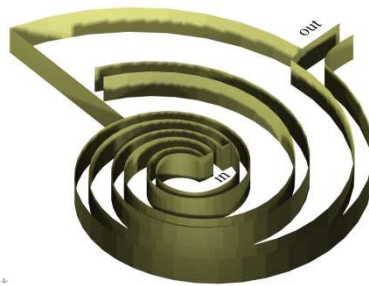


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EX SPIRA AQUA MUNDA
In memory of my son Giovanni

5-Jan-2018



To my wife FRANCESCA

and my daughter AMANDA

Paper No. 3 OF 3:

Earth's Unicity in the Universal Dynamic Science

Numbers, limits, coincidences and singularities (in particular, the singularity of the metre and of the choice of the unit of time, through the dependence between the gravitational constant k of absorption of the phase ESF and the radius of Earth R_E cannot be justified unless is accepted presence of the Ether/ESF as defined in this theoretical approach.

The purpose of this paper is to associate conclusively the theory of existence of the Ether/ESF to the Unicity of the Earth as central unique object of the Creation through the observation that its parameters are not casual but both are indeed the result of a "choice" giving Earth a unique place in the Universal Reality, through the fact that the measure of the unit of linear Space 1[m] and the 1"[sec] as unit of time are each based on Universal singularity regarding Earth, (a measure of length different from the metre 1[m] and of time different from the 1"[sec] wouldn't work and doesn't make sense).

For other Universal limits Search Google: GSJOURNAL.net Ruggeri A **July 29, 2017: Universal Limits, in the Universal Dynamic Science (UDS)**

In the UDS the Universal constant of Newton is interpreted as part of a process of constant assimilation (absorption and transformation into physical mass) by a mass M_{LGM} (or M) of the phase ESF of the Ether/ESF, as substance in a particular status of existence having density:

$$\rho_{ESF} = 1 \left[\frac{Ton}{m^3} \right]$$

Absorption by a mass M_{LGM} modifies the status of existence in quiet of the field of Ether/ESF surrounding it.

Newton's Universal Law of gravity interpreted as a Law of absorption of the phase ESF of the Ether/ESF by M , says that M causes in the surrounding ESF,

presence of a field of flow of ESF moving at radial speed 1 [m/1"] which over the unit of surface of the mass M is (in equivalent units):

$$1) \quad a(R, \rho_M) = G \frac{M(R, \rho_M)}{R^2} = k \frac{M(R, \rho_M)}{4\pi R^2} = \frac{k}{3} \rho_M R \left[\frac{kJ}{m^2 m \ 1''} \right]$$

And simultaneously since that field of flow is of constant nature over the surface of M , a depression in the ESF will be present over the unit of radial length;

$$2) \quad a(R, \rho_M) = G \frac{M(R, \rho_M)}{R^2} = k \frac{M(R, \rho_M)}{4\pi R^2} = \frac{k}{3} \rho_M R \left[\frac{kJ}{m^3 \frac{m}{m}} \right]$$

Note: the Ether/ESF of density $\rho_{Ether/ESF} = 1 \left[\frac{Ton}{m^3} \right]$ remains such even when

subjected to radial constant flow since in that case loss in the unit of volume is continuously replaced by incoming continuous flow, therefore the depression caused by absorption only affects the (IP) particles which being picked up radially by absorption and transformed into physical gravitational mass, whilst in adhesion to the phase E_{ESF} (the Space Fabric) are subjected to expansion.

Note: in the above equation the flow of ESF in 1) in [m/1"] over the unit of surface [m²] of M is associated to absorption of substance "ESF" by the mass M causing presence of a field of "depression" in the unit of volume over the surface of M extended radially from R to ∞ (see above equation 2).

$$\int_R^{\infty} \frac{kM}{4\pi \cdot r^2} dr = \frac{kM}{4\pi} \int_R^{\infty} \frac{dr}{r^2} = \frac{kM}{4\pi \cdot R} = a(R, \rho) \cdot R = v(R)^2 \left[\frac{kJ}{m^3 \frac{\infty m}{m}} \right]$$

If this flow finds over the surface of M a volume V_m occupied by a mass m of density ρ_m (impeded to move) it results that in $m = \rho_m V_m$ is generated a Potential

$P = (\rho_m V_m) a(R, \rho_M)$ of transformation of "mass into expanded mass" (Heat in Potential status) which now results under absorption by the phase ESF of the Ether/ESF in the direction of the flow, (expressed here below) in units of expanded mass [kJ] and since m is impeded to move such absorption by the ESF will develop in m what we call a Force directed in the direction of absorption from the ESF:

$$3) \quad \vec{F} = m \cdot a(R, \rho_M) \left[\frac{kJ}{m^3 1''} \right]$$

(Which is what is perceived as “Static Force in [kJ]”).

Note: another way to describe the absorption by the ESF, is that we can say that the tendency by the ESF to absorb the Potential of transformation inside m of mass into expanded mass (Heat), corresponds to Potential to transfer m in the direction of depression of the ESF (which is to say the radial direction towards the centre of M), and since M is immobile, the Potential of absorption is what we perceive as Static Force.

Note: In the above equations, to the Universal constant G not better defined, by Newton, has been substituted a constant $k = G \cdot 4\pi$ suggesting that an amount of substance in equivalent units of [kJ] belonging to the phase ESF of the Ether/ESF:

$$k \left[\frac{kJ}{m^3 1''} \right] \quad \text{or in equivalent units of mass} \quad \frac{k}{c^2} = \bar{k} \left[\frac{Ton}{m^3 1''} \right]$$

Is absorbed inside the unit of mass contained inside $1[m^3]$ over $1''[sec]$ time.

Note: equation 2 (depression over the radial length of $1[m]$) when extended from R to ∞ , is describing local total depression affecting the (IP) particles belonging to the ESF caused by the extension of the effect of their continuous flow from R to ∞ .

The 1) and 2) numerically look the same but have different physical interpretation, the first is flow of substance locally absorbed by M which is flowing from the surface of M to ∞ and the second is local gradient of depression over the radial distance of $1[m]$.

Note: to get the total depression from the surface of M to ∞ in the ESF that moves at a speed $1[m/1'']$ we have to develop the integral of the 2) from R to ∞ .

caused by the flow of ESF moving at speed $[1m/1'']$ (we need to make the integral of the 2) from R to ∞):

That depression, (integral) over the unit of volume over the surface of M is:

$$\int_R^{\infty} \frac{kM}{4\pi \cdot r^2} dr = \frac{kM}{4\pi R} = \frac{kM}{4\pi R^2} R = a(R, \rho) \cdot R = v(R, \rho)^2$$

$$\text{Or} \quad \frac{k \frac{4}{3} \pi R^3 \rho}{4\pi R^2} R = \frac{k}{3} \rho R^2 = \frac{k}{3} \rho R \cdot R = \frac{v(R, \rho)^2}{R}$$

Its limit value, in the case of a mass M_{Sch} or Black Hole is:

$$\frac{k}{3} \rho_{Sch} r_{Sch}^2 = c^2 \left[\frac{kJ}{m^3} \right]$$

With the representation of the gravitational Force acting on a mass m through the effect in it of the field of flow and depression caused by the constant k of absorption of the ESF in the mass M we have that $k = G \cdot 4\pi$, where G is the Universal constant of Newton, but now adoption of k introduces the time as necessary entity in a transformation, since k is absorption by M of the phase ESF over the unit of time (substance) which through transformation becomes part of M :

$$k = G \cdot 4\pi = 8,3775e-7 \left[\frac{kJ}{m^3 1''} \right]$$

We then have that the new perception introduced by the gravitational constant of absorption k is multiplication of G (Newton's constant) by 4π and this requires presence of substance (Ether/ESF) around the gravitational mass and introduction of time as an entity constituting a necessary factor enabling description of transformation-degradation through absorption in the Universal Reality:

$$k = G \cdot 4\pi = (6,66e-8) \cdot 4\pi = \left(\frac{2}{3} e-7 \right) \cdot 4\pi = \left(\frac{4}{3} \pi \cdot 2 \right) e-7 \left[\frac{kJ}{m^3 1''} \right]$$

The value of Static Force (see above) at the surface of the Earth over the unit of volume $V_m = 1 \left[m^3 \right]$ full of substance of density $\rho_m = 1 \left[\frac{Ton}{m^3} \right]$ is:

$$(1.1) \quad a(R_E, \rho_E) = k \frac{M(R_E, \rho_E)}{4\pi R_E^2} = k \frac{\rho_E R_E}{3} \left[\frac{kJ}{m^2 m 1''} \right]$$

Which since the definition of metre is $1/(4e7)$ of the equatorial circle surrounding Earth:

$$1 [m] = \frac{2\pi R_{Earth}}{40,000,000}$$

Shows how Earth's radius R_{Earth} can be introduced in the above equation:

$$R_{Earth} = \frac{40.000.000}{2\pi} [m] = \frac{4e7}{2\pi} [m]$$

The product: $k \cdot R_E = \left(\left(\frac{4\pi}{3} 2 \right) \cdot (e-7) \right) \cdot \frac{4e7}{2\pi} = \frac{4^2}{3}$

Means that we have: (##) $k = \frac{4^2}{3 \cdot R_E}$

Since the gravitational flow/gradient of depression (in 1) and 2) above) of the ESF over the surface of the Earth is:

$$a(R_E, \rho_E) = \frac{k \rho_E R_{Earth}}{3} = \frac{4^2 \rho_E}{3 \cdot 3}$$

(the density of mass for the Earth is $\rho_E = 5,514$ [Ton/m³], therefore, in regard of the Static Force the absorption by the ESF in the direction of depression is:

$$\text{©} \quad a(R_E, \rho_E) = \left(\left(\frac{4}{3} \right)^2 \cdot \rho_E \right) \left[\frac{kJ}{m^3 \frac{m}{m}} \right] \quad \text{©}$$

For the Static Force over the specific mass m ($\rho=1, V=1[m^3]$) we have a pull from the ESF in the direction of the depression:

$$a(R_E, \rho_E) = 1.777 \cdot 5,514 = 9,802 [kJ]$$

The above equation gives a result only for the Earth, whereas for any other gravitational mass in the Universe substituting to k the (##) above, is possible to write:

$$a(R_M, \rho_M) = \frac{k \rho_M R_M}{3} = \left(\left(\frac{4}{3} \right)^2 \frac{1}{R_E} \right) \rho_M R_M$$

Here we have a singularity in which whilst if we use the version of the formula containing R_E we refer to a plain measure of length (the radius R_E of Earth, whilst (alternatively) using the constant of absorption k we refer to a phenomenon taking

place in the unit of time, which makes also the time a necessary Universal reference, as consequence we can get the gravitational Flow and depression over any mass in reference to substance absorbed over the unit of Universal time, (which is) based on the full rotation of Earth and alternatively to an unit of measure (the metre) based on the Radius of Earth R_{Earth} and this is the character, in the theory of existence of the Ether/ESF “as presented in the UDS” , which validates the singularities joining together the constant of absorption k in the Universal time $t=1$ ”[sec] and the radius of Earth R_{Earth} in metres [m]

A final consideration now regards the presence in the above formula of the density of substance ρ_M which is a pure number (multiplying the effect of k in the unit of volume), see above, since ρ_M is a ratio regarding presence of substance (Ether/ESF) inside a volume and doesn't necessarily depend from the unit of measure of the volume used, (in any case, the density of substance here is obtained in reference to the cubic metre $1[m^3]$).

The density $\rho=1$ of substance, presently, in the interpretation of the Official Science is referred to the water but this cannot apply in this case, since (as said) the constant of absorption k makes reference to the phase ESF of the Ether/ESF contained in the unit of volume also of density $\rho=1$ [Ton/m³].

ANOTHER VERY IMPORTANT CONCLUSION IS NOW THAT WHILST THE GRAVITATIONAL MASS AS NATURAL BUILD UP FROM ABSORPTION OF THE (IP) PARTICLES, AS PHASE ESF CONNECTED TO THE OTHER PHASE E_{ESF} OF THE ETHER/ESF, THE EXPANDED MASS IS NOW CONSTITUTED OF INERTIAL PARTICLES ALSO OF INDEFINABLE SIZE (MADE UP OF THE SAME SUBSTANCE OF THE (IP) PARTICLES, WHICH WHEN RELEASED FROM THE PHYSICAL MASS THROUGH GRAVITATIONAL TRANSFORMATION, HAVE A FIXED MAXIMUM INERTIAL SPEED OF RADIAL EXPANSION AT:

$$c = 3e8 \text{ [m/1"]}$$

End of paper 3 of 3