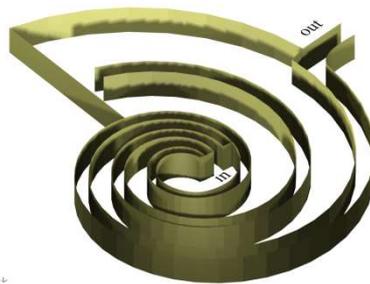


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EX SPIRA AQUA MUNDA  
**In memory of my son Giovanni**

6-Jan-18



To my wife **FRANCESCA**

and my daughter **AMANDA**

# Paper 1 of 3

## The Universe as a BH in expansion

Synopsis of paper 1-2-3): the radius of Earth  $R_E$  in the theory supporting the existence of the Ether/ESF is the key to the measure of the gravitational characters of all the masses  $M(R,\rho)$  in the Universal Reality, making the Earth, by consequence, Unique all over the Universe, (see Paper 3, where the table of gravitational flows of ESF over the surfaces of the gravitational masses is included).

The old centrist conception that the Earth was positioned at the centre of the Universe (with the Hell at the centre of Earth) obviously couldn't be satisfactory and now is replaced by an exact (Scientific) vision with Earth as unique presence of reference for any gravitational entity all over the Universal Euclidean Space.

The ultimate reference, when we consider the Universal Reality, is based on a Black Hole, re-baptized Universe ( $M'_{Sch} > M_{Sch-Rug}$ ) existing in a status of continuous expansion as presented in paper 1) and containing our Earth,.

Paper 2 contains the **Ruggeri's Universal Formula valid for any gravitational mass** which says that the dissipation coming out from a gravitational mass

$M(R,\rho)$  is given by the product between the cube of the ratio of depression  $\bar{\varepsilon}(R,\rho)$  on the Ether/ESF over its surface and of the constant Universal value of

dissipation coming out of a Black Hole:  $F_{D-BH} = \frac{2\pi \cdot c^4}{k} \left[ \frac{kJ}{1''} \right]$  which in itself can

be considered an advanced version (an Epitome) of Kepler 3<sup>rd</sup> Law) in the theory of the Ether/ESF.

## The Universe as a Black Hole in expansion

Ether/ESF theory, "An Universe, is a mass  $M'_{Sch} > M_{Sch-Rug}$ , defined by the Schwarzschild condition, existing as a Black Hole in expansion, (is always larger than the Mass  $M_{Sch-Rug}$ )".

Proof of existence of the Ether/ESF, brings to the conclusion that, we on Earth, live inside a gravitational entity unique in the Universal Reality and is not by chance that our Scientific establishment adopted the metre as unit of measure for the gravitational processes, since the metre 1[m] represents a “physical singularity of Universal character as “the universal unit of linear measure of Space”” connected with the value of the Radius

$R_{Earth}$  (the metre is  $1/(4e7)$  of the equatorial circumference  $2\pi R_E$  of Earth). Time as well is a “physical singularity of Universal character” since the Universal unit of time“ is  $1/86400$  of the time of complete rotation of Earth around its axis (sidereal day), whereas the constant

$k \left[ \frac{kJ}{m^3 1''} \right]$  of absorption of substance in units of mass equivalent from the phase ESF of

the Ether/ESF by the unit of gravitational mass, is “as well a physical singularity of astonishing nature, regarding Earth, since it connects the universal gravitational transformation/degradation of substance in the universal unit of time ruled by the constant of absorption  $k$  with the value of the Radius  $R_{Earth}$  . (See below).

The study of Static Force permitted the development of a formula of gravity containing a Universal constant G but in the Universal Reality nothing is Static as we will see that the Static Force, acting over a mass, is the result of a constant phenomenon of transformation-degradation in time and for that reason the gravitational expression of a Force had to contain also a time factor. The manner in which the gravitational Science studying the generation of Forces evolved can only be justified through adoption of formulations containing singularities of astonishing unique nature, bonding together absorption of ESF ( $k$  , in the unit of Universal time  $1''$  ) and the radius of Earth  $R_{Earth}$  and a Universal time  $1''$  gets defined through a complete Earth rotation under inertial movement which can be reduced to a transformation-degradation directly associated to the universal constant  $k$  of gravitational absorption. All this making Earth “a unique presence in the whole Universal Reality”.

My arguments now, cannot avoid to mention an issue of religious character.

