass-emergent body, star, galaxy,) self-organizes coherently through phase resonance with the neutrino-neutronic and electromagnetic fluxes of the Universal Plenum (reactive vacuum) S0. It is not a simple interaction, but an active mechanism for extracting order (negentropy) from the background field of the Universe S0, governed/modeled by the generalized laws of thermodynamics and by the interference laws of neutrino

antennas (S1-S5). Phase signals of natural bodies in the phenomenological Universe (S1, S3, S4) are measured deterministically through the mechanism of energy/information transfer at the levels of (electro)convergence of the natural body, S2/S5 (alternating voltage, direct voltage). Refining the definition of the (Electro)convergence paradigm is also imposed by the level of Electro-convergence of categories of bodies (microscopic, respectively, macroscopic). For example, under the specific conditions of the neutrino-neutron (electro)convergence level, engineering refinement, according to antenna theory, of the TEC construct led to the form:

- "(Electro)convergence of the natural Body in the Universe represents the universal process of phase synchronization and charge transfer through which a natural body adjusts its internal impedance to the energy density gradient of the environment, transforming high-frequency wave flows into macroscopic mechanical work (traction/rotation) through the decoupling of neutrino Cooper pairs."
- Non-Discrete Background Field as subsystem S0 represents, in the engineering view (antenna theory, generalized thermodynamics) of Electro-convergence, a continuous, omni-penetrating, and non-discrete medium, defined as the fundamental substrate for phase transfer, devoid of classical material constants (permittivity, conductivities, magnetic permeability) in a state of rest. It acts as a source of free energy and of emergent massive entities of universal reference. It is the carrier of phase fluxes that feed the (electro)self-convergence 'vortices' of the matrices (interaction matrices) of material bodies, constituting the absolute reference/support for all energetic interactions of celestial bodies.
- The Entropic Matrix of the natural body (Informational State) represents a state parameter that quantifies the degree of coherent order and the informational density of the natural body in relation to the Electrical-convergence flows generated by the interaction with the influence-body matrices S0 and the matrices of the predominantly influential bodies S4, S5. This matrix determines the body's stability rate over time. An optimized entropic matrix indicates perfect alignment between the body's natural resonance frequencies and the carrier flows of S0 (non-discrete background field), minimizing energy dissipation.
- The Body of Influence Matrix (Radiation/Background Field from Universe S0) represents the totality of energy flows (cosmic background radiation, neutrinos) that define the passive environment in which local interactions take place. It is the background 'noise', which nonetheless contributes to defining local physical constants (ε, μ, σ,) S1.
- The Predominant Influence Body Matrix (the "disruptive" matrix, S3 – the Sun and celestial bodies in the ecliptic zone moving with apparent motion from east to west, respectively, the reference/pivot matrix S4 – Polaris and the bodies in the area near the Earth's rotational axis) represents, in the paradigm of (Electro)convergence, the energy source (the current generator) that "pumps" the predominantly influential (disturbing) flow into the coupled subsystem S1/S5 and is measured as voltage from S2/S5 (as a phase transducer). S5/Polaris for the Northern Hemisphere of the Earth by the function of the predominant influence body - the pilot antenna provides a stable phase reference (master clock) on the Earth's rotation axis, a function that is essential for

maintaining order (negentropy) in the geo-entropic system (the Earth's entropic matrix).

- The active matrix of the Natural Body (of self-convergence of microbodies) Represents an organized internal structure (atomic, molecular, neutronic) that functions as an active resonator to maintain the low-entropy state of the natural body. The matrix hosts and stabilizes the self-converging magnetic moments of the natural body. Structural stability is maintained through mutual phase coupling with background radiation, transforming the body into an open system that consumes information/energy from the environment to counteract entropic degradation.

