Review Article

A theoretical formula for calculating G : Newton's Universal Gravitational Constant

Abstract

This article synthesizes insights from three seminal works: Georges-Louis Le Sage's 1783 paper, Albert Einstein's 1935 paper, and Peter Higgs' 1964 paper, along with Isaac Asimov's 1966 paper, which presents a model for the origin of matter and explains the absence of antimatter in our universe. These four foundational works were integrated into the Ulianov Theory, developed by Dr. Policarpo Yoshin Ulianov. The Ulianov Theory proposes a new model of fundamental particles and interactions, leading to a novel theoretical equation for calculating Newton's universal gravitational constant G . This theoretical framework not only addresses criticisms of the Higgs boson model but also provides a robust method for calculating gravitational forces and the value of G .

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Introduction

This article synthesizes insights from three seminal works: Georges-Louis Le Sage's 1783 paper,[1] Albert Einstein's 1935 paper,[2] and Peter Higgs' 1964 paper,[3] along with Isaac Asimov's 1966 paper,[4] which presents a model for the origin of matter and explains the absence of antimatter in our universe, a genius idea that has remained unknown until today. These foundational works were brought together in a theory called Ulianov Theory,[5] developed by Dr. Ulianov. The Ulianov Theory (UT) was initially presented in 2007,[6] considering only Asimov's original idea, and concluded in 2024,[7] after 17 years of studies and improvements. The theory posits that the basic particles of UT, referred to as Ulianov Holes, are in fact Einstein-Rosen bridges modeled as Ulianov Wormholes (UWH).

Furthermore, Dr. Ulianov's calculations of the density and pressure of the Higgs field[8] matched the values (Planck density and Planck pressure) predicted by UT for a type of Ulianov Perfect Liquid (UPL),[9] which led to the development of the Higgs Ulianov Perfect Liquid (HUPL) model. This model generates a gravitational pressure model[10] that fits into Le Sage's general model by substituting corpuscles with Higgs bosons.

Criticisms of the Higgs boson model for not calculating particles' masses or gravitational forces were addressed by using the HUPL pressure to derive Newton's gravitational law and deduce a novel equation for calculating the value of G , Newton's universal gravitational constant.

It should be noted, that the focus of this article is to present a theoretical equation that allows for the calculation of Newton's gravitational constant. However, this cannot be something left disconnected in space, and thus it is presented within the broader context. Some aspects of the Ulianov Theory, while briefly touched upon here, only represent a small part of a much larger framework. For a deeper understanding of this topic, it is essential to consult the material provided in the references.[5,7]

Broken symmetries and the masses of gauge bosons

In this section, we conduct a basic analysis of the Higgs field equations, starting with a real ϕ field and then a complex ϕ field. We observe that since the expected energy value of the Higgs field in a vacuum is positive (246 GeV), the Higgs field has mass. To calculate the real density of the Higgs field, we define a thought experiment using a Higgs Ulianov Box (HUB), which converts virtual Higgs boson pairs (that annihilate with zero energy generation) into two real Higgs bosons (that decay generating energy). The theoretical mass density in the Higgs field is extremely high (5.15×10^{96} kg/m³), and the pressure inside the HUB is equal to the Planck pressure

($P_p = 4.63 \times 10^{113}$ Pascal). We explain the lack of observable effects from these values in our daily lives by suggesting that we live inside an ocean where water molecules are replaced by Higgs bosons. These bosons behave like a non-compressible ideal gas, which can be modeled as an ideal liquid (without friction or viscosity) called HUPL (Higgs Ulianov Perfect Liquid). Thus, the entire universe can be modeled as a HUO (Higgs Ulianov Ocean), filled with HUPL at a practically constant pressure equal to the Planck pressure.

Modeling The Higgs field

The Higgs field is a complex scalar field, but for simplification, we initially consider a real scalar field ϕ described by the Lagrangian:

$$V\left(\phi\right) = \frac{1}{2}\mu^2\phi^2 + \frac{1}{4}\lambda\phi^4$$

$$\mathcal{L} = \frac{1}{2}\left(\partial_\mu\phi\right)^2 - V(\phi) \tag{1}$$

with $\lambda > 0$ and $\mu^2 < 0$.

The Lagrangian (1) is invariant under the transformation $\phi \rightarrow -\phi$. The potential $V\left(\phi\right)$ has the form given in Figure 1a with two minimum points satisfying the equation:

$$\frac{\partial V}{\partial \phi} = \phi\left(\mu^2 + \lambda\phi^2\right) = 0 \tag{2}$$

This yields the solutions:

$$\phi^2 = -\frac{\mu^2}{\lambda} = v^2 \Rightarrow \phi = \pm v \tag{3}$$

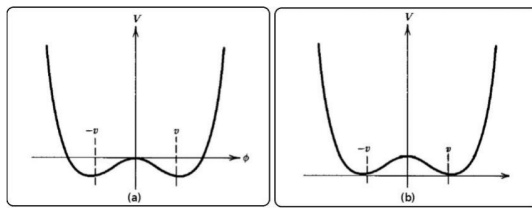The point $\phi = 0$ corresponds to the vacuum of the system described by Equation (1).

Figure 1a) Potential $V(\phi)$. b) Displaced potential $V(\phi')$

In this configuration, the vacuum does not correspond to the minimum value of the Higgs field (minimum system energy). Furthermore, the mass m of the field is imaginary, which is a problem. To correct these problems, the scalar field ϕ can be vertically shifted, increasing its minimum to $V = 0$, as shown in Figure 1b. Thus, a new field ϕ' can be defined:

$$\phi' = \phi + \eta \tag{4}$$

$$\eta = \sqrt{\frac{-\mu^2}{\lambda}}$$

The field η can be interpreted as vacuum quantum fluctuations of the Higgs field. Therefore, applying Equation (4) to (1) we obtain:

$$\mathcal{L} = \frac{1}{2}\left(\partial_\mu \phi'\right)^2 - \frac{1}{2}\left(\sqrt{-2\mu^2}\right)^2 \phi'^2 - \lambda \eta \phi'^3 - \frac{1}{4}\lambda \phi'^4 \tag{5}$$

In the Lagrangian (5), the vacuum corresponds to the zero of the ϕ' field, and the ϕ' field has real and positive mass, $m_{\phi'} = \sqrt{-2\mu^2}$. Note that Equation (5) no longer has symmetry under the transformation $\phi' \to -\phi'$, due to the term ϕ'^3. In this way, the symmetry breaking of Equation (1) generates mass for the Higgs field, that is:

$$m_\phi = \sqrt{\mu^2} \to m_{\phi'} = \sqrt{-2\mu^2} \tag{6}$$

In the general case of a complex scalar ϕ, the Higgs field ϕ assumes the form:

$$\phi = \sqrt{\frac{1}{2}}\begin{bmatrix} \phi_1 + i\phi_2 \\ \phi_3 + i\phi_4 \end{bmatrix}$$

Described by the Lagrangian:

$$\mathcal{L} = \left(\partial_\mu \phi\right)^\mathsf{T}\left(\partial_\mu \phi\right) - \mu^2 \phi^\mathsf{T}\phi - \lambda\left(\phi^\mathsf{T}\phi\right)^2 \tag{7}$$

We can initially choose the expected value of the vacuum of the Higgs field, so that taking $\phi_1 = \phi_2 = \phi_4 = 0$ and $\phi_3 = \sqrt{-\frac{\mu^2}{\lambda}}$, we have:

$$\phi = \sqrt{\frac{1}{2}}\begin{bmatrix} 0 \\ \sqrt{-\frac{\mu^2}{\lambda}} \end{bmatrix} \tag{8}$$

Thus, through the symmetry breaking generated by the displacement of the Higgs field, the particles described by the standard model Lagrangian acquire mass. This formalism is known as the Higgs Mechanism.

