# The Truth on Gravity and Terrestrial Global Warming. Part 1: The Quantum Gravity Field

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MOTTO: "The reality is always not what it seems, the polarization of light creates numberless illusions, especially in science; for the deep understanding of cooperative phenomena a holistic approach must be taken". H. Dumitrescu

***Abstract***: *Although during the last century both experimental and computational technology progress has accumulated solid factual information on the deeper knowledge of our actual world, the previous approaches derived in most cases from the unfinished Einstein's theory of gravity using untrue models for the torsion tensor, have failed to explain the gravitational and precessional aspects, causally connected with the morphogenesis of matter engendered by the bending of light. The torsion/ twisted process during the refrigeration of hot matter (lava) is essential for the understanding of gravitation phenomena as embodied/ gravitized mass occurring at the polarization of light. The Lorentz polarized field concept, (4π/3)P(Ker), associated with a quantum partition kernel, Ker = (1/2, 2/3, 3/4), of the light polarization for radiant energy, mass and gravity, respectively, is generalized for the regenerative matter, including the polarization of time as absolute/orbital time and relative/ precessional time (or the half-life of a regenerative substance). The laws of the Sun like regenerative material systems are given and also the explanations of the quantum origin of gravity along with certain aberration of light in its field are considered.*

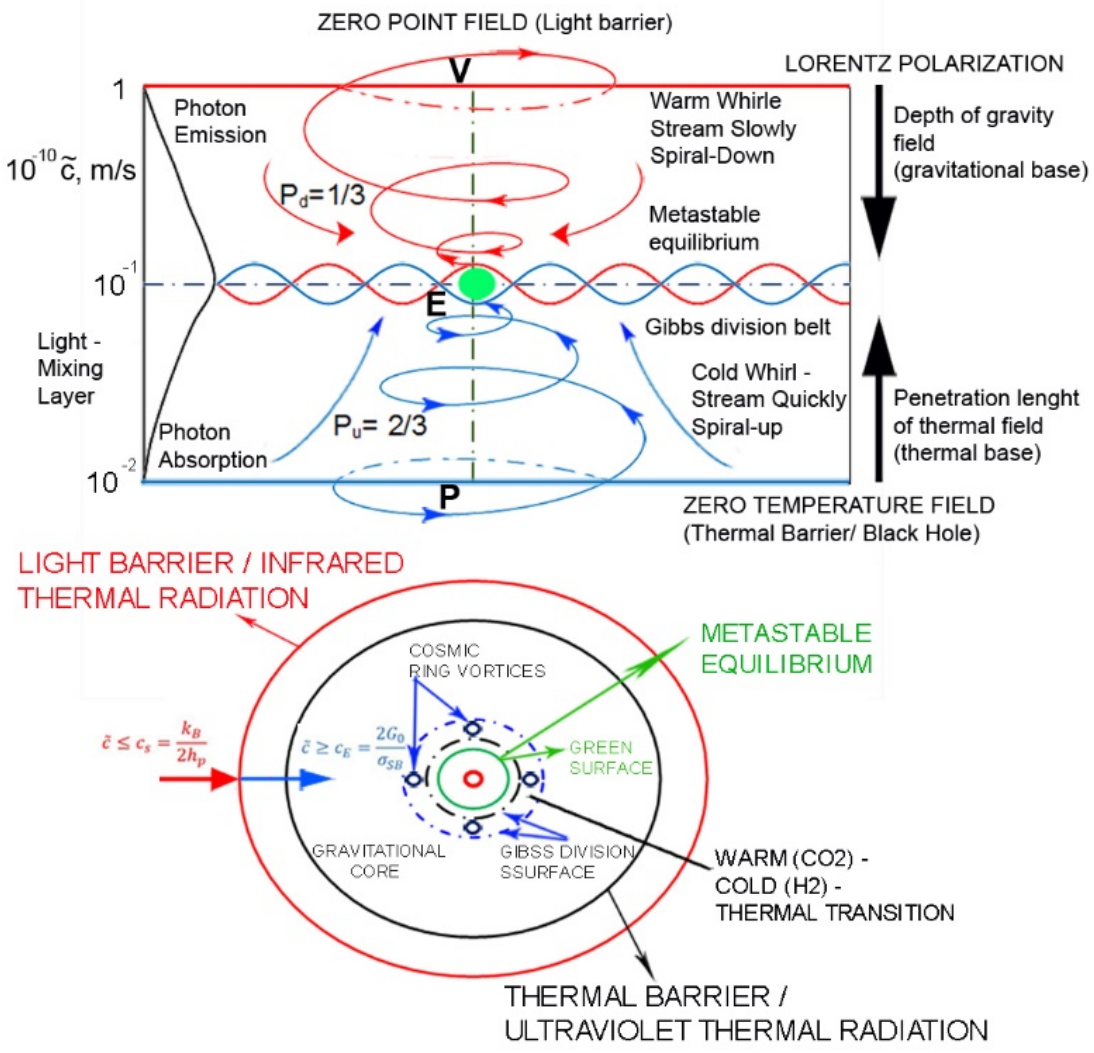
***Key Words***: *Regenerative material systems, Lorentz like polarization of light, quantum fluctuations of light, quantum gravity, reciprocity theorem, optical-thermal mechanical of light, global warming-the out of order work condition*

## 1. INTRODUCTION

The 4D-BIG BANG like shocks engendering self-consistent material systems are a chi-squared ($\chi$) distribution type, a special case of the gamma distribution with three degrees of freedom widely used in physics. Such a material system is the solar regenerative system where the light field induces cooperative-gravitational phenomena producing the quantum light/thermal radiation and thermo-molecular processes/ transformations of a morphogenetic nature.