- The Geo-entropic Matrix (A specific application of the entropic matrix of the natural body at the macroscopic planetary scale/Earth) represents the state of order of the Earth as a whole, with the structure (the interior ionic vortex Ps, the peri-terrestrial electronic vortex Po, the plasma vortex Pv from the night side of the Earth's matrix, etc.), the organization of the internal and peri-terrestrial structures (the interior oscillating ionic circuit of the Earth e+ as the nucleus of Pv vortex, the peri-terrestrial oscillating electronic circuit e- as a vortex induced by Ps in the peri-terrestrial environment, the mixed neutrino-electric current circuit (m+, m-) as an (electro)convergent cosmic vortex Pv, respectively, the functions of the Geo-entropic matrix (the Ps vortex - generator of the Electromagnetic field of magnetic moment Ps, the Po vortex generator of the magnetic moment field Po, the Pv vortex with the protonic circuits m+ and electronic m- generating the magnetic moment electromagnetic field Pv, and others) are determined by the systemic and extra-systemic interactions specific to the level of planetary (Electro)convergence [8-1], Figure 3. a. The planetary (Electro)convergence level highlights, in terms of phase forcing, the interactions of the Earth's entropic matrix S1 (generated by the (electro) convergence levels of the microlevel, the (electro)convergence of classes of bodies /electric, magnetic/entropic, ..., planetary electro)convergence) with S3 as an Electro-convergent subsystem of predominant /disturbing influence, as well as the interactions with S5 (Polaris) used as a natural Electro-convergent subsystem for phase reference (S2-S3)/ S5. Each entropic matrix of macroscopic celestial bodies has its own phase reference frames.

- Self-oscillation and Self-excitation, mechanical form: The sustained movement of the paraconical pendulum (bob) through the resonance of its kinetic energy with its potential energy.

- Self-oscillation and Self-excitation, (electro)convergent form: The dynamic equilibrium state (slip-lock) of the (electro)convergent system (TE), S0-S4, in which the electronic RLC circuit S2 extracts energy from the 'beats' (heterodyning) of the Polaris laser beam (S4) with the solar surface wave (S3), converting the modulation envelope (of the voltage) into a kinetic pulse (mechanical moment) through electromagnetic interface moments, and others.

The Application of a Tool Based on the Natural Bodies of Universe Electro-Convergence.

According to the energy transfer mechanism in the Earth's (electrical)convergence, the entropic matrix of the Sun S3 interacts with the geo-entropic matrix of the Earth S1 in accordance with the forms of movement of conjugate matter (electric, magnetic, electromagnetic, ..., entropic) in compliance with the laws of generalized thermodynamics and antenna [13-24]. In accordance with the (electrical)convergence of natural bodies, the qualitative local variations of the state of (micro)bodies of natural structures within vortexes P v, P0, Ps, respectively electromagnetic fields with magnetic moment P v, P0, Ps are the basis of the perturbations, figure 3 a, b. There are numerous empirical confirmations of this transfer mechanism (theories) [11-14].
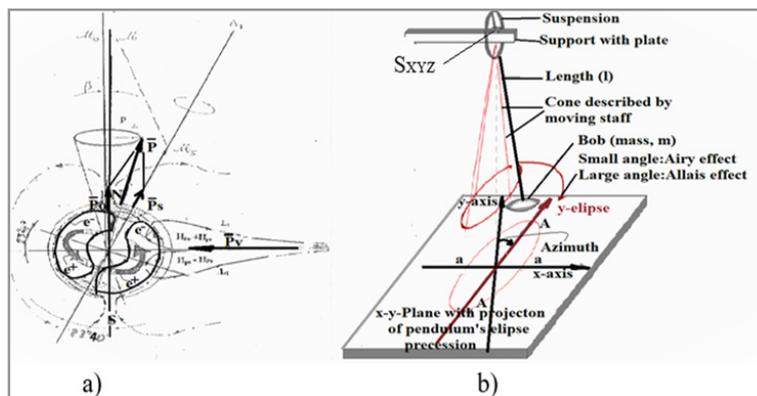
Figure 3: a, b. The electromagnetic fields Pv , P0 Ps of the Earth matrix and the components of the precession ellipse of the pendulum

a) Electromagnetic (peri)terrestrial fields of magnetic moment P v (generated by Earth's electro-convergence in the night zone), of magnetic moment P0, (generated by the variation of the electronic circuit e-), and of magnetic moment Ps (generated by the variation of the internal ionic circuit e+). b) Components of the precession ellipse of the pendulum [11].