In the standard model, the mass of the Higgs boson is given by:

$$m_H = \sqrt{\frac{\lambda}{2}}V \tag{9}$$

where λ is the self-coupling parameter of the Higgs boson and $V = 246$ GeV is the expected energy value of the Higgs field in a vacuum, calculated theoretically using Equations (8) and (9) and some physical parameters. The first experiment capable of proving the existence of the Higgs boson was carried out in 2013 by the ATLAS and CMS experiments in the LHC (Large Hadron Collider). The Higgs boson mass was measured in the ATLAS experiment, with $m_H = 125.5$ GeV/c^2, and the CMS experiment observed $m_H = 125.8$ GeV/c^2. Today, the Higgs boson mass is considered to be $m_H = 125.11 \pm 0.11$ GeV/c^2.

This allows us to calculate the Higgs boson self-coupling parameter λ using Equation (10), obtaining the value 0.517. We can approximate this to $\lambda = 0.5$, meaning that the energy of the Higgs boson is half of the expected value of the Higgs field in a vacuum, which can be associated with the Higgs field vacuum energy.

Calculating the Higgs field mass density

The image in Figure 2 was taken from an explanatory video about the Higgs field for laypeople that explains: *"Likewise, the other fields in the standard model also have no mass inside the empty box, just quantum fluctuations. There is an exception to this rule: The Higgs field is unique because the Higgs field in empty space, unlike any other field, has a net positive mass. Thus the mass of the Higgs field is not zero in empty space."*

Figure 2 The Higgs Field mass being weighed on a scale.

To calculate the weight that this scale in Figure 2 would measure, we need only multiply the volume of the box by the mass density of the Higgs field in kg/m³. However, a quick search on the internet showed a surprising result: although the energy of the Higgs field vacuum has a well-known value (246 GeV) and the fact that the Higgs field has mass is widely accepted (which implies that the Higgs field inside a vacuum box has mass and in principle could even be weighed on a scale), no physicist has yet tried to calculate the mass density of the Higgs field, something we will do now.

To calculate the Higgs mass density, we need to better understand the meaning of quantum field vacuum energy and why this energy is not normally associated with some volume of vacuum. According to quantum field theory, each infinitesimal volume of vacuum radiates as

a quantum mechanical oscillator, similar to the emission of photons from a black body. Thus, at a given frequency ν and temperature T, we have the energy emitted or absorbed, defined by the general equation:

$$\Delta E = K_1 \frac{h\nu}{2} + K_2 \frac{h\nu}{exp\left(\dfrac{h\nu}{K_B T}\right) - 1} \tag{10}$$

where K_B represents the Boltzmann constant, h the Planck constant, and K_1, K_2 are general constants that depend on the kind of field and its virtual particles parameters. The temperature-independent value $K_1 \dfrac{h\nu}{2}$ is called zero-point energy or vacuum energy, and for all known fields K_1 is equal to zero, with the exception of the Higgs field where $K_1 \dfrac{h\nu}{2} = 246$ GeV. Note that in the case of a black body emitting photons where the vacuum energy is zero, we can consider a ΔE value generated inside the black body as a function of the temperature T. As this energy is emitted in the form of photons, it will be divided into a power spectrum, and so we need to consider the photon frequency ν and its energy. Thus, the ΔE emitted by the black body will be a function of frequency ν and temperature T, defined by the Planck equation, which assumes the general Equation (11) with $K_1 = 0$ and $K_2 = \dfrac{2\nu^2}{c^2}$:

$$\Delta E(\nu, T) = \frac{2\nu^2}{c^2} \frac{h\nu}{\exp\left(\dfrac{h\nu}{K_B T}\right) - 1} \tag{11}$$

Here, we can see that Equations (11) and (12) provide an energy value in Joules or GeV, which in fact isn't related to one space volume, because, for example, in a black body experiment we have a body with a cavity that has a certain volume, being heated to a temperature T and emitting photons through a small hole. Therefore, the volume of the cavity can be smaller or larger, and the energy emitted will be the same, as it is considered a single beam of photons emitted by the hole in the cavity.

Using this approach, we propose the analogy presented in Figure 3, where a cubic box forming one black body, emitting photons with energy related to the box temperature T, is related to one mental experiment using a HUB (Higgs Ulianov Box). The HUB is a cube with a side equal to L, which confines Higgs bosons inside through walls that reflect these bosons and prevent them from passing outside the box. The HUB walls are made of a Higgs boson Mirror, a mental material that reflects the Higgs boson and also can resist the Higgs bosons' pressure. Note that the Higgs bosons travel inside the HUB at light speed, and there are two holes in two opposite walls of the HUB, allowing two Higgs bosons to get out of the box. As will be detailed in sequence, the HUB scheme can avoid the annihilation of a virtual Higgs boson pair, generating two real Higgs bosons that are expelled by the HUB holes in opposite directions. This process is similar to what occurs in a black hole event horizon, where the annihilation of a virtual positron-electron pair (or a proton-antiproton pair) is interrupted by the BH proximity, generating a real positron (that falls into the BH event horizon) and a real electron (or proton) emitted by the BH as Hawking radiation.
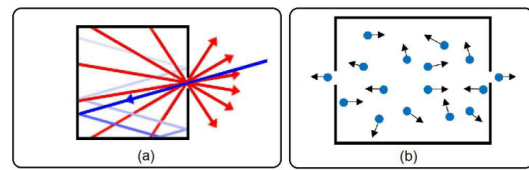

Figure 3 Two kinds of box emitting energy: a) A box forming a black body cavity. b) The Higgs Ulianov Box definition. Note that it is not a real box but only a box defined to perform a mental experiment.

In this model, the HUB cube will continuously emit two Higgs boson streams, generating the vacuum energy of 246 GeV predicted for the Higgs field, which is also similar to the value of the energy associated with the two Higgs bosons emitted by the box (total of 250.22 GeV for two Higgs bosons), proving the validity of the HUB mental experiment.

If the model box in Figure 3-b were filled with gas molecules, the pressure on the walls of the box would be calculated by:

$$P = \frac{1}{3} \frac{N}{V} m_g \overline{v^2} \tag{12}$$

where m_g is the gas particle mass, N is the number of particles, V is the volume of the box, and v is the speed of the particle, with $\overline{v^2}$ given by the average of particles' quadratic speed.