All the regenerative material systems constitute an eternally regenerative unbounded Universe, governed by two principles: a) invariance of the quantum fluctuation of light and b) relativity of regenerative matter dependent on the position from a star (herein the Sun), cyclically varying, supplemented by a reciprocity theorem, for light/ photon-thermal-mechanical processes, where reciprocity relations hold for three energy subsystems interconnected in this order: **thermal/light radiation, thermo-molecular conduction and mechanical convection**. This type of cooperative energy system embraces practically all adiabatic/quasi-static adiabatic thermo-molecular processes.

The radiation-thermal-mechanical reciprocity theorem is shown in Fig. 1, where it can be seen as optical interference fringes at galactic distances, while at astronomical distances as thermal vertical streams (cosmic winds) and mechanical counter-rotating gravitational whirls, corresponding to the transport of back-scattering of solar energy by thermal radiation, thermo-molecular conduction and mechanical convection.




a)

b)

Figure 1 – Schematic phenomenological representation of optical-thermal-mechanical reciprocity theorem: a) counter – rotating gravitational whirls, $(K_B, h_P, \sigma_{SB})$ – Boltzmann, Planck, Stefan-Boltzmann constants; b) warm (large thermal inertia – $CO_2$) and cold light (small thermal inertia – $H_2$)

The intrinsic regenerative processes triggered off at the onset of light (i.e. the spark-ignition speed, $C_s = 10^{10}\ m/s$) are precisely determined by a set of conditions: **the singularity at the beginning of the solar universe**: $M_0 = 10^{30}\ Kg$ , $I_0 = M_0\ C_s = 10^{40}\ kg\ m/s$ and $W_0 = M_0^{2/3}\ C_s = 10^{30} W$, defined as the initial conditions (IC) of the solar regenerative system, including the Earth, the only planet known to generate organic matter (life), where in principle these conditions can produce precisely the same effect at a later time (**the so-called causality principle**), with a quantum uncertainty (**the Heisenberg uncertainty principle**) of a thermal nature (**the frozen metastable equilibrium condition**) better known as **the global warming or a thermal precessional/ wake effect condition**.

The above considerations will be detailed in the following sections.

The material universe is formed after the back-scattering of thermal radiant energy at the light onset, into the hemisphere of space bounded by a normal plane to the direction of incident radiation and lying on the same side as the incident ray, in opposition to forward scatter. The universe is the outcome of a chi-squared energetic shock type with three degrees of freedom $(k = 3)$, engendering a self-sustained regenerative matter process under control of light-radiant energy; in other words the natural quantum fluctuations of light produce thermal radiation propagating into the whole universe.

Generally, any percussion/shock engenders more or less order-disorder or **polarization**, depending on the initial/starting conditions ($m_0 V_0$ – momentum), where for $V_0 \leq c_s = 10^{10}\ m/s$ (spark-ignition speed) and certain stability conditions; therefore, bounded regenerative material structures can be created. These material structures, continuously pondered/level-headed, coherently move self-sustained by various tidal/inertial waves, and completely fill the unbounded universe. The polarization property of a percussion gains different meanings depending on the utilization field, statistical mathematics and/or physics.

**Statistical interpretation** refers to the back-scattering of random variables after impact, which statistically self-organizes in continuous cumulative distributions. The two very common continuous probability distributions are the **normal (or Gaussian) distribution and the chi-squared (or Helmert-Pearson) distribution** with *k* degrees of freedom, where the gamma (Γ) like distribution is a sum of the squares of *k* independent standard normal random variables. The two distributions together with their characteristics describing an internal torsion/twist process, cover the all cooperative physical phenomena involving statistical

processes of order-disorder transformations in bivariant self-consistent systems, which hold together in spite of the disrupting/disembodying influence of thermal agitation. Such a the cooperative phenomena of gravity and turbulence include their "issues" of paradigmatic nature [1], [2], where the athermal conditions due to the excess entropy (or global warming) are vital for the stability of phases (or metastable equilibrium) of involved processes, and for their perpetuity.

**Physical interpretation** refers to the electromagnetic/thermal radiation back-scattering at the light onset (or spark-ignition), along with the constant luminous flux (or spot-light postulate [3]) and pure kinetic energy transport by radiation with a local gravitational radiation rate ($g_0 = 10\, m^2\, s^{-2}$) described in the second section.

**Thermodynamic interpretation** refers to the thermomolecular process and its mechanism of thermal energy transport by thermal conductivity in gases and liquids (thermal streams and/or winds), described in the third section.

**Mechanical interpretation** refers to the gravitized hot matter mechanism through a double refrigeration process along with thermal energy transport by forced convection with cross-flow heat exchanger among moving bodies, described in the fourth section.

Supplementary, the considerations on the quantization of space-time against the solar distance and relative-rotating periods for the planets orbiting around the Sun (or the so-called clock's law) are given and also some physical motivations for the mathematical concept of fibre bundles and gauge connections are considered.