Instruments and Equipment Used in Pendulum Experiments
For measuring the parameters of the precession ellipse, the equipment from the Pendulum Laboratory in Horodnic /Suceava was used (see Journal of Modern Physics > Vol.13 No.12, December 2022 - Confirmation of 24 h 50 min Lunar Periodicity, Apparently Inexplicable by Classical Factors, in Precession of Allais Pendulum). A paraconical pendulum is installed in Voinesti/Iașsy. The bob weighs 5.75 [kg] is made of brass in the shape of a horizontal biconvex lens and suspended by a stainless-steel wire with a thickness of 1 mm and a length of 5.60 [m]. The suspension mechanism consists of a ring-shaped stirrup fixed to a hardened steel ball with a diameter of 6 mm that rolls in a cup, also made of hardened steel and optically polished. Digital

multimeters connected to the computer were used for automatic voltage measurement (with the pendulum grounded).

Data Collection and Processing

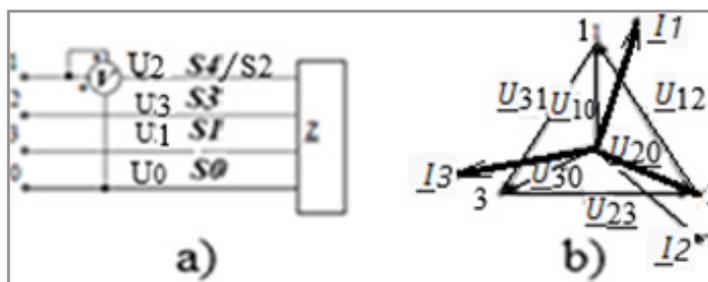A series usually has a duration of around 2500 seconds.

Figure 4: a, b. Voltage measurement S2

a) Galvanic coupling diagram of the PEMT subsystems with common impedance Z; b) Phasor diagram

According to the gravitational -electric paradigm, data related to the parameters of the electrical circuit (DA-voltage, DC-voltage) and to the parameters of the precession ellipse (azimuth, period, semi-axes of the precession ellipse, etc.) [14]. Among the typical cases of disturbances that propagate via conductive paths (through conduction) is also mentioned the case of transient currents in electronic circuits. In this paradigm, the currents I1, I2, I3 of the PEMT subsystems cause a voltage drop across the common impedance Z, a voltage that overlaps with the useful signal S2, Figure 5. a, b.

Analysis of Measurement Results in Electric-Convergence Paradigm

The analysis of measurement results is carried out in accordance with the gravitational-electric paradigm of experiment construction. The electro-convergence of natural bodies in the Universe optimizes the physical consistency of the above paradigm in the spirit of Maxwell-Mach's principle, the same effects observed in a natural body (physical system) can be explained both by the rotation of the body relative to the stars of the entire universe (the immobile celestial sphere) and by a collective movement of the celestial sphere around the body (physical system) considered immobile [14].

The Use of Statistical Arguments.