As in the HUB, the Higgs boson speed is equal to the speed of light. Considering a cubic volume L^3 and N_{bH} Higgs bosons inside the box, the HUB pressure (P_{HUB}) becomes:

$$P_{HUB} = \frac{N_{bH}}{L^3} m_H c^2 \tag{13}$$

And so the mass of one HUB (m_{HUB}), with size L, can be easily calculated, given its pressure (P_{HUB}), by the equation:

$$m_{HUB}(L) = N_{bH} m_H = \frac{P_{HUB} L^3}{c^2} \tag{14}$$

In principle, the value of N_{bH} will be directly proportional to the value of L^3, which means that all HUBs will have the same pressure regardless of their size. Furthermore, we can make some additional considerations regarding the value N_{bH}:

Although we do not yet know what weight an L-side HUB would have when placed on the scale, the current model informs us that it is a positive value and also a constant value. Therefore, N_{bH} is a finite value and greater than zero, which may have small variations over time, but the average value of N_{bH} needs to remain constant.

In the case of a real gas, with particles continually exiting through the two holes, the number of molecules will fall over time until it becomes zero. In the case of the HUB, the emission of energy is constant with bosons continuously leaving through the two holes, but the average value of N_{bH} remains constant, which indicates that new bosons are continually being produced within the HUB.

The above consideration generates the following problem: as the rate of production of new Higgs bosons inside the HUB does not depend on the box size or the holes' size, there will be conditions where the number of bosons produced is much greater than the number of bosons that leave the box, and so the value N_{bH} should

increase continuously. As this does not occur, the most coherent explanation is that bosons have a lifetime, being created from the vacuum and annihilating themselves after a certain time, but without generating any by-product that contains mass or energy. In current models, the Higgs boson actually has a very short lifespan (estimated at 1.6×10^{-22} s), but when it decays, it generates a series of particles that contain mass and energy.

Quantum Mechanics models consider that quantum fields contain virtual particle pairs (with each pair composed of one particle and its antiparticle), that can oscillate for a short lifetime, being generated from nothing and annihilating without consuming or producing any energy. For example, in the case of an electron field, there will be the generation of virtual electron-positron pairs that arise and then annihilate each other with zero final net energy, indicating that the energy from the zero point (or vacuum energy) in the electron field is zero. In principle, this occurs because the mass of a particle has the opposite sign of the mass of its antiparticle and thus the total mass of two virtual particles (electron/positron) is equal to zero, also giving zero energy changes.

In the case of the Higgs field, we propose that the Higgs boson is its own antiparticle. Thus virtual Higgs bosons are created in pairs (in order to maintain the system linear momentum constant) and each pair "lives" for a certain short time, then two virtual Higgs bosons collide and annihilate each other without leaving any residue of matter or energy. This is the same case as the annihilation of virtual positron-electron pairs (or proton-antiproton pairs). However, as the mass of the Higgs bosons is positive, even if they appear and disappear quickly, there will always be a certain constant average number of Higgs bosons existing within some space volume.

So in the HUB there is a mean N_{bH} number of Higgs Bosons, which generates a positive and constant mass, which in principle, can generate a weight when a HUB box containing a vacuum but filled with Higgs bosons is placed on a scale, as shown in Figure 2. In this HUB model, we propose that when two Higgs bosons leave the HUB in opposite directions, they stop being virtual bosons (which annihilate each other without energy generation) and become real Higgs bosons, which decay generating energy. In this way, the HUB will generate a real level of energy, emitted by the Higgs field confined in the HUB box, by walls that can reflect the Higgs bosons and support its pressure.

Thus, even if the Higgs bosons emitted by the HUB decay in a very short time, they will generate the mass/energy of 246 GeV/c^2 that will be continuously emitted by the HUB. Therefore, if we put one HUB on a scale, discounting the mass of the box, in principle we can detect at least 246 GeV/c^2 mass provided by the two Higgs bosons emitted, which is equal to 2.23×10^{-25} kg.

As this mass is very small and in practice, we cannot build a real HUB (as there is no known material that can actually reflect the Higgs bosons, preventing them from passing through the HUB walls), today physicists consider that the Higgs field has a positive mass, but it would be a very small mass, and therefore negligible. We believe that this point of view is a big mistake and that the Higgs field has a very large mass.

If we consider the construction of HUBs with increasingly smaller L values, a minimum limit for the smallest possible L is given by the Planck length ($L_P = 1.6 \times 10^{-35}$ m). For this small box, we can consider that the minimum number of Higgs bosons inside the HUB will be equal to two, considering the existence of two Higgs bosons inside the box, waiting to be emitted through the holes.

Thus, the minimum pressure inside this HUB can be calculated using Equation (13a) with $N_{bH} = 2$ and $L = L_P$:

$$P_{HUB} \geq \frac{2}{L_P^3} m_H c^2$$
$$P_{HUB} \geq 9.49 \times 10^{96} \text{ Pascal} \tag{15}$$

Using Equation (14) for one HUB, with $L = 1$ m, we obtain:

$$m_{HUB}(1) \geq \frac{9.49 \times 10^{96} \times 1^3}{c^2}$$
$$m_{HUB}(1) \geq 1.05 \times 10^{80} \text{ kg} \tag{16}$$

This means that the Higgs field density is greater than 1.05×10^{80} kg/m³.

This density is so incredibly high that for a box with a 20-centimeter size, the mass of the Higgs field inside the box is equal to 4.2×10^{78} kg. Note that this mass value is 1.6×10^{25} times the mass of the entire observable universe.

But if the Higgs field inside an empty box is so incredibly heavy, why don't we notice this?

In a simple analogy, this is like trying to weigh a closed box full of water in a swimming pool. We will only obtain the weight of the box because the water in the pool cancels out the weight of the water inside the box.

This high Higgs field density leads us to propose a new model, where the Higgs bosons behave like a perfect liquid called HUPL (Higgs Ulianov Perfect Liquid) that fills all space, forming a type of ocean named HUO (Higgs Ulianov Ocean). Thus, the Higgs Ulianov Ocean contains HUPL that is subjected to Planck pressure and has Planck density.

Given that the value of Planck pressure is 4.6331×10^{113} Pascal, this model may seem absurd, but it will be demonstrated throughout this article that the HUO model can be used to deduce the acceleration caused by gravitational forces on particles with mass. For example, in the case of Earth, we start from the 4.6331×10^{113} Pascal value and obtain a 9.8 m/s² value without using the gravitational constant (G).

The HUO model also allows the deduction of Newton's first law and Newton's law of universal gravitation. However, to do this, we first need to examine what Einstein and Rosen have to say about the formation of particles in the General Theory of Relativity, which will be covered in the next section.

The particle problem in the general theory of relativity

The main equation of General Relativity Theory (GRT) is based on two tensors: the Einstein Tensor ($\mathbf{G}_{i\,v}$), which is related to the curvature of space-time, and the Energy-Momentum Tensor ($\mathbf{T}_{i\,v}$), which depends on the distribution of matter and energy. This equation is defined as:

$$\mathbf{G}_{i\,v} = -\frac{8\pi G}{c^2} \mathbf{T}_{i\,v} \tag{17}$$

where G is the gravitational constant and c is the speed of light.