## 2. QUANTUM ORIGINS OF WAVY LIGHT AND GRAVITY (PLAN POLARIZED LIGHT)

The plan-polarized light induced by the action of a spark-ignition at the light onset (the speed of $c_s = 10^{10}\, m/s$ is a photon-photon interaction producing their unharmonic (nonlinear/hysteretic) mutual interference. These "collisions" are responsible for the thermal resistance of a primal material entity at concomitantly high and low temperatures, which contain permanent dipoles, a statistical kurtosis property of the optical double refraction property of light. A photon is a "particle" associated with the onset of light ($c_s$), with charge zero and mass zero, which has a thermal energy $\tilde{e}$ given by

$$\tilde{e} \equiv \frac{k_B}{h_P} c_s^{-1}, \tilde{e} = e - ln2, \quad \text{the primal fluctuation} \tag{1}$$

Here $k_B$ is Boltzmann's constant ($k_B = 1.381 \cdot 10^{-23}\, JK^{-1}$), $h_p$ is Planck's constant ($h_p = 2/3 \cdot 10^{-33} Js$) and $c_s$ is spark-ignition speed ($c_s = 10^{10}\, m/s$), where Eq. 1 is viewed as the thermal wave length $\lambda_{photon}$, characterizing a primal thermal bundle, related to its frequency $\nu_{photon}$ by the equation

$$\tilde{e} \equiv \lambda_{photon} = \frac{c_s}{\nu_{photon}}, \quad \text{(a thermal wavelength)} \tag{2}$$

The primal quantum fluctuation of $\lambda_{photon}$ defined by

$$\frac{e}{2} \leq \tilde{e} < e \tag{3}$$

is the measure of Heisenberg uncertainty (i.e. impossibility of a precise determination [4-6]) and is the **zero point field** and **zero temperature field** (or the zero$^{th}$ law of thermodynamics), and for the quantum fluctuation of kinetic and thermal energy of light respectively (i.e. vacuum

polarization effects). It is of great importance to make a clear distinction, at the outset, between the electromagnetic classical waves carrying thermonuclear energy (or electromagnetic radiation) by cold/fast photons as

$$\varepsilon = h_p v,\ \lambda = \frac{c}{v},\ c = 3 \cdot 10^8\ m/s,\ \text{(electromagnetic wave field)} \tag{4}$$

and the gravitational tidal waves carrying thermo-molecular energy (or pure thermal radiation) by warm/slow (idle) photon as

$$\tilde{e} = \frac{c_s}{v_{photon}}, \tilde{e} = e - ln2, c_s = 10^{10}\ m/s,\ \text{(gravitational tidal wave field).} \tag{5}$$

The metastable/internal equilibrium of gravitational tidal waves (i.e. the frozen phase equilibrium of the process involved in a thermonuclear interaction) is given by the strict inequality (3) as the athermal critical solution

$$\tilde{e} \leq \sqrt{2} \equiv \Delta S_{cr}\ (^{o}\text{K}), \tag{6}$$

the so-called global warming condition.

The athermal solution is the frontier between the gravitational tidal/inertial wave field, embodying/gravitizating space of matter, as moving bodies, and the well-known electromagnetic wave field ($\lambda = c/v$), producing radiation associated with the sudden increase of thermal agitation followed by the destruction of micro-molecular structures for the temperatures of $\theta > \theta_{cr} = \sqrt{2}(°K)$, (i. e. the beginning of global warming).

**The natural quantum fluctuation** of light is an anharmonic self-sustained oscillation after its ignition ($c_s$), engendering and periodically regenerating matter, including terrestrial organic matter, localized in moving bodies as stellar configurations, herein the solar system of the Milky Way galaxy.

The solar system formed in the light field is viewed as a parabolic huge mirror under the caustic optical effects capturing its radiant energy. The caustic like a parabolic mirror effect refers to a normal congruence/coherence of the light rays which are tangent to a surface, called the **caustic surface**, generally each ray being tangent to the caustic surface in two points. Thus, the caustic of parabolic mirror effect due to an incident beam of rays parallel to the axis of symmetry is a semi-cubic paraboloid of revolution (or the so-called spot-light), Fig. 2.

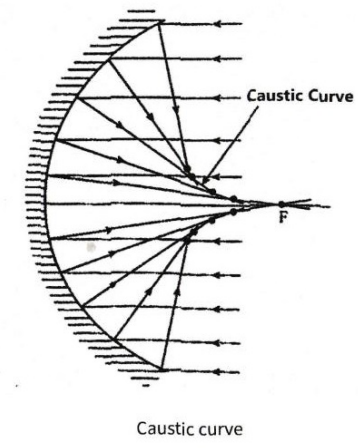



Figure 2 – Caustic of a parabolic mirror (the spot-light effect)

The **spot-light** (or in **focus light**) is based on its caustic property being the locus of centers of curvature of the parabolic sections, [4], [5], [7-9].
This means that the caustic surface is a set of **caustic curves** where each caustic curve is the edge of regression of the polar developing line of curvature on a **wave front** carrying its normal planes of a **polar developing surface** containing the tangent planes of the developing wave surface. The characteristic lines (or rulings) of the polar developing wave front are tangent lines of the regression edge or caustic curve, Fig. 2.
This shows that the caustic surface consists of two sheets, whose points are centers of curvature of the three-dimensional wave front (or the bifocal pondered spot-light) of an incident beam of parallel rays, containing their tangential and sagittal foci. $\lambda_c$
The natural quantum fluctuation is a quantum pondered/level-headed bivalent one able to be focused in two gravitational foci (the kurtosis property of its statistical distribution) of radiant energy, back-scattering after a flash point (or spark ignition).
The quantum pondered fluctuation of light is defined by the bounded left-hand inequalities, called **gauge connection** or **bundle connections**, as:

- First photon regression (warm wave front)

$$g_0 \leq e + e^2, Ker \equiv \frac{lne}{lne^2} = \frac{1}{2},$$
$$g_0 = 10\, m/s^2,\ the\ gravity\ unit\ (warm\ focus). \tag{7a}$$

- Second photon regression (cold wave front)

$$2g_0 \leq e \cdot e^2, Ker \equiv \frac{lne^2}{lne^3} = \frac{2}{3},$$
$$eg_0 = e \cdot 10\frac{m}{s^2},\ the\ cold\ focus. \tag{7b}$$

- Cumulative photon regression (bivalent radiant wave)

$$2g_0^2 \leq (1+e)e^4,\ Ker \equiv \frac{lne^3}{lne^4} = \frac{3}{4},$$
$$G_0 \equiv e \cdot g_0^2 = e \cdot 10^2\ m/s^2,\ the\ radiant\ energy. \tag{7c}$$
$$G_{th} \equiv e^2 \cdot g_0^2 = e^2 \cdot 10^2 \frac{m}{s^2},\ the\ thermal\ energy,$$

where

$$J_h \equiv (G_0 \cdot G_{th})^{1/2} = e^{3/2} \cdot g_0 = 44.8\, Joule/^0K. \tag{8}$$

The beginning of the light is **the mechanical equivalent of heat**, better known as $J_c = 4.185\ Nm/cal$, the mechanical equivalent of the calorie (cal), $J_c = J_h/g_0$ .
The ensemble of bundle connections, Eqs. 7, shows a bifocal cross/torsional buckling (twist) quantum-gravity structure, an allied phenomenon resulting from temporal light modulation of the continuous **spot-light** or **luminous flux**, post-flash point. The spot-light is associated with a mixing-layer like hydrodynamical structure (Fig. 1) of the focused-gravitized light field with the surroundings double stream

$$C_w \equiv e/g_0 \cdot C_s\, m/s,\ the\ warm\ stream\ (warm\ phase), \tag{9a}$$

$$C_c \equiv e/g_0^2 \cdot C_s\, m/s,\ the\ cold\ stream\ (cold\ phase) \tag{9b}$$

with the light flow rate, $\Phi_L$,

$$\Phi_L \equiv (G_0 \cdot G_{th})^{1/2} \cdot C_s = e^{3/2} \cdot 10^{12} m^2/s^3, \tag{9c}$$

from which radiates pure thermal energy (or back-scattering energy).

**The space quantization** in the gravitation field ($Ker = 3/4$), i.e. the depth of field, refers to the distance of focus which is range of radiation distances, corresponding to the range of object distances, covered by the depth of field; for the bifocal flux, $\Phi_L$, and a radiation rate of $g_w = e^{3/2} \cdot g_0\, Ker\,(2/3)\, m/s^2$, the depth of field $R_w \equiv \Phi_L/g_w = 3/2 \cdot 10^{11} m$, covers the gravitation field surrounding the warm focus ($F_w$), while for a radiation rate of $g_c = e^{3/2} \cdot g_0\, /Ker\,(3/4)$, a super-gravitation field surrounding the cold focus, ($F_c$), $R_c \equiv \Phi_L/g_c = 3/4 \cdot 10^{11} m$, is formed along with its extinction at $g_e = Ker(3/4)\, m/s^2$, and the extinction depth, $R_e = \frac{4}{3} e^{\frac{3}{2}} \cdot 10^{12} = 6 \cdot 10^{12}\, m$, the beginning of light buckling/twist is located at the starting depth $R_s = \frac{\Phi_L}{g_s} = 5.97 \cdot 10^{10}$m, with $g_s = g_0^2\, Ker(3/4)$.

The gravitized field is consistent with the solar system for its main stellar bodies: SUN ($G_0$), MERCURY ($e^{4/3}$), EARTH ($g_0$), JUPITER ($eg_0$), and PLUTO ($e^2/g_0$).

The natural quartile $\{e, e^2, 10, 10^2\}$ is used to quantize in a canonical manner the focused/gravitized light field into a self-consistent field inter-connected by a twisting-contracting inside-outing dynamics.

Post-flash point the pondered motion of light by gravity (brake light) is an intrinsic torsion/ twist process, in a constant spot-light, where the gravity varies during one cycle as long as the primal metastable equilibrium of quantum and gravitational phases doesn't change, i.e. the athermal condition of the excess entropy, $\Delta S_{cr} \leq \sqrt{2}\ (°K)$.

Figure 3 illustrates the ponderomotion cycle of quantum-gravity engendered by the polarized light ($P(Ker)$) where $Ker = 1/2$ is an index for the first refraction/regression and $Ker = 3/4$ is for the second refraction,

$$(e^2 \cdot 10^1)^{1/3} \rightleftharpoons (e^1 \cdot 10^2)^{1/4} \text{ the quantum-gravity ponderomotion relationship,} \tag{10}$$

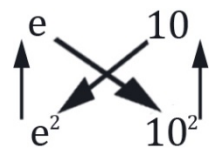



Figure 3 – The cross quantum-gravitation cycle, $(e^2 \cdot 10^1)^{1/3} \rightleftharpoons (e^1 \cdot 10^2)^{1/4}$

The light polarization ($Ker = 1/2$) along with its allied gravitized field ($Ker = 3/4$) involves reversible processes, preserving their integrity (with the excess free energy) and eternally self-perpetuated, i.e. until the extinction of earlier thermo-nuclear interactions.