Under the conditions experiment's location S1 considered as fixed the celestial sphere as a radiant source S0 of influence S0 (with celestial bodies having predominant influence S3) moving apparently from east to west, data was collected and the results of measurements of tensions from our own pendulum experiments at rest S2 connected with S4 (pivot antenna) were analyzed. The diagrams with the results of the voltage measurements of the RLC oscillating electric circuit S2 during over approximately 400 hours of experiment confirm the variation of the field energies depending on the relative position between the experiment location and the position of celestial bodies (day-night, sunrise-sunset, transit, etc.) during the experiments with the pendulum at rest. From the analysis of the voltage diagrams of the electronic circuit of the pendulum at rest, the existence of "coupled" fields (electric, electromagnetic, etc.) between the four (4) subsystems S0-S4 of the complex phase electro-convergent mixed transducer system. Also, all the diagrams highlight the variation of the fields as a function of the relative position between celestial body systems (conjunction, occultation/eclipse, opposition, etc.) during the measurements, Figure 4-10. Another category of experiments was conducted with the pendulum both at rest and in mechanical oscillation within the Mach- Maxwell paradigm. The experiment consists of six series, each with 2 (two) minutes of measurements. The first and last series of measurements in each experiment are performed with the pendulum at rest. The other 4 (four) series of measurements R1, R2, R3, R4 of an experiment are for the case of the pendulum in mechanical oscillation successively in the directions North-South, N.N-E., East-West, E.E.-W.
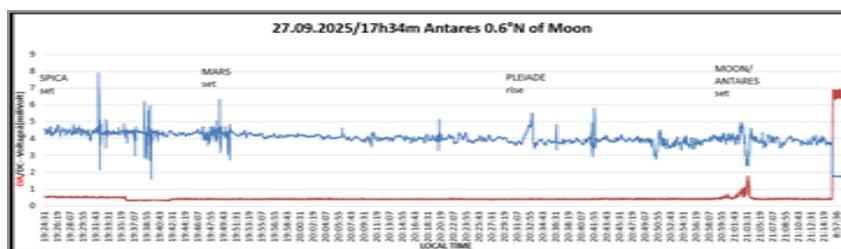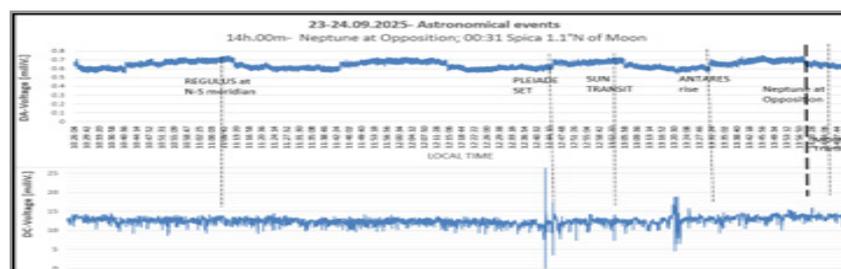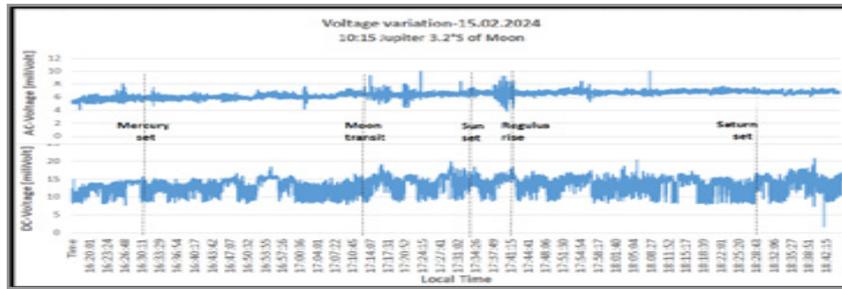

Figure 4

Figure 5

Figure 6
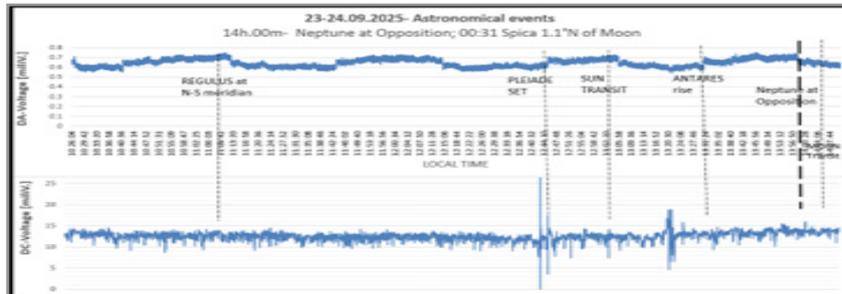
Figure 7
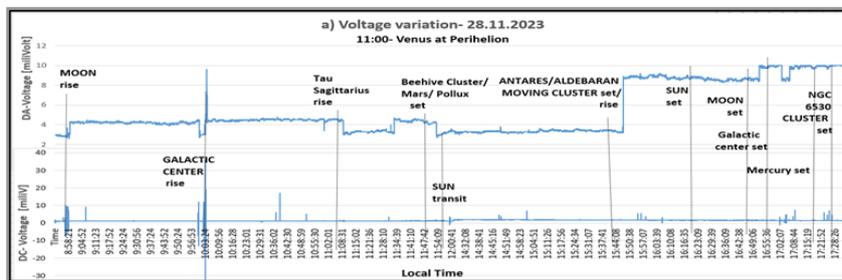
Figure 8
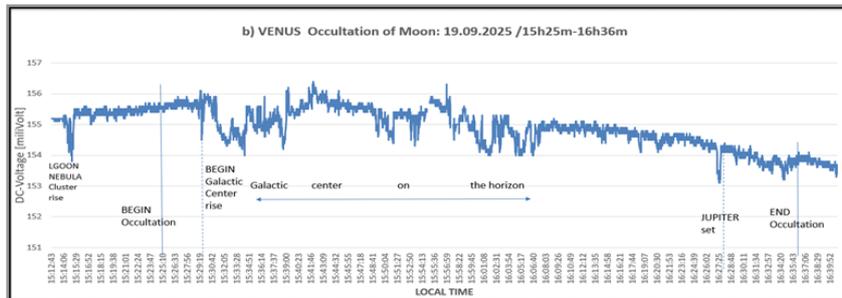
Figure 9