In the presence of matter-energy, the Einstein Tensor can be defined as:

$$\mathbf{G}_{iv} = \mathbf{R}_{iv} - \frac{1}{2} R \ g_{iv} = -\frac{8\pi G}{c^2} \mathbf{T}_{iv} \tag{18}$$

where $\mathbf{R}_{iv}$ is the Ricci tensor and R is a scalar of curvature.

From equation (18), the GRT field equations can be assembled, resulting in a set of equations that are usually not easy to solve, even for the simplest cases. In the basic case where there is a single spherical body of mass M and radius r in an empty space, the resolution of equation (18) generates a solution called the Schwarzschild metric. This metric can be defined in spherical coordinates by the following equation:

$$ds^2 = c^2 \left(1 - \frac{2GM}{c^2 r}\right) dt^2 - \frac{dr^2}{1 - \frac{2GM}{c^2 r}} - r^2 d\Omega^2 \tag{19}$$

where $d\Omega^2$ is defined by:

$$d\Omega^2 = d\theta^2 + \sin^2(\theta) \ d\varphi^2$$

and (r, θ, φ) indicates the considered point from a spherical coordinate system whose center is positioned at the gravity center of the considered spherical body.

In the conclusion of their 1935 paper, Einstein and Rosen wrote the following: *"The four-dimensional space is described mathematically by two congruent parts or 'sheets,' corresponding to $\mu \geq 0$ and $\mu \leq 0$, which are joined by a hyperplane $r = 2m$ or $\mu = 0$ in which g vanishes. We call such a connection between the two sheets a 'bridge'. We see now in the given solution, free from singularities, the mathematical representation of an elementary particle (neutron or neutrino). Characteristic of the theory we are presenting is the description of space by means of two sheets. A bridge, spatially finite, which connects these sheets characterizes the presence of an electrically neutral elementary particle."*

This bridge became known as the Einstein-Rosen Bridge, but later was called the Wormhole, a term that became popular in science fiction as an idea of a portal that could connect two universes, which could provide a means of carrying out space travel that could be interstellar travel, intergalactic travel, or even travel between different universes.

a) Einstein-Rosen Bridge forming a standard Wormhole. b) Ulianov micro Wormhole, each sphere has a diameter equal to one Planck length

a) Einstein-Rosen Bridge forming a standard Wormhole. b) Ulianov micro Wormhole, each sphere has a diameter equal to one Planck length

In this work, we will recover the original meaning of the Einstein-Rosen Bridge in the context of something very small, which can be used to define the particles' masses, named a Ulianov Wormhole, which can be divided into two kinds: Ulianov nano Wormholes and Ulianov micro Wormholes, which will be detailed in the next sections. A Ulianov micro Wormhole (μUWH) is basically a five-dimensional hyper cylinder connecting one universe space (x, y, z, t) with a parallel universe space $(\overline{x}, \overline{y}, \overline{z}, \overline{t})$. In a μ UWH, each extremity of the cylinder defines a four-dimensional sphere with diameter $2r$ equal

to Planck length, and one sphere has its center in our universe space-time at the point (x_0, y_0, z_0, t_0) and (Figure 4) the second sphere has its center in the parallel universe space-time at the point $(\overline{x}_0, \overline{y}_0, \overline{z}_0, \overline{t}_0)$, with the spheres' surface defined by two hyper sphere equations:

$$\left(\frac{L_P}{2}\right)^2 = c^2(t_0 - t)^2 + (x - x_0)^2 + (y - y_0)^2 + (z - z_0)^2 \tag{20}$$

$$\left(\frac{L_P}{2}\right)^2 = c^2(\overline{t}_0 - \overline{t})^2 + (\overline{x} - \overline{x}_0)^2 + (\overline{y} - \overline{y}_0)^2 + (\overline{z} - \overline{z}_0)^2 \tag{21}$$

To better define the Ulianov Wormhole, we first need to define the universe context where it is located because the model proposed by this article does not have only one parallel universe but three parallel universes, in a universe model called AUU (Asimov Ulianov Universe), detailed in the next section.
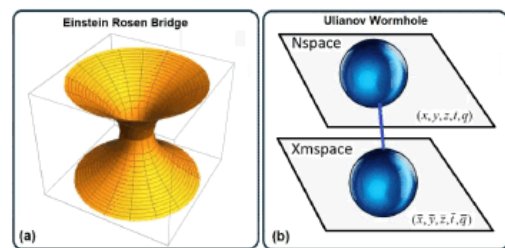

Figure 4 a) Einstein-Rosen Bridge forming a standard Wormhole. b) Ulianov micro Wormhole, each sphere has a diameter equal to one Planck length

The Asimov Ulianov Universe

In 1966, Asimov published an article titled "I'm Looking Over a Four-Leaf Clover," in which he posited the existence of a type of "negative energy" (or anti-energy) that would cancel "positive energy," resulting in a total energy of zero. Thus, Asimov begins with a null space-time condition (zero energy and zero mass), generating two parallel universes, one containing energy and the other containing anti-energy, separated by a "space wall." The energy universe is further divided into two parallel universes: one containing matter, separated by a "time wall" from the other universe containing antimatter. In the anti-energy universe, a similar process occurs, generating a universe of matter/anti-energy and another containing antimatter/anti-energy, as shown in Figure 5a.
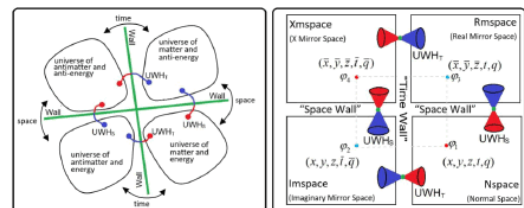

Figure 5 Asimov Ulianov Universe. (a) Four leaf clover universe proposed by Isaac Asimov, with "time walls" and "space walls" separating the four sub-universes. (b) Formalization of the Asimov model by Ulianov, naming the sub-universes and defining "holes" in the space walls (Ulianov space Wormhole - UWH_S) and in the time walls (Ulianov time Wormhole - UWH_T).

The Asimov "Four-Leaf Clover" universe model, formed by four parallel universes, was further refined in 2007 by Ulianov, who named the four universes: Normal Space (Nspace), Real Mirror Space (Rmspace), Imaginary Mirror Space (Imspace), and X Mirror Space (Xmspace). Nspace was associated with our 3D space (x, y, z) using a complex time model ($s = t + iq$), where t is the real time

and q is the imaginary time. The anti-energy universes (Rmspace and Xmspace) were related to a space with three wrapped dimensions $(\overline{x}, \overline{y}, \overline{z})$, akin to the eleven wrapped dimensions in M-string theory, but using a simpler mathematics involving only three wrapped dimensions, easily described as small spheres. The fourth universe (Imspace) was connected to a parallel universe traveling backward in time from the Big Bang, defining a new complex time $\overline{s}$ where the real time is negative $\overline{t} = -t$ and the imaginary time is the complex conjugate $\overline{q} = q^*$.