## 3. THE QUANTUM SPOT-LIGHT MODEL (FOCUSED LIGHT)

By defining

$$g_c \equiv (e + e^2), e \cdot e^2 = 2g_0, \tag{11}$$

as a gravity unit [1], and the constant light flow rate ($\phi_L$), Eqs. 9, the natural quartile, $\{e, e^2, 10, 10^2\}$ is a mixed quantum gravity matrix (Fig. 3), used to describe the solar gravitational and mass fields, as follows

THE COMPARED GRAVITY MODELS

A) TERRESTRIAL GRAVITATIONAL FIELD/NETWORK

| **Planets** | **Gravitational acceleration** | **Quantum model** | **Double scale method** | **Exp.** |
|---|---|---|---|---|
| Mercury | $g_{Me} = e^{4/3}$ | 3.794 m/s$^2$ | 3.86 | (3.7) |
| Venus | $g_V = e + \frac{e}{2}$ | 8.748 m/s$^2$ | 8.6 | (8.87) |
| Earth | $g_E \equiv g_0 = e \cdot \frac{e^2}{2}$ | 10.04 m/s$^2$ | 10 | (9.806) |
| Mars | $g_{Ma} \equiv \frac{g_0}{e}$ | 3.715 m/s$^2$ | 3.78 | (3.72) |

B) JOVIAN GRAVITATIONAL FIELD/NETWORK

| **Planets** | **Gravitational acceleration** | **Quantum model** | **Double scale method** | **Exp.** |
|---|---|---|---|---|
| Jupiter | $g_J = 3/2\ g_0 + g_0$ | 25 m/s$^2$ | 25.95 | (24.79) |
| Saturn | $g_S = g_J/3 + e^{2/3}$ | 10.28 m/s$^2$ | 10.73 | (10.44) |
| Uranus | $g_U = g_J/3$ | 8.33 m/s$^2$ | 11.57 | (8.69) |
| Neptune | $g_N = g_J/3 + e$ | 11.05 m/s$^2$ | 12.67 | (11.15) |
| Pluto | $g_P = e^2/g_0$ | 0.74 m/s$^2$ | 0.72 | (0.62 |

In contrast to the gravity polarization ($Ker = ¾$) of photon nature occurring reversible cyclical processes with an excess radiant energy, the thermal polarization ($Ker = 2/3$) produces cross exchanges of heat, matter and work with the surroundings area of reverse order. The sequence of processes in a reciprocating mass mechanism on which one working stroke executed per one revolution assumes two strokes and variable mass, or relative regenerative mass, Fig. 4.

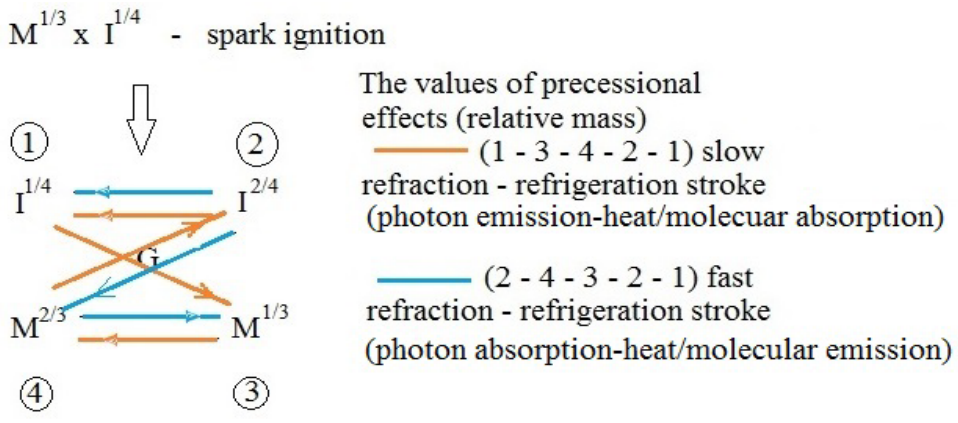



Figure 4 – The "two-stroke" mechanism type cross-solar regenerative cycle ($M^{\frac{2}{3}} \rightleftarrows c^2$, $M_0^{1/2}\ G_0^2 = C_S^2$, $M^{1/3}$ – regenerative mass, $M^{2/3} = G^2\ M^{1/2}$ – stock/buffer mass)

The precessional relative effects (relative mass) given by the orbital period to rotation period ratio ($T_0/T_r$) is the half-life of regenerative mass (the time required for one half of it to undergo the disintegration/disembodying process).