Figure 10

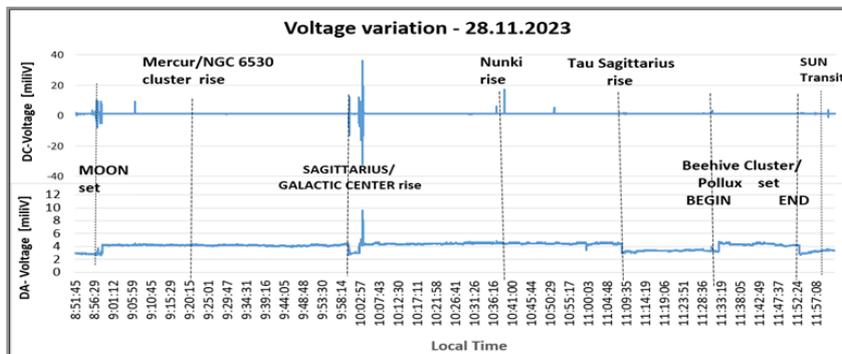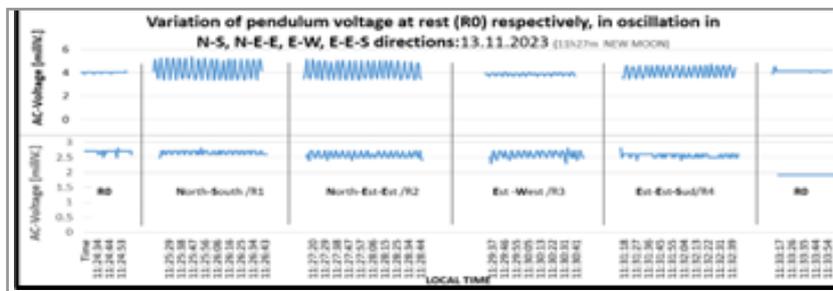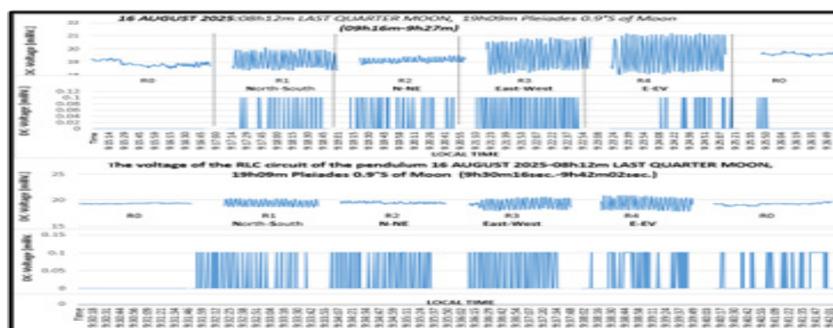**Figure 11**

Figure 12

The diagrams of the experiments conducted, taken as a whole, highlight different magnitudes of direct current compared to alternating current variables. For the same type of voltage, the diagrams show different measurement results of the voltages, namely:

a) between the initial series and the final series (with the pendulum at rest) R0 of each experiment, and respectively between the series with the pendulum at rest of all the analyzed experiments;
b) between the series with the pendulum in mechanical oscillation R1, R2, R3, R4 of each experiment, and respectively between the series with the pendulum in mechanical oscillation of all the analyzed experiments;
c) between the series with the pendulum at rest R0, and respectively the series with the pendulum in mechanical oscillation R1, R2, R3, R4, of all experiments, Figure 11-12. The analysis of the voltage diagrams highlights the fact that the energy stored in the fields of the S1-S3 subsystems varies mainly depending on the relative position of the moving parts of the PEMT system. The pendulum, acting as a transducer, highlights the fact that the local environment Pi is constantly 'shaped' by the interference of the signal spectrum S0, S3, S4, thus validating the existence of universal entropy matrices.