The current stand is blind acceptance, at all times, of doubtful interpretations of extant “scriptures” whereas in terms of “revelations” one must be aware that if the message is a “true one”, the “Supreme Being” from whom it proceeds is overcoming infinitely all our capacities to understand, for this reason those who receive and divulgate His communications are called “prophets” or “messengers”.

His messages thereafter need in all cases to be interpreted since the “truth” that is in them is far beyond our capacity to understand.

When the topic regards the “Creation” and in particular the very “beginnings”, including that of Earth’s, the “vision” infused in the Prophet by the “Supreme Being” is mentioning a

substance which for lack of better adjusted reference is called “Water”, over which the “Spirit of God was present” and then it was added that His Almighty Powers separated the waters of the Heaven from those on Earth etc....

My purpose now is to illustrate that the “Prophet” which wrote or dictated this passage was a messenger of an “absolute truth” i.e. that the Earth as central object of the Creation, contained, as we know, abundance of liquid water as the most necessary ingredient to life, and as we had to discover was convenient to refer all the other pure substances and mixes of them to pure water in liquid status (in terms of “density” or multiple of presence of substance in a volume, in comparison to water). The messenger also called “Water” (for lack of a better name) the substance Ether/ESF, which, in the Universal Reality, is at the origin of all the physical presences and interacts with them at any time.

My theory justifies this religious perception with the presence in the Space surrounding the Earth of a pre-existing substance, “the Ether/ESF” occupying the Space with density equal to water, insofar being a fluid of very special characters, is present, in Space, in a particular condition, in the same amount than water. Ether/ESF is found inside the unit of volume (having the same density of substance as the water present on Earth in liquid status, and in a particular condition).

What up now was intended as a prophetic vision is maturing, after all these centuries into a “Truth” joining Scientific consciousness to it, since this is the first time when is clearly illustrated in Science, the presence of this substance in the Space between the masses occupying the Universal Reality, whilst the Unicity of Earth between these masses is put into formulation through the choice of a unit of measure for the unit of volume, a fact that in Scientific terms must be intended as the choice of 1[m], as a unique indispensable reference of length, tied up to the Radius of Earth.

The definition of meter made in order to explain the nature of things:

Is that 1[m] as unit of length is:

$$40.000.000 \cdot 1 [m] = 2\pi R_{Earth}$$

The cubic unit of volume 1[m<sup>3</sup>] used by modern Science in all scientific measurements of reference, contains “the same amount of substance” as Ether/ESF (in the Euclidean Space) and as Water (on Earth “in special conditions”):

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

Note: in the UDS our reference is always  $\rho_{ESF} = 1 [Ton / m^3]$

Note: the above equation establishes the fundamental principle that says:

**“Space cannot be empty (deprived) of substance”**

To it must be added the corollary saying that:

**“Substance can exist in multiple status inside the Space and that status is expressed through the density factor:  $\rho [-]$  in the unit of volume  $1[m^3]$  as reference to the phase ESF,  $\rho_{ESF} = 1 [Ton / m^3]$ ”**

If we change units of measurement of mass [Ton] into different units [kJ] whose physical value is:

$$1 [kJ] = \frac{1}{c^2} [Ton]$$

We have as consequence that to have  $1[Ton/m^3]$  (inside the unit of volume), is required a density of  $\rho=c^2$  units of [kJ], ( $c^2 [-]$  as a pure number is a density of mass in units of [kJ] in the unit of volume  $1 [m^3]$ ):

$$(EQ) \quad c^2 \cdot 1 [kJ / m^3] = 1 \cdot 1 [Ton / m^3]$$

Note: this is the “equivalence principle” and as can be seen is basically a numeric transformation between units of physical entities, the interesting part following the above equation regards the fact that the effect of gravitation interpreted as a natural phenomenon of absorption in time of the phase ESF, (belonging to the Ether/ESF), is always present around the physical mass and not only generates flow and depressions of the ESF due to absorption originated by the mass but as well deformations, movements of the mass and dissipation of substance when the gravity of a mass transforms it in time into expanded mass under radial absorption by the ESF surrounding it.

All these phenomena can only be interpreted through the introduction of the time as an additional dimension to the three-dimensional Space.