$$m_{Mc} = \frac{T_0}{T_r}\, g_0\, G\, M^{\frac{2}{3}} = e\, 3/2 \cdot 10^{23} = 408 \cdot 10^{23}\ \text{Kg}, \tag{12}$$

$$mV = \left(\frac{T_{OV}}{T_{OE}}\right)\left(\frac{T_r}{T_0}\right)_V \frac{g_0}{g_V} m_E = 4.97 \cdot 10^{24}\ \text{Kg}, \tag{13}$$

$$m_E = \frac{T_0}{T_r}\,\frac{2}{3}\, G\, M^{\frac{2}{3}} = 6 \cdot 10^{24}\ \text{Kg}, \tag{14}$$

$$m_{Ms} = \frac{T_0}{T_r} g_0\, \frac{2}{3}\, G\, M^{\frac{2}{3}} = 4.8 \cdot 10^{27}\ \text{Kg}, \tag{15}$$

$$m_J = \left(\frac{T_0}{T_r}\right)\frac{g_{Ms}}{g_0^2}\, G\, M^{\frac{2}{3}} = 6.77 \cdot 10^{23}\ \text{Kg}, \tag{16}$$

$$m_P = \frac{G}{2}\, M^{\frac{2}{3}} = 1.36 \cdot 10^2\ \text{Kg}, \left(\frac{G}{2} = \left(\frac{T_0}{T_{rot}}\right)^{\frac{1}{2}}\right). \tag{17}$$

Above results are consistent with Law – 1/2 (photon polarization), Law – 2/3 (thermal polarization) and measuring.

## 4. CONCLUSIONS

**Einstein's theory is an unfinished** exercise in tensor analysis (without torsion tensors-free), in which, in the absence of matter torsion, an applied theory is transformed into something worse, something without physical relevance [10], [11]. **The main polarization (elliptically polarized light)** induced by the "light hammer" is the separation of thermal charges in positive and negative temperatures, with triple thermomolecular potential (one negative level, or thermal quantum), respectively $CO_2$, $H_2O$, $H_2$ – molecular potential, corresponding with the state at surface Venus, Earth and Pluto's. The Earth is the only planet known to harbor organic matter **("life")** with $T_3H_2O$ (triple equilibrium point at its surface, while at Pluto surface it is$T_3H_2$. The thermal states of Mercury ($p \cong 0, T \leq 100°\ K$) and Pluto ($p = 1\ Pa, T \cong 30°\ K$) are the physical singularities at the beginning and end (black hole) of the solar universe. The gravitational and thermal fields are less known than its internal electromagnetic field (gravity-free).

**The quantum spot-light model** (Law – 1/2 of photon-light, Law – 2/3 of regenerative mass and Law – 3/4 of quantum gravity) expresses the gravitational and precessional relationships among Sun – like moving cosmic bodies.

**The bifocal gravitational field** (Fig. 5) with its depths: $d_T = 3/2 \cdot 10^{11}\ m$ (terrestrial depth), $d_T = 3/4 \cdot 10^{12}\ m$ (Jovian depth), along with the universal gravitational constants $C_T = 2/3 \cdot 10^{-10}\ m^2/Kg\ s^2$ (Newtonian terrestrial constant); $C_J = 1/3 \cdot 10^{-10}\ m^3/Kg\ s^2$ (Jovian constant), with $(C_T + C_J) \cdot C_S \equiv 1$ and $K_B/2 \cdot K_P = C_S$ govern the gravitational external and electromagnetic internal forces, showing the unity of solar regenerative material universe.

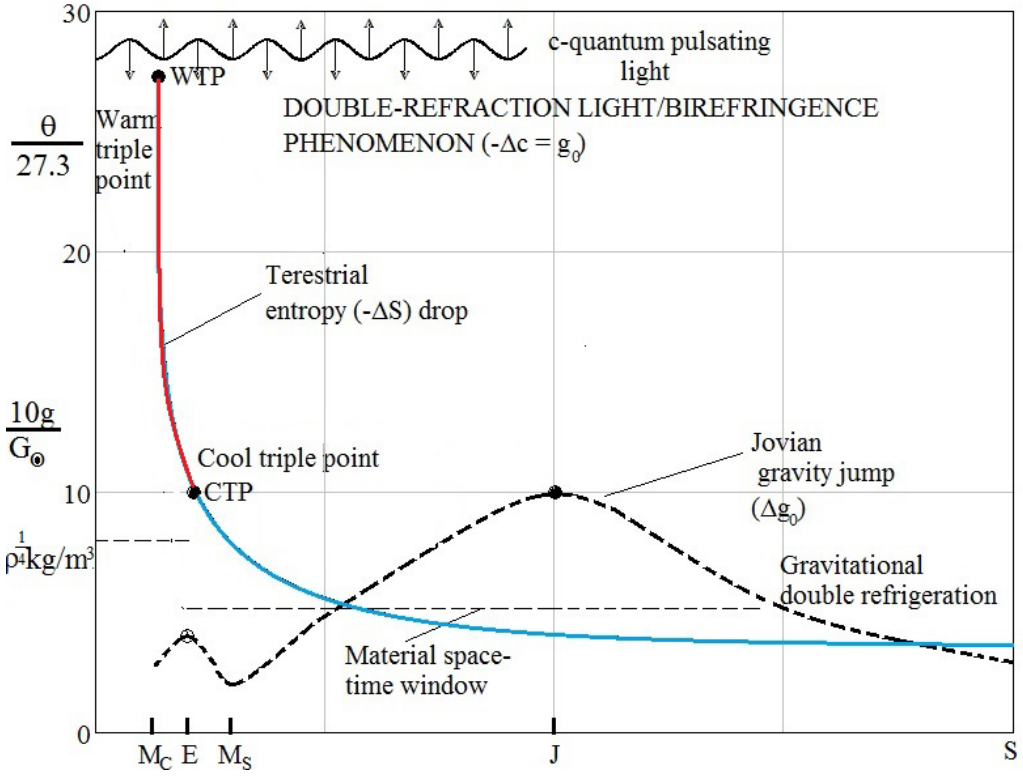



Figure 5 – The bifocal gravity of solar system (double refrigeration):
o - Earth $g_E = 10\ m/s^2$; ● - Jupiter $g_J = e \cdot 10\ m/s^2$

**The physical interpretation of curvature and torsion/twist** of the space-time. Second Law of Kepler is the relationship between light refraction/curvature (the orbital distance from the Sun, $R_0$ (m) ≡ curvature radius) and mass refrigeration/twist (orbital period, $T_0$) at an energetic equilibrium state.

$$\underset{\text{Photon emission}}{E_{ks}(R_0)} \rightleftharpoons \underset{\text{photon absorption.}}{E_{th}(T_0)}, \tag{18}$$

The thermodynamic equilibrium is reached for both warm and cold planets, $\frac{R_0^{3/2}}{T_0} = 2 \cdot 10^9\ m/s$, $n_{cr} = \frac{1}{n_{hr}} = \frac{3}{2}$ – mutual refraction – refrigeration index.

The cold to warm radiant power ratio $C_c/C_w = 0.3$, is an over – refrigeration index, viewed as the overtwist of old/cold planets, corresponding the Einsteinian curvature and torsion tensors of its space-time theory.

The quantum gravitational model has defined a light curvature and mass-twist relationship $h_P/k_B \quad C_S \equiv 1/2$ and $MG\ h_P \cong 1/3\ \ (\mathrm{m/s})^{-1}$ (sing the C ⟶ space(x) and G ⟶ time (t)) analogy, both endless, the space-time relationship for the Sun's work can be modeled as the coupling mechanisms of different thermodynamic processes of a nuclear fission and/or fusion nature. A pair coupled non-linear aims

$$h_{tt} = C^2\, h_{xx}, \tag{19}$$

each identified as the gravitational (G) and light (C) wave fields [3], Figs. 6, 7.

The material renewal of Sun-like universes is an endless cyclical process called BD (BIRTH-DEATH) process of a stochastic nature, in which the critical equilibrium state for Earthly "**life**" is changed if $\frac{3}{2} < \Delta\theta \leq 3°$, quantized global warming by the measure ($\frac{g_{th}}{g}$).

The $\Delta\left(\frac{g_{th}}{g}\right)_{V-E} = 0.15° - \Delta\left(\frac{g_{th}}{g}\right)_{M_S-E} = 2.9°$ range of the Earth's work out of order can be self-regulated (Gaian self-regulation [12] if its unstable state is removed) otherwise, steeply it made matters worse.

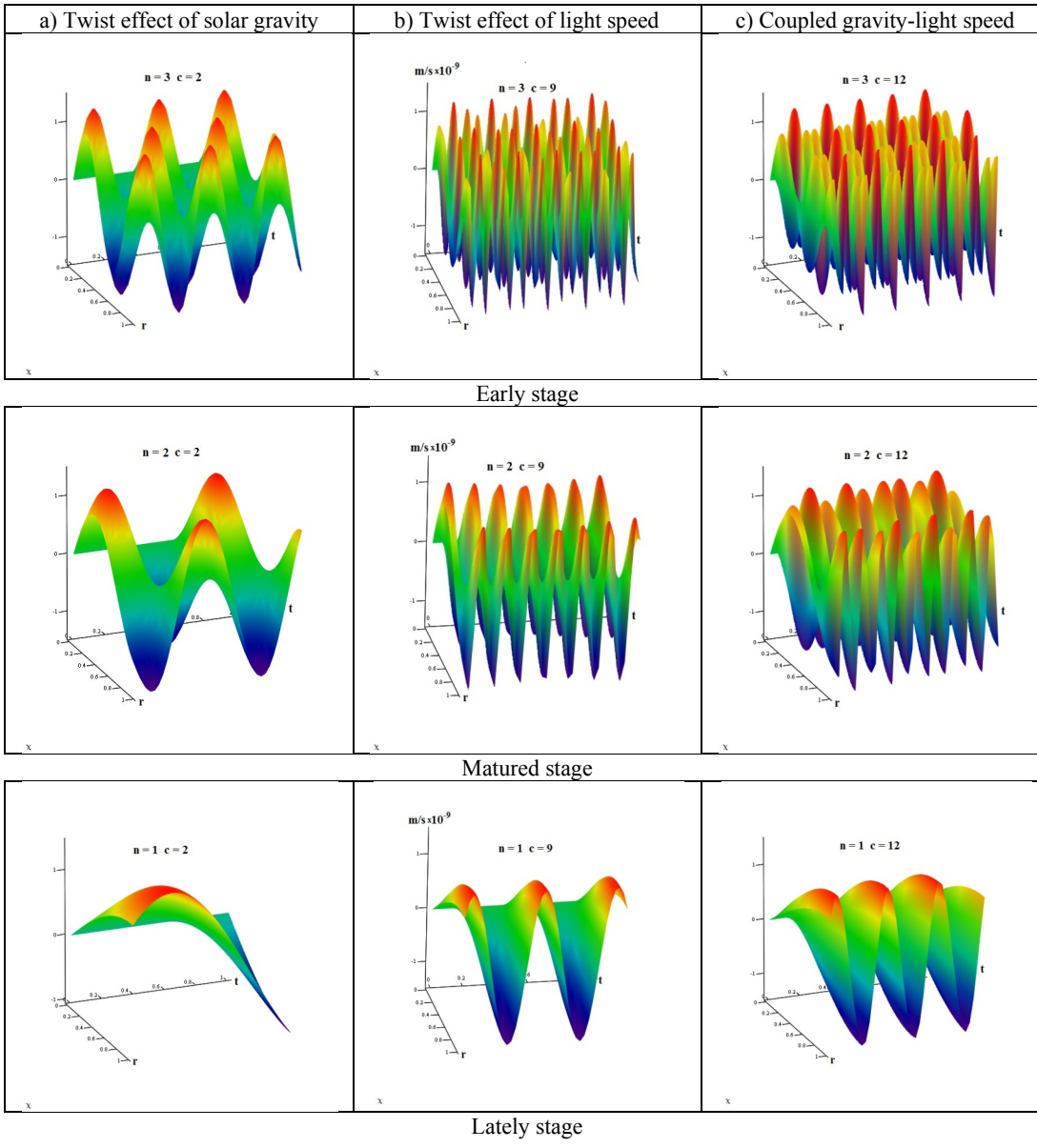



Figure 6 – The work of Sun (warm wave packets-shearing/slow mode).

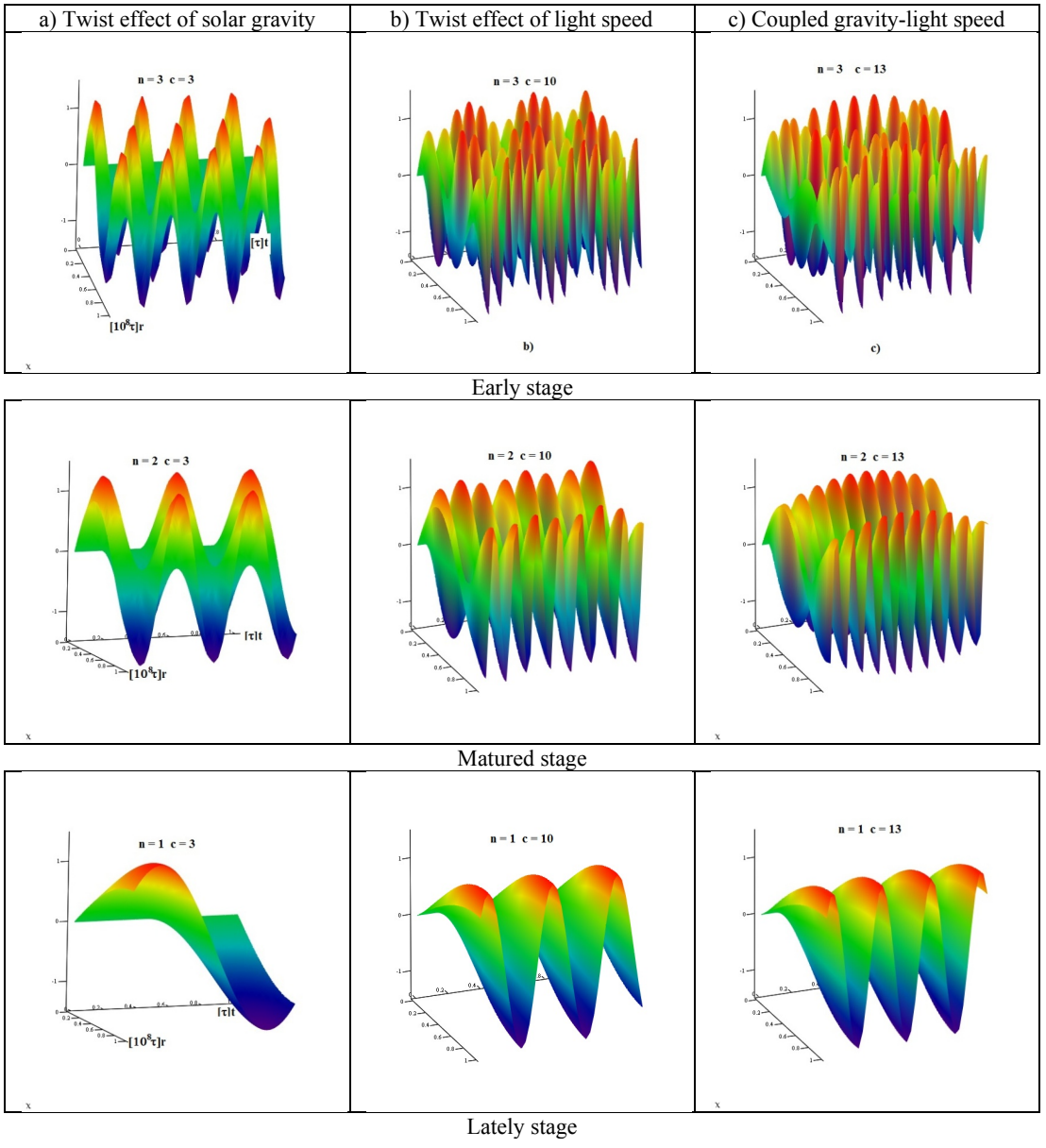



Figure 7 – The work of Sun (cold wave packets-pumping/fast mode)

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