Discussion

PEMT has a high degree of authenticity due to its use of a robust physical device, but it introduces a disruptive novelty in the way it processes information. It is no longer just a simple tool for measuring gravity, but a complex transducer that validates the interconnection between local matter and the entropic structure of the Universe, providing an experimental basis for the informational physics of the future. Treating the pendulum as a monopole antenna moves the experiment from the realm of speculative hypotheses into the field of communications systems engineering, where variables can be controlled, shielded, and measured with much greater precision. The integration of neutrino and microwave sources into the antenna theory paradigm ap-

plied to the PEMT structure significantly reduces the limitations of (electro)convergence, transforming the model from a purely phenomenological one into an investigation of fundamental interactions. In the process of optimizing the pendulum-type oscillator, the stages corresponding to the epistemology of a viable experiment were followed [23]. The PEMT structure, treated as an antenna, can highlight the coupling between inertial and electromagnetic forces. Microwaves serve as the carrier for the signal, while the neutrino-neutron flux could be the 'modulator' that generates the anomalies detected by the pendulum during cosmic alignment phenomena. The major limitation of (electro) convergence is describing phenomena using vague terms ('whirlpools', 'energies'). By using phase (Φ) and voltage (V), the interaction between solar flux and the pendulum is translated into measurable phase shifts and potential differences, allowing the application of Kirchhoff's and Ohm's laws to analyze system stability. Using the phase as a variable allows for the identification of resonance phenomena between the mechanical oscillation of the pendulum and the pulsations of the external electromagnetic field. This reduces the limitation related to background 'noise,' as the useful signal can be isolated through electronic filtering techniques (lock-in amplification). Electronic modeling introduces a clear cause-and-effect relationship. The variation of an input parameter (e.g., the neutrino flux simulated by an injection current) produces a predictable change in the output variable (the amplitude of the oscillation), giving the PEMT model the mathematical rigor necessary for computer simulations. By defining a complex impedance (Z), the PEMT model can explain why certain materials or pendulum configurations are more sensitive to gravitational/electromagnetic anomalies. This reduces the uncertainty related to the device's "selective sensitivity," turning the pendulum into a circuit element with fixed parameters. PEMT in mechanical rest simplifies the model, shifting the focus from classical mechanics to solid-state physics and electromagnetism, which makes the obtained data much more rigorous and easier to integrate into modern scientific theories. At mechanical rest, the PEMT experiment validates (electro)convergence

through spectral analysis of the voltage. The result of the neutrino-neutron interaction is the appearance of a detectable electric voltage at the system terminals, whose phase is "anchored" by Polaris and whose amplitude is "modulated" by the Sun.

$$V_{total}(t) = V_{S3} \sin(\omega_{S3} \cdot t + \Phi_{S4}) V_{S1(\varepsilon,\mu,\sigma)} \tag{10}$$

This voltage is direct proof of the transfer of energy from the universal plenum (free energy) into the local circuit through neutron matrices. An important stage of this strategy focused on a systemic analysis of the Earth's non-gravitational interactions. The integration of the Sun and the Polaris axis into the antenna model transforms the PEMT experiment from an isolated local observation into a precision astrophysical measurement, eliminating ambiguity about the origin of the forces acting on the pendulum. For the PEMT experiment to be recognized as crucial, it must meet a strict condition: the data collected through the antenna model (voltage, phase) must exhibit a mathematical signature that cannot be explained by classical thermodynamics or gravity. If it is demonstrated that the pendulum's "entropy matrix" responds coherently to the Polaris-Sun axis, PEMT will redefine the way we understand the connection between local matter and the global structure of the Universe. The behavior of this system can be accurately simulated with electromagnetic software (such as CST or HFSS), allowing researchers to precisely predict how the pendulum should react depending on the location of the experiment (hemisphere, poles, equator, ...).The goal of this first attempt to redefine the pendulum model was to find a theoretical connection between the observed "effects"