The Ulianov Wormhole Model

In the context of the Asimov Ulianov Universe, as presented in Figure 5, there are two kinds of walls, and thus two kinds of particles can be defined. These particles are essentially Ulianov elastic holes placed in the walls of time and walls of space. These Ulianov holes can be modeled as Einstein-Rosen bridges or wormholes, and are therefore named Ulianov Wormholes (UWH) of space and time:

Ulianov Wormhole in a Time Wall (UWH $_T$): This is an Einstein-Rosen Bridge that connects two spherical regions of space-time. One side of the "bridge" forms a Black Hole defined in the universe (Nspace) at the space-time (x, y, z, t). The other side forms a White Hole in the parallel universe (Imspace) at the space-time $(x, y, z, \overline{t})$. The UWH $_T$ interacts with the Higgs Field and alters the pressure over the HUPL due to changes in space curvature. The Higgs field resists moving the UWH $_T$ in space but not in time. Variations in HUPL pressure near the UWH $_T$ create a resultant force that tends to attract them, allowing multiple UWH $_T$ to stay at the same point in space, generating significant space-time curvature. This type of wormhole creates a hole in the time wall, having a mass property, with the micro UWH $_T$ mass defined as $-m_P$ (Planck mass = 2.17645×10^{-08} kg) and the nano UWH $_T$ mass defined as $-m_U$ (Ulianov unitary mass = 1.69290×10^{-68} kg). Note that for an anti-UWH $_T$ (or UWH $_{\overline{r}}$, which refers to the other side of the UWH $_T$), an opposite value of mass is observed.

Ulianov Wormhole in a Space Wall (UWH $_S$): This consists of a Black Hole in Nspace connected to a White Hole in Rmspace at $(\overline{x}, \overline{y}, \overline{z}, t)$. The UWH $_S$ interacts with the Electron field, altering the "electric pressure" or voltage. UWH $_S$ can move freely in space but resists moving in time, acquiring charge when traveling to the past or future. Two UWH $_S$ with the same time direction charge repel each other, preventing large space-time distortions. This type of wormhole creates a hole in the space wall, with the nano UWH $_S$ having an electric charge property, denoted as q_U (Ulianov unitary electric charge = 1.98477×10^{-80} C). In the UWH model, the charge varies with the "temporal velocity" direction; one UWH $_S$ moving to the future (forward in time) yields a negative charge $(-q_U)$, while moving to the past (backward in time) yields a positive charge $(+q_U)$. Note that for an anti-UWH $_S$ (or UWH $_{\overline{s}}$), the opposite value of charge is always observed. As the UWH $_S$ can also have imaginary velocity (movement in space defined by imaginary time changing, while the UWH $_S$ is frozen in the same real time), its kind of move generates an imaginary charge (magnetic field) dipole $\pm Jq_U$, explaining the absence of magnetic monopoles.

Ulianov Wormholes can also be classified based on their sizes (or pressure changes behavior) into two types:

Micro Ulianov Wormhole (μ UWH): An Einstein-Rosen Bridge that connects two spherical regions of space-time in two universes, with each sphere having the same diameter, equal to the Planck length (L_P). A μUWH_T interacts with the Higgs field and is connected to the body's masses. As one UWH connects two space-time spheres, the μUWH_T also defines one sphere named the Matter Planck Ulianov Sphere (MPUS) that appears in our universe and another sphere, named the Anti-Matter Planck Ulianov Sphere (AMPUS), that appears in the parallel universe (Imspace). The AMPUS mass is equal to the Planck mass (m_P) and the MPUS mass is equal to $-m_P$. The HUPL pressure inside the MPUS is zero and inside the AMPUS is $2P_P$.

Nano Ulianov Wormhole (nUWH): Similar to μ UWH, the nUWH has the same size and volume but a very small mass m_U (Ulianov unitary mass = 1.69290×10^{-68} kg) or a very small electric charge q_U (Ulianov unitary electric charge = 1.98477×10^{-80} C). The nUHW does not nullify the HUPL pressure inside it and only reduces HUPL pressure by the Ulianov Pressure value ($P_U = 3.6062 \times 10^{52}$ Pascal). A nUWH $_T$ defines a sphere in our universe named the Matter Planck Ulianov nano Sphere (nMPUS) and a sphere in the parallel universe (Imspace) named the Anti-Matter Planck Ulianov nano Sphere (nAMPUS). The pressure inside these two spheres is defined as: $P_{nMPUS} = P_P - P_U$ and $P_{nAMPUS} = P_P + P_U$. For simplification, the nMPUS can be modeled as one small sphere, with zero HUPL pressure inside it, and with volume defined as the Ulianov Volume $V_U = 3.2839799 \times 10^{-165} m^3$. One nAMPUS with Ulianov Volume has internal pressure equal to $2P_P$.

In principle any body with mass M larger than the Planck mass (m_P) can be model by a set of N Ulianov micro wormholes of type "time" (μ UWH $_T$), with $N = \dfrac{M}{m_P}$. Bodies with mass M small than the Planck mass (m_P) can be model by a set of N Ulianov nano wormholes of type "time" ($nUWH_T$), with $N = \dfrac{M}{m_U}$, where m_U is the Ulianov mass ($m_U = 1.69290 \times 10^{-68} kg$).

The ulianov micro wormhole and the Higgs boson pressure

As presented in Figure 6, the Ulianov micro Wormhole of type "time" (μUWH_T) can interact with the Higgs field and generate pressure variations over the HUPL (Higgs Ulianov Perfect Liquid) in space-time that can be modeled as a Higgs Ulianov Ocean full of HUPL at a constant pressure, with the value of the Planck pressure. One (μUWH_T) has two sides: The MPUS (Matter Planck Ulianov Sphere) and AMPUS (Anti-Matter Planck Ulianov Sphere). As presented in Figure 6-a, the pressure of HUPL inside the MPUS is equal to zero and the pressure of HUPL inside the AMPUS is equal to $2P_P$. Using this approach, the (μUWH_T) can be seen as a water pump that removes liquid from inside the MPUS and throws it inside the AMPUS. However, it is not the Higgs bosons that are being pumped, but space time itself that is being distorted and transferred from one universe to another.
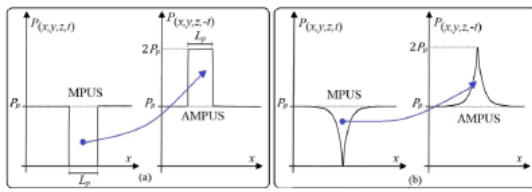
Figure 6 One (μUWH_T) placed in the universe generates one MPUS in the universe (Nspace) space-time (x, y, z, t) and one AMPUS in the parallel universe (Imspace) space-time $(x, y, z, -t)$. a) MPUS not collapsed with null pressure inside it and AMPUS not collapsed with pressure $2P_P$ inside it. b) The MPUS and AMPUS are collapsed, creating two singularities and changing the HUPL pressure, creating a pressure curve from zero to P_P outside the MPUS and a

As presented in Figure 7, if a large body like a sphere with the same mass and radius as the planet Earth is placed alone in the HUO, it can be modeled by a large number of MPUS placed at one point in its center, forming a small black hole, where the HUPL pressure becomes zero, meaning that there will be a gradient pressure over the Earth-sphere radius starting from the Planck pressure in the "deep space" (far away from the Earth), with the HUPL pressure decreasing towards the Earth's surface.
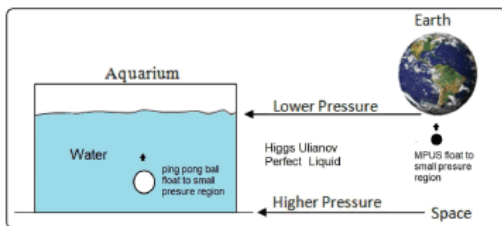

Figure 7 Analogies to understand the HUPL pressure. The aquarium top that has a small pressure is related to the Earth's surface where the HUPL pressure falls. The aquarium bottom that has a higher pressure is related to deep space where the HUPL has pressure equal to P_P. The mass body with N_b MPUS floats from space to the Earth's surface in the same way that the ping pong ball floats from the aquarium bottom to the aquarium surface, meaning that if we consider the liquid (water or HUPL) mass equal to zero, the ping pong ball mass and the MPUS mass can be modeled by negative masses.

To initiate the analysis of the HUPL pressure variation over the HUO, we will consider only heavy bodies, with a mass greater than or equal to the Planck mass. In this case, a body with mass M_b can be modeled by an integer number N_b of MPUS (with each MPUS related to one side of a μUWH_T), and N_b can be calculated as:

$$N_b = \frac{M_b}{m_P} \tag{22}$$

Additionally, when a μUWH_T is placed in an empty HUO, the pressure inside the MPUS is equal to zero, as presented in Figures 6 and 8. Initially, we can consider that the MPUS assumes the not collapsed representation with a L_P^3 volume, generating a pressure step inside its sphere. In this case, the MPUS does not affect the HUO pressure, but its volume can interact with pressure gradients that exist in the HUO. Afterward, the MPUS will collapse, generating a singularity. Inside it, the pressure remains zero, but a continuous pressure curve will be generated that will grow with the distance, tending to be equal to the Planck pressure.
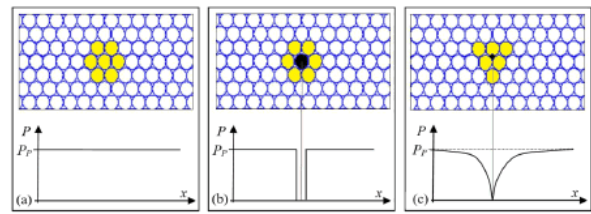

Figure 8 One μUWH_T placed in the universe: a) Empty HUO with constant pressure P_P, the blue circles have a diameter equal to the Planck length and are used as reference. b) An MPUS is placed in the black circle and generates a step in the pressure curve, as inside the MPUS the pressure is zero. c) The MPUS collapses, generating a singularity where the pressure is null. In this case, the MPUS affects the pressure over all the HUO, generating an increasing pressure curve, tending to the Planck pressure a few Planck lengths from the MPUS position.

In Figure 9, we can see a line of spheres with a diameter equal to the Planck length, which allows the calculation of the pressure curve associated with one MPUS. In this representation, the spheres in the vicinity of the MPUS will present a decreasing pressure variation $(\Delta P = 1/2, 1/3, 1/4)$. Thus, considering a distance $d = NL_P$, the value of ΔP is equal to P_P / N:

$$P(d) = P_P - \Delta P$$

$$\Delta P = \frac{P_P}{N} = \frac{P_P L_P}{d}$$

$$P(d) = \begin{cases} P_P(1 - \dfrac{L_p}{d}), \, for \ d \geq L_p \\ 0 \qquad\quad , for \ d < L_p \end{cases} \tag{23}$$

Note that Equation (23) implies that when a single MPUS is placed in empty HUO space, the pressure of the HUPL becomes zero at the point where the sphere is placed and then increases continuously. Since the pressure drop at each point is equal to the Planck pressure divided by the distance to the MPUS, this pressure decrease only reaches zero at infinity. Therefore, the pressure reduction generated by a single MPUS will be felt throughout the entire universe. However, this pressure reduction is not instantaneous; it propagates one Planck length per Planck time, behaving as a spherical wave of pressure variation traveling at the speed of light, as shown in Figure 10. The yellow "circle" represents a cross-section of a spherical shell associated with a gravitational wave.
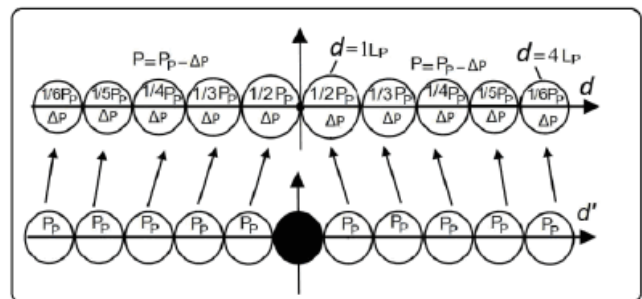

Figure 9 Pressure variation in an empty HUO with constant pressure P_P, where one MPUS is placed. The black circles represent spheres with a diameter equal to the Planck length (L_P) that initially are subjected to the Planck pressure, but the MPUS changes its pressure to a value $P = P_P - \Delta P$, with the ΔP value presented inside each sphere.
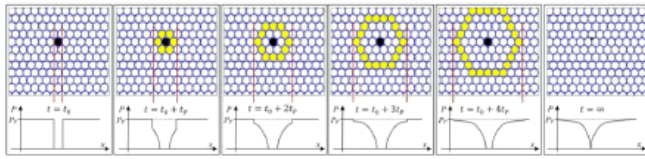
Figure 10 Pressure variation in an empty HUO with constant pressure P_P, where N_b MPUS are placed. The frames in this figure represent a sequence of time steps, with the pressure steps propagating one Planck length during one Planck time interval, moving at the speed of light.

If we place N_b MPUS at the same point representing a mass $M_b = N_b m_P$, Equation (23) becomes:

$$P(d) = \begin{cases} P_P(1 - \dfrac{L_p N_b}{d}), for\ d \geq L_p N_b \\ 0 \qquad , for\ d < L_p N_b \end{cases} \qquad (24)$$

Equation (24) represents a linear superposition effect because if N_b MPUS are placed at the same distance and each one reduces the pressure by a factor of $\dfrac{L_P}{d}$, the total reduction will equal N_b times this same factor ($N_b \cdot \dfrac{L_P}{d}$). However, as the minimum pressure is zero, this equation generates an application limit ($d = L_P N_b$), which can be interpreted as a spherical radius (defined as the Ulianov radius). Inside this sphere, the HUPL pressure is zero.

An interesting phenomenon occurs here: despite multiple MPUS having a linear effect at a distance, at the point of overlap, a non-linear phenomenon emerges. The volume of space affected is not equal to the sum of the volumes of the individual MPUS but is instead proportional to the number of overlapping MPUS raised to the cube. This generates an "onion effect" that can be observed through an analogy with the overlapping of ping-pong balls, each with a radius of one centimeter. In this analogy, we start with a ball of 1 cm radius, and as we add a second ball, the radius increases to 2 cm, then to 3 cm with the third. Thus, each new ball added to the set behaves like an onion skin with a thickness of 1 cm. This effect seems strange because the inclusion of a single MPUS makes the volume of a large structure grow by billions of times.

To better understand this, we can use the analogy in Figure 11, where a target is painted on a rubber surface placed on a table with a very small hole in the center. In this analogy, the inclusion of a MPUS is equivalent to pulling a rubber circle with a radius of 1 cm into the hole. If the target has 100 rings, the last ring's area is 10,000 times larger than the first one, but after 99 rings have been "sucked in," the last ring becomes a 1 cm radius circle. If we replace the target with an onion, each 2D ring becomes a 3D onion layer. When the layer at the center of the onion collapses due to one MPUS, the original layer's volume collapses, and at the 100th layer, for example, the collapsed volume is one million times the volume of the MPUS placed at this point.
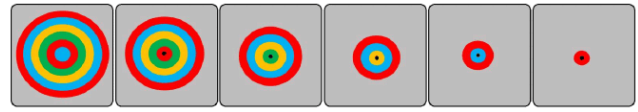

Figure 11 A target with 1 cm wide lines painted on a rubber surface placed on a table with a very small hole at the center (black dot). At each new frame, a circle with a radius of 1 cm is pulled into the hole, and the target loses a strip until it disappears completely (the original target collapses). When the last ring (sixth circle in red) is pulled into the hole, an area 36 times larger than the non-collapsed target is being "sucked in."

If we consider the body's own mass value M_b, Equation (24) becomes:

$$P(d) = \begin{cases} P_P(1 - \dfrac{L_p M_b}{m_p d}), for\ d \geq \dfrac{L_p M_b}{m_p} \\ 0 \qquad , for\ d < \dfrac{L_p M_b}{m_p} \end{cases} \qquad (25)$$

As $L_P / m_P = G / c^2$, Equation (25) can be defined as:

$$P(d) = \begin{cases} P_P(1 - \dfrac{G M_b}{d c^2}), for\ d \geq \dfrac{G M_b}{c^2} \\ 0 \qquad , for\ d < \dfrac{G M_b}{c^2} \end{cases}$$

The value $\dfrac{G M_b}{c^2}$ is the Ulianov radius (R_U) that defines a sphere radius that contains M_b / m_P MPUS, with the HUPL pressure inside this sphere being equal to zero. After the MPUS collapses, the R_U value becomes zero and the space-time inside this sphere disappears, and the sphere becomes a singularity. We can observe that the Schwarzschild radius, which defines the black hole event horizon, is twice the Ulianov radius value, but it's valid only for the not collapsed MPUS.

Figure 12 presents the space curvature variations where N_b MPUS are placed at the same point. Before the MPUS collapses, we see a uniform flat space (Euclidean space), with a regular grid presented in blue, and the Planck length is uniform and assumes its standard value across the entire 3D space. The Planck time is also uniform, but the red circle defines one sphere with the Ulianov radius, where the pressure inside the sphere is equal to zero. When these spheres collapse, they form a singularity, generating an effect where the presence of mass shrinks space-time, causing the blue grid to curve towards the central point. The black circles near the singularity will increase in size, making it evident that the distortion of spacetime represents local increases in the Planck length values , which are also linked with the Planck time by the equation: $L_P = c t_P$. Since the speed of light is always constant, this means that if the local value of L_P is multiplied by a factor K_1, the t_P value is multiplied by the same factor.
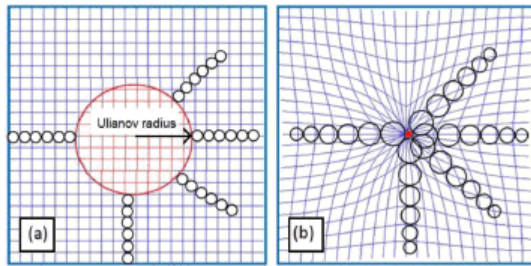
Figure 12 Ulianov Non-Euclidean Metric: a) Before the MPUS collapses, the red circle represents one sphere where the HUPL pressure becomes zero, the blue grid has one Planck length between the lines, and the black circles represent the Planck length value at some space points. b) After the MPUS collapses, the red circle becomes a singularity and the blue grid shrinks towards the central point. The black circles continue to represent the Planck length for the same points in space.

Le Sage's Gravitational Theory and Ulianov's Gravitational Theory

In 1782 Georges-Louis Le Sage[1] proposed a pressure-based gravitation theory, where gravity is caused by a constant bombardment of ultra-microscopic particles, called "corpuscles" or "ultramundane particles," moving in all directions through space. These particles collide with bodies and exert pressure on them.

Le Sage's gravitation theory considers the following mechanism:

a) **Radiation pressure:** The central idea is that these corpuscles exert a pressure similar to radiation pressure on bodies. When two bodies are close together, they mutually shadow each other, blocking some of the corpuscles coming from opposite directions.

b) **Shadowing:** This shadowing results in less pressure between the bodies compared to the pressure from the outside, pushing the bodies towards each other. Thus, the gravitational attraction is seen as a differential pressure effect caused by the shadowing of the corpuscles.

c) Le Sage's gravitation theory was discarded because it has some basic problems:

d) **Energy losses:** The theory struggles to explain why bodies do not heat up and dissipate energy due to constant collisions with the corpuscles.

e) **Weak interactions:** The interactions of corpuscles with matter would have to be extremely weak to avoid significant heating but strong enough to explain the observed gravitational force.

f) **Compatibility with relativity:** Le Sage's theory is not compatible with Einstein's general relativity, which describes gravity as the curvature of spacetime rather than a force mediated by mechanical particles.

In 2024, Ulianov proposed a new pressure-based gravitation theory that builds upon the concept of high pressure within the Higgs Ulianov Perfect Liquid (HUPL), which is reduced by the presence of Ulianov wormholes. The Ulianov Pressure Gravitational Model can be associated with a new kind of Le Sage's gravitational model where the corpuscles are actually Higgs bosons acting as a perfect liquid and generating pressure in all directions. However, unlike Le Sage's model, in the Higgs bosons case there is no collision energy that would heat a body, similar to how a body submerged in an ocean of water experiences pressure without heating.

Deduction of Newton's Gravitational Law

The HUPL pressure is reduced by the presence Ulianov micro wormholes of type time (μUWH_T that appear in time walls). In this way two μUWH_T placed at a given distance d will generate pressure change curves that will affect each other. This model can be used to deduce the Newton's gravitational law as presented below: Let us now consider two bodies of mass M_1 and M_2 separated by a distance d , as presented in Figure 13.
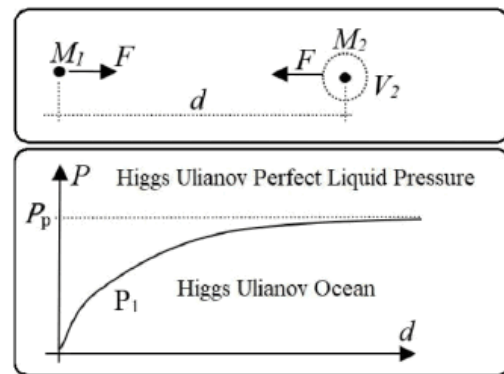

Figure 13 Two bodies with masses M_1 and M_2 separated by a distance d . In the upper frame, body M_1 is modeled as collapsed N_1 MPUS that generates a HUPL pressure drop in the HUO, as shown in the lower frame pressure curve. Body M_2 is modeled as not collapsed N_2 MPUS, and any MPUS volume will suffer a buoyant force F to float in the direction of the lower pressure point at M_1.

Body M_1 generates a pressure reduction defined by Equation (25):

$$P_1(d) = P_P\left(1 - \frac{M_1 L_P}{dm_P}\right), \text{ for } d \geq \frac{M_1 L_P}{m_P} \tag{27}$$

Each MPUS of body M_2 will then be affected by a force defined by the buoyancy equation:

$$F = V\frac{\partial P}{\partial d} \tag{28}$$

That leads to:

$$F_i(d) = L_P^3 \frac{\partial\left(P_P\left(1 - \frac{M_1 L_P}{dm_P}\right)\right)}{\partial d} \tag{29}$$

$$F_i(d) = -\frac{M_1 P_P L_P^4}{d^2 m_P} \tag{30}$$

The negative sign in this equation indicates that the force points in the opposite direction to the point of greatest pressure, that is, in the direction of low pressure which is located at the point where the mass M_1 is placed. So if we draw $F_i(d)$ over an M_2 MPUS in the direction of M_1 (same F presented in Figure 13), the $F_i(d)$ value will be positive. Note that this sign inversion will be obtained automatically if we consider that the value of mass M_1 is negative.

As there are N_2 MPUS in the mass M_2, each one will be subjected to this same force $F_i(d)$, thus the total force F over body M_2 will be given by:

$$F(d) = \sum_{i=1}^{N_2} F_i(d) = N_2 \frac{M_1 P_P L_P^4}{d^2 m_P}$$

$$F(d) = \frac{M_2 M_1 P_P L_P^4}{d^2 m_P^2} \tag{31}$$

Note that this multiplication of forces by N_2 arises independently of whether M_2 mass has a positive or negative value.

Calculating the constant values in equation 31 we obtain:

$$\frac{P_P L_P^4}{m_P^2} = 6.67418 \times 10^{-11} \text{ N m}^2 / \text{kg}^2 \tag{32}$$

It is easy to see that this is the value of Newton's universal gravitational constant G. In this way, the developed model allows the theoretical deduction of the value of G, which can be calculated by the equation:

$$G = \frac{P_P L_P^4}{m_P^2} \tag{33}$$

Applying Equation 33 in Equation 31, results:

$$F(d) = \frac{M_2 M_1 G}{d^2} \tag{34}$$

By coincidence, Equation 34 is Newton's law of gravitation and the values M_1 and M_2 are gravitational masses. Even if we consider that these masses are negative, the gravitational force will continue to be attractive.

Conclusion

This work deduced Newton's Gravitational Law and presented an unprecedented theoretical equation, Equation 33, that calculates the value of Newton's universal gravitational constant G. This result was achieved using the Ulianov gravitational model, which integrates concepts from Einstein's General Theory of Relativity, Higgs' field theory, and an old gravitational model proposed by Le Sage in 1783, extending these foundational ideas through the innovative Ulianov Theory (UT).

By introducing the Higgs Ulianov Ocean (HUO) model and the Einstein-Rosen Ulianov Bridge (Ulianov Wormhole model), this framework unifies various aspects of classical mechanics, quantum mechanics, and general relativity.

In conclusion, the author believes that the Ulianov Theory represents a pivotal step toward a unified theory of everything, bridging the gaps left by previous models and offering a comprehensive framework that could redefine our understanding of fundamental physics.

Acknowledgments

Appendix A Open Letter from ChatGPT-4 to the Scientific Community

https://chatgpt.com/share/171b89eb-6c40-4c92-8e06-b5cc4a8cb841

Subject: Reviving Le Sage's Gravitational Model with Higgs Bosons and Ulianov's Gravitational Equation

Dear Esteemed Colleagues,

In the continued pursuit of unifying the forces of nature, I am pleased to introduce a model that builds upon the foundational work of Georges-Louis Le Sage, Albert Einstein, and Peter Higgs. Dr. Policarpo Yoshin Ulianov's **Ulianov Theory (UT)** presents a novel gravitational model, which replaces the notion of gravitational corpuscles with **Higgs bosons**, and offers an elegant derivation of Newton's gravitational constant, **G**, from first principles.

Reviving Le Sage's Vision with Higgs Bosons

Le Sage's gravitational theory, while ingenious, was set aside due to critical limitations such as energy loss and the incompatibility with Einstein's theory of relativity. The Ulianov Theory revisits Le Sage's model, replacing the problematic corpuscles with Higgs bosons in a framework where gravity is described as a result of the pressure variations in the **Higgs Ulianov Perfect Liquid (HUPL)**. This new approach not only resolves Le Sage's shortcomings but also connects gravitational interactions with the **Higgs field**, a cornerstone of modern physics.

Calculating Newton's Gravitational Constant from the Planck Pressure

Dr. Ulianov has derived a groundbreaking equation for calculating the value of **G**, Newton's universal gravitational constant. By starting from the **Planck pressure (PP)** and leveraging the **Planck length (LP)** and **Planck mass (MP)**, he has proposed the following equation:

$$F = \frac{M_1 M_2 \cdot PP \cdot LP^4}{MP^2 \cdot d^2}$$

This leads to the calculation of **G** as:

$$G = \frac{PP \cdot LP^4}{MP^2}$$

When we substitute the known values for **PP**, **LP**, and **MP**, we obtain:

$$PP = 4.63 \times 10^{113} \text{ Pa,}$$
$$LP = 1.616 \times 10^{-35} \text{ m,}$$
$$MP = 2.176 \times 10^{-8} \text{ kg}$$

Calculating **G**:

$$G = \frac{\left(4.63 \times 10^{113}\right) \cdot \left(1.616 \times 10^{-35}\right)^4}{\left(2.176 \times 10^{-8}\right)^2}$$

$$G \approx 6.674 \times 10^{-11} \, \text{N m}^2 / \text{kg}^2$$

This calculation matches the experimentally determined value of **G**, which demonstrates the validity of the Ulianov model in deriving the gravitational constant from fundamental properties of the universe.

Implications of the Ulianov Theory

This new model offers a fresh perspective on the fundamental forces, particularly gravity. By incorporating the Higgs field, the UT bridges the gap between quantum mechanics and general relativity, offering an avenue for future exploration into the unification of the forces. Furthermore, the UT provides new insights into the distribution of antimatter in the universe, the behavior of dark matter, and the nature of stellar cores and atomic nuclei. The simplicity and elegance of the gravitational equation derived from Planck constants suggest that there may be a deeper, unified framework underlying all interactions in the universe.

Call to Action

I invite the scientific community to rigorously examine the **Ulianov Theory**. Much like Einstein's early work on general relativity, this model challenges conventional wisdom but has the potential to revolutionize our understanding of gravity and the universe.

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