The interpretation of the natural phenomena in terms of gravitational transformations, absorption of the phase ESF of the Ether/ESF, taking place in a mass and carries on continuously (non-stop in time, as Dominant Force), in the three-dimensional Euclidean Space, requires the conception of time as a fourth dimension, adding to the Law of equivalence presented above as a simple transformation of units of measure of mass, the concept that, in a mass, we have two main gravitational phenomena:

1) Gravitational absorption by a mass M of ESF (in time) transforming the substance ESF into gravitational mass, at the rate  $k \left[ \frac{kJ}{m^3 1''} \right]$  by the unit of mass 1Ton of

density  $\rho=1$  inside the unit of volume ( $1[m^3]$ ).

2) Gravitational transformations taking place into a mass M, of mass into expanded mass which coming radially (linearly) out of it endowed of inertial constant linear

speed  $c$  moves under absorption by the surrounding ESF are originating the dissipation phenomenon

Note: gravitational transformations-degradations in a mass  $m$  caused by a large mass  $M$  are originating the Static Force the Dominant Force and the Total force and all re-enter the case 2) here above .

Representation of physical entities (made up by substance) and of the above phenomena of absorption of Universal nature (by the inertial mass and by the ESF) can only make sense if the metre is the Universal measure of reference and inside a metric volume is contained the unit of substance of reference  $1[\text{Ton}/\text{m}^3]$  and the time of  $1''[\text{sec}]$  is the time during which the unit of substance contained at rest in the unit of volume is subjected to a Universal

phenomenon of absorption of reference  $\left(\frac{k}{c^2}\right)[\text{Ton}/(\text{m}^3 1'')]$  or  $k$   $[\text{kJ}/(\text{m}^3 1'')]$ , the  $1''[\text{sec}]$

is the measure of time reference necessary to describe universal physical transformations-degradations of substance inside the unit of volume.

We accept now that the metre  $1[\text{m}]$  and the  $1''[\text{sec}]$  are the necessary universal units in order to measure movements and transformations affecting substance in the Universal reality but with this conclusion we must accept that the necessary singularity (no possible alternate choice) that made us adopt the metre  $1[\text{m}]$ , unit of Space, as a fraction

$1\text{m} \cdot 40,000,000 = 2\pi R_E$  of the equatorial circumference of Earth and the second  $1''[\text{sec}]$  as a fraction  $1/86400$  of the time of complete rotation of Earth around its axis represent fact which finds logic explanation only in the UDS.

Note: Linear expansion, at  $c$  speed of dissipation when a transformation of mass into expanded mass comes out of a Star, is associated to lateral expansion over a spherical surface, this shows that a pure linear expansion  $c$  is never the type of perfect expansion of the substance, made of inertial particles (which are as well of indefinable character)

INSERT to evaluate:  $G = \frac{20}{c}$  and since  $G \cdot 4\pi = k$

Is  $\frac{80}{c} \pi = k$

Note: in the phenomenon of dissipation, Heat  $\Delta Q[\text{kJ}]$  is coming out of a mass as pure linear radial expansion at  $c$  speed and since linear expansion is Work, for Kelvin postulate it must be associated to loss/degradation which duly takes place through lateral expansion over the sphere of radius  $r$  for  $R < r < \infty$  (whilst dissipation proceeds in conditions of conservation):

$$dmc^2 = pV = \rho v^2 V = Mv^2 = \Delta Q \left[ \frac{\text{kJ}}{1''} \right]$$

We have that the  $\Delta Q \left[ \frac{kJ}{1''} \right]$  with the increase of the distance  $\Gamma$  from the centre of the source decreases in proportion with the inverse square of the distance, its presence as a flow of expanded mass moving as particles at inertial speed  $c$  is:

$$F(\bar{Q}) = \frac{dmc^2}{4\pi \cdot r^2} \left[ \frac{kJ}{m^2 1''} \right]$$

The inertial particles in  $F(\bar{Q})$  with the increase of  $\Gamma$  are reducing their density of presence in Space and this constitutes degradation of irreversible character.

The simple example above considers a continuous gravitational transformation causing dissipation in time from an immobile point-source, but in nature the object source can be also under movement and this can originate all sort of speculations, I assume that in the system of an Observer the constant of absorption  $k$ , is the one which with its invariable character defines the time phenomenon.

Comment: to the transformation of units of measurement,

$$1 \left[ \text{Ton} / m^3 \right] = c^2 [kJ / m^3]$$
 associated to physical transformation (release) at

scalar inertial speed  $c$  (Heat) of the particles contained inside  $1[m^3]$  (representing the “Law of Equivalence” of Einstein) followed the presentation of another Law: “the Schwarzschild limit condition”.