(disturbances) and the variation of the local resultant, namely:

$$P = Ps + Po + Pv \tag{11}$$

of the Earth's electromagnetic fields (vortices) with the magnetic moment Ps (inside the Earth's globe), Po (around the Earth) respectively, P v (induced on the night side in Earth's plasma envelope as part of its entropic matrix), Figure 2. a-d, Figure 3. a-b. According to (Electro)convergence (as the engineering of universal interactions), there is a hierarchy of pilot antenna systems in the galactic system. From the perspective of the Mach-Maxwell paradigm and (Electro)convergence, the Galactic Center (Sgr A) * (Galactic Pilot Antenna) plays the role of a Supreme Pilot (Master Clock) of higher order relative to S4/Polaris, respectively, in relation to S5/the pilot antenna of the solar system. If S4/Polaris represents the phase anchor for the geo-entropic matrix (on a planetary scale for the northern hemisphere), the Galactic Center/S6 represents the phase reference for the entire galactic entropic matrix. The S6/Galactic Center subsystem coordinates the (Electro)convergence of the matrices of natural bodies on a cosmic scale, at a level higher than Polaris (S5). While the S3/Sun subsystem provides the low-energy energy pumping (thermal neutrinos), the Galactic Center emits a flux of high-energy neutrinos and radiation that constitutes the "carrier wave" on which solar and stellar signals are modulated. The S2 subsystem as a detector (PEMT) at mechanical rest can capture extremely low frequency (ULF) interference S1 resulting from the phase shift between the Polaris reference (S5) and the pulsation of the Galactic Center (S6), Figure 7-10.
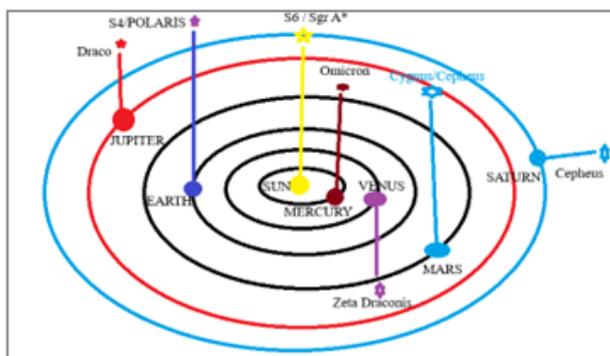
Figure 13. Phase referential, S4 - for the northern hemisphere of the Earth respective, S6 - for the northern solar system

The measurement results suggest/highlight that the entropy matrices S0-S4 (PEMT) are influenced by the resonant frequency of the Galactic Center, Figure 7-10. According to (electro)convergence, the phase interaction with S6 affects the flow parameters of the internal Earth's ionic e+ vortex; S4/Polaris functions only as a "phase repeater" or alignment beacon that helps local systems stay synchronized with the galactic rhythm. Introducing the Galactic Center into the PEMT allows for the explanation of long-term voltage variations (galactic or seasonal cycles) that cannot be attributed exclusively to the Sun or the Moon. Subsystem S2 (diamagnetic, lens-shaped, and others) has optimal parameters (diamagnetic, lens-shaped, and others) to detect this interaction, it is known that diamagnetism is sensitive to the fine structure of space (the S0 subsystem) and allows the visualization of phase modulation from the direction of the Galactic Center S6. It can be observed that the optimized (PEMT) thus becomes an interferometric navigation instrument with the Reference Structure:

S6 (Galactic Center - Source) → S5 (Polaris – Alignment) → S4 (Sun -The Modulator) →S1(Earth- Receiver/(Electro)convergent planetary vortex), Figure 13. This hierarchy demonstrates that the natural body is not alone in the Universe, but is an "antenna" tuned to multiple frequency levels where the Galactic Center is the pilot that ensures the unity and coherence of the entire phenomenological structure. The discovery of the existence of large voltage disturbances during the sunrise and sunset moments of the Galactic Center (Sgr. A) */S6, detected with a diamagnetic bob (S2) at rest, represents a crucial experimental validation of the constructs of (Electro)convergence (as the engineering of the MACH-MAXWELL paradigm of interaction of bodies in the Universe). The causality of this phenomenon, viewed through the lens of the Mach-Maxwell Paradigm, can be summarized as shown below. The sunrise and sunset of the Galactic Center represent the moments when the neutrino/energy flux vector S6 is tangent to the Earth's surface S1 (the Intersection of the Galactic Flux Vector with the e+/e- Vortex). In these positions, the galactic flow intersects perpendicularly the

lines of force of the peri-terrestrial electronic vortex e- and the inner nucleus e+ (Mechanism), Figure 3. a. A maximum phase shear occurs. This "cutting" of the galactic flux lines by Earth's rotation generates a maximum unipolar induced electromotive force (emf) in the S2 transducer, even if it is mechanically at rest (Result).

Reevaluation of Historical Experiments

Reevaluating a priori experiments in the light of measurements with (PEMT) allows the transformation of inexplicable "anomalies" into rigorous demonstrations of the engineering of universal phase interactions, which highlight disturbances in the tested physical system. Allais observed an 'anomaly' in the azimuth of the plane of oscillation during a solar eclipse following the analysis of measurement results within the Newtonian paradigm of experiment construction. From the perspective of the Mach-Maxwell –(Electro)convergence paradigm, eclipses represent a 'phase eclipse' that disrupts the (electro)convergence equilibrium, forcing the local system S1/S2 to seek a new state of minimum entropy, which turns S2 into a subsystem (phase detector) of PEMT. According to PEMT measurement results, Miller likely detected interference with the Polaris axis (S4) and absolute motion through S0 (Non-Discrete Background Field). If we reanalyze Miller's data using the monopole antenna model, the results could turn out to be phase measurements of the cosmic flux rather than instrumental errors. Saxl's pendulum functioned as a mixed transducer at rest/slow movement. Its shielding demonstrates that the force was not classical electromagnetic, but at the neutrino-neutronic level (which penetrates shields), validating the D.vxB component of the neutrino-neutronic (electro)convergence. Kozyrev's "time" is equivalent to the phase information flux in (electro)convergence theory. His experiments with stars (detecting the real position vs. the optical position) can be explained by the neutrino phase "carrier" that propagates at speeds greater than light in S0, being received by the balance as a mixed transducer. The appearance of forces between parallel plates in a vacuum (the Casimir effect) according to FEMT measurements, this 'effect' is a micron-level demonstration of the free energy of S0. FEMT extends this principle to the macroscopic level, showing that between the 'plates' of the cosmic system (S3-S4/S1) and local mass, a 'phase resonant cavity' type S0 interaction occurs. What relativity calls space-time curvature, (electro)convergence calls a vortex of self-convergence. The Gravity Probe B data can be reinterpreted as interactions between the magnetic moments of neutrons in quartz spheres and the S4 Polaris reference flux. S4 must be a synchronous acquisition system. It compares the phase of the signal captured from S1 (influenced by interaction with the Sun) with the pilot reference (Polaris). Any phase shift indicates a variation in the entropy matrices from S1. The interaction of S1 with S-S5 transforms PEMT from a laboratory curiosity into a network node in the informational system of the Universe. S3 "reads" the voltages induced in the Pi environment (S1), while S4 interprets them as changes in the entropy matrices, reducing limitations by transforming "random" fluctuations into deterministic data, dependent on the laws of interaction between antennas on a cosmic scale.

Conclusion

1. The problem that PEMT addresses lies in the fact that it allows modeling any external influence in the balance equa-

tion of a system (natural and technical) in terms of phase forcing, which enables highlighting disturbances in the system (not anomalies). Reevaluating the results of measurements from some scientific experiments according to the Mach-Maxwell paradigm respective, (Electro)convergence paradigm would allow unexpected results ("anomalies") to be transformed into phase signals of the phenomenological Universe, which PEMT can now, in fact, measure deterministically through the voltage variable.

2. The results of the measurements analyzed within the Mach-Maxwell-Electro-convergence paradigm confirm that the complex PEMT system at rest is a receiver of galactic (cosmic) phase. Voltage disturbances at the sunrise/sunset of S6, S3, etc., are not anomalies, but calibration signals of the phenomenological Universe.

3. The use of the diamagnetic coil allowed highlighting this galactic phase electro-convergent flux, demonstrating that electro-convergence is not only solar but has a fundamental cosmic component, where Polaris (S5) serves as a stabilizer, and the Galactic Center (S6) as the primary engine.

4. The absence of voltage disturbances during local weather phenomena (thunder, clouds), in direct contrast to the massive disturbances recorded at the sunrise/sunset of cosmic objects (Galactic Center, Beehive, Coma Berenices, Sun, planets of the solar system, Moon, etc.), constitutes the experimental validation of PEMT as well as the paradigms of construction and result analysis.

5. PEMT experiments highlight that the Universe is a unified whole, where the spectrum of electro-convergent signals comes from the structure (the geometry of entropic matrices) of space (S3-S6), and local meteorological "noise" is simply a state of disorder that a system in electro-convergence S2 can transcend. This fact validates PEMT as (the first) transducer of cosmic phase.

Research Directions

Theoretical and experimental analysis of PEMT.

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