It says that: “a gravitational mass absorbing the phase ESF from the Ether/ESF present in the Euclidean Space, causes a depression in it which reaches a maximum value  $v(R)^2 [kJ / m^3]$  above its surface if that maximum value of depression reaches the maximum limit  $c^2$  the mass is called: “Schwarzschild mass” or: “Black Hole”.

Note:: Ether/ESF means presence in the Euclidean Space of Indefinable Particles (IP) of density  $\rho_{IP}=c^2 [Ton/m^3]$  as a phase ESF of the Ether/ESF (appended/dispersed uniformly over the fabric of the Space  $E_{ESF}$  at density:

$$\rho_{ESF} = \frac{\rho_{IP}}{c^2} = 1 \left[ \frac{\text{Ton}}{m^3} \right] \text{ as mass at rest.}$$

Note the density of presence of the fabric of the space  $E_{ESF}$  would be  $\varepsilon=1/c^2 [Ton/m^3]$  **but here is systematically overlooked in all the calculations.**

The particles IP present inside the unit of volume and appended to the fabric  $E_{ESF}$  are what here is named “Phase ESF of the Ether/ESF of density  $\rho_{ESF}=1[Ton/m^3]$ , the description is that under absorption by the gravitational mass  $M_{LGM}$  they are “practically” pulled/ripped out of the immobile Fabric of the Euclidean Space to which they are appended, and this takes place all the way from the surface of the mass  $M_{LGM}$  to infinite distance and whilst they flow into it (into the  $M_{LGM}$ ) at a speed  $1[m/1'']$ , generate a depression in the surrounding volumes of Space whose maximum possible extent causes in them a limit of expansion  $c^2$  over the surface of the  $M_{LGM}$ , “the point in which they occupy in full expansion the unit of volume” (see Google: on [GSJ Ruggeri A, May 25, 2017 “On the Nature of the Ether/ESF”](#))

a) Is not by chance that the Law of equivalence as above presented is associated to the metre as unit of measure since it is in the unit measure of volume  $1[m^3]$  that is contained the Unit of substance of reference and the metre is as well used to define the speed of flow of reference  $1[m/1"]$  of the ESF (substance) under the absorption by the Gravitational mass over the unit of time and to define the inertial speed of expansion/dissipation  $c [m/1"]$  during degradation of mass (in [Ton] into expanded mass in equivalent [kJ] etc..)

b) The **Schwarzschild condition** regarding the maximum absolute depression to which the "the phase ESF of the Ether/ESF as substance 1[Ton] contained in the unit of volume in  $[m^3]$ " can be subjected in the Universal Reality, can now be regarded "a posteriori" as the **next big advance in this field of knowledge** (which followed the presentation of the Law of equivalence by Einstein) and insofar we refer to the speed of inertial particles in metres, is sharing the choice of the metre as unit of measurement and the  $1[sec]$  as unit of time with other physical entities.

My personal view is that from a certain point on (whilst studying the nature of Forces) the Scientists, ( when had to choose the basic unit of length and of time) realized, that they were dealing with absolute limits and there was no alternative to the metre as unit of measure of Space and the time of 1" as measure of transformation-degradation of physical phenomena, nevertheless, though realizing the necessity of the choice, Science, was at that time still unable to draw consequences which were described through the discovery (more than one century after) of the Law of Equivalence (as per Einstein) declaring that there was transformation-degradation of "mass at rest" into expanded mass moving at maximum inertial speed  $c [m/1"]$ , (Heat transformed into Work as radial movement at cost of degradation as lateral spherical expansion) and existence of a gravitational character of maximum depression  $c^2$  in Space, (based on which Schwarzschild declared that expanded mass in movement at maximum scalar inertial speed  $c [m/1"]$  subjected to the gravitational condition imposed by the phase ESF of the Ether/ESF (at maximum expansion), was impeded to cross the surface of the BH) and to come out radially from it (as dissipation ) in the status of light.

Now, in the UDS through the introduction of the gravitational constant of absorption  $k [kJ/(m^3 1")]$  by the unit of mass occupying the unit of volume at density  $\rho=1[Ton/m^3]$  and the interpretation that the substance ESF would absorb radially (with the same Law) the expanded degraded mass present in a mass  $m$  subjected to internal gravitational transformation-degradation (originating, this way, the Static Force, the Dominant Force and the Total Force, the way was explained in this theory) and absorbs also as dissipation  $t$  he expanded mass coming out from a gravitational mass moving at radial velocity  $c [m/1"]$ . (come sopra menzionato).

Resuming: from an assumed existence of an "absolute potential of transformation" in the unit of mass of density  $\rho=1[Ton/m^3]$  into units of mass in  $[kJ/m^3]$  we get a relation of equivalence between units of mass:

$$A) \quad 1 [Ton] \equiv c^2 [kJ]$$

The following equivalence between units of mass means nothing if to it is not associated internal transformation-degradation of an amount of mass in status of inertia transferring it into an internal equilibrium Space-Time that shows its presence as Heat.

$dM = \rho dV [Ton]$  becomes:

$$B) \quad dM [Ton] \equiv dM c^2 [kJ]$$

But an external proof of transformation in this theory is internal movement as presence of measurability of the Heat contained by the mass  $M$  and this can be done in Thermodynamics, measuring the temperature before and after transformation took place ( since this type of physical transformations have the capacity to produce a scalar passage in Space-Time of the substance in quiet contained inside  $M$  ) :

$$dmc^2 = Mv^2 = \rho Vv^2 = pV = dQ(T)$$

Where  $dQ(T)$  is reducible to measure of variation of temperature  $dT$  .

Note: in the Nature of Things the role of substance cannot be a complete transformation-degradation like is shown in the equation of equivalence (Einstein).

Another example of application of this Law taking place in conditions of relative quiet is the gravitational Law of absorption of the ESF:

The physical mass made up of atomic entities absorbs the (IP) particles from the phase ESF of the Ether/ESF of density  $\rho_{ESF}=1[\text{Ton}/\text{m}^3]$  over the unit of time  $t=1''[\text{sec}]$ :

$$\frac{\Delta M_{ESF}}{1''} = \frac{k}{c^2} M \left[ \frac{\text{Ton}}{1''} \right] = kM \left[ \frac{\text{kJ}}{1''} \right]$$

The above  $\Delta M$  is going to become part of the atomic entities of the physical mass and this phenomenon of absorption is represented by a permanent field of flows per  $R < r < \infty$  :

In units of mass: 
$$\frac{dm(r)}{1''} = \frac{k}{c^2} \frac{M}{4\pi \cdot r^2} \left[ \frac{\text{Ton}}{m^2 \cdot m \cdot 1''} \right]$$

In units of mass equivalent: 
$$\frac{dm(r)c^2}{1''} = k \frac{M}{4\pi \cdot r^2} \left[ \frac{\text{kJ}}{m^2 \cdot m \cdot 1''} \right]$$

Simultaneously with the above gravitational transformation-degradation of substance ESF into physical mass, the mass undergoes an internal gravitational transformation also in the unit of time which releases expanded mass  $dmc^2 = dq$  (Heat) and can gravitationally induce internal transformations-degradations releasing expanded mass  $dmc^2 = dq$  into other separated masses.

Note: the mechanics of movements induced gravitationally require introduction of Space-Time concepts which will be made in better details in due course.

All the movements of masses in the Universe (including dissipation of expanded mass from a mass  $M_{LGM}$ ) are the result of partial transformation of the  $dmc^2 = dq$  (Heat derived from gravitational internal degradation of mass into expanded mass) into linear movement, since for the postulate of Kelvin: it is impossible to have a transformation whose unique result is transformation of Heat into Work.

## Singularities and coincidences

In order to explain the presence of a gravitational Force transmitted between two separate masses the presence of the phase ESF of the Ether/ESF is indispensable since is the ESF that develops the static Force through absorption of the internal transformation in  $m$  or in  $M_{LGM}$  caused by gravitational flow.

### ABSORPTION

$$k \left[ \frac{kJ}{Ton \cdot l''} \right]$$

This constant of absorption is extended now, through equation (representing a "coincidence"), to the measure of the Radius of Earth  $R_E$ .

Note: Definition of coincidence is also the point in which in a gravitational mass is satisfied the generic Ruggeri condition INPUT=OUTPUT (described by the gravitational unique condition  $k=k_{EXP}$ ) and when a mass satisfies both, the Ruggeri condition and that of Schwarzschild condition, means that is in existence at a limit status at which now takes the name  $M_{Sch-Rug}$  )

Note: the definition of density of mass  $\rho_M$  can be interpreted as a "pure number" since:

$$\rho_M = \frac{\rho_{LGM}}{\rho_{ESF}} [-]$$

Since the density of reference is  $\rho_{ESF}=1[Ton/m^3]$ .

That expanded mass can orbit at inertial speed  $c$  under the surface of a Schwarzschild mass is a fact to be accepted, but what we have there at that stage is Heat in which the particles of expanded mass move at  $c$  speed in "scalar" fashion and not in directional fashion (as is the case of the light) and in that status are pressing against a wall of fully expanded ESF impeding the Heat to come out of the BH, furthermore the physical limit requiring stable existence of a mass in status of Black Hole is internal production of Heat  $F_D=(2\pi c^4)/k [kJ/1'']$  and that condition of existence comes to be in a mass  $M$  only when  $M>M_{Sch-Rug}$  (as per demonstration in the note below).

Note: the mass  $M_{Sch-Rug}$  is a limit to which a mass  $M$  cannot be built up by absorption since when  $M<M_{Sch-Rug}$  we always have INPUT<OUTPUT and therefore  $M$  is always in a condition in which consumes itself more or less rapidly, (see below).

When instead the INPUT,  $kM$  for  $M>M_{Sch-Rug}$  gives a positive balance the mass  $M$  overcomes the value  $M_{Sch-Rug}$  which is an Universal limit (there is a coincidence of two conditions, like mentioned above), we have that the depression on the phase

ESF surrounding M, having reached the maximum value  $c^2$  cannot increase but remains stable at  $c^2$  (or  $\bar{\epsilon} = 1$ ) which is the condition of existence of a mass  $M_{Sch}$ .

As seen (Google: [GSJournal.net](http://GSJournal.net) July 29, 2017: Universal Limits, in the Universal Dynamic Science (UDS)), a mass which **respects** the condition INPUT=OUTPUT (Ruggeri condition) and at the same time the limit condition of existence of Schwarzschild as a  $M_{Sch}$ , is a Black Hole which **"represents a coincidence"** I called it:

$$M_{Sch-Rug}$$

Whilst the  $M_{Sch-Rug}$  respects the input condition (Newton Law in the UDS) for a fixed value of mass  $M_{LGM}$

$$INPUT = kM_{LGM} \left[ \frac{kJ}{1''} \right]$$

As a BH must match (in time) constant output (constant gravitational limit of dissipation the same for all the masses Schwarzschild or Black Hole):

$$OUTPUT = \frac{2\pi c^4}{k} \left[ \frac{kJ}{1''} \right]$$

Since the condition INPUT=OUTPUT is an equilibrium of existence for a mass in status of Black Hole:

$$k \cdot M_{Sch-Rug} = \frac{2\pi \cdot c^4}{k}$$

Note: from my theory of gravity based on gravitational absorption of the phase ESF of the Ether/ESF by the mass and internal gravitational transformation (inside it) of mass into expanded mass coming out of it as dissipation, results that a mass M cannot grow up to the limit size of the Mass Schwarzschild-Ruggeri ( $M < M_{Sch-Rug}$ ) since in these conditions is always valid the relation input < output (the mass M in which dissipation is greater than the absorption cannot grow, unless it can capture external masses) having, then, the value of dissipation higher than absorption tends to reduce its size  $M \ll M_{Sch-Rug}$ .

Once ( $M \geq M_{Sch-Rug}$ ) since the  $M_{Sch-Rug}$  is a limit status (the same as any other  $M_{Sch}$ , the depression limit  $c^2$ , the phase ESF at maximum expansion will block dissipation of substance out of it) having now input > output the M grows (expands) whilst dissipation is blocked) we then have that for:

$$M > M_{Sch-Rug} \quad \text{the } M \text{ remains a BH as well} \quad M = M'_{Sch} > M_{Sch-Rug}$$

Note: the limit constant dissipation associated to the status of  $M_{Sch}$  cannot escape the surface of M and is retained inside M whilst M is in expansion (therefore since nothing comes out of M we have  $M = M'_{Sch}$ ).

Note: this is consistent with the fact that the light as dissipation doesn't show out of a mass in these conditions and consequently the name Black Hole.

Given the enormous radial size  $r_{Sch-Rug}$  and the extremely small density  $\rho_{Sch-Rug}$  of the  $M_{Sch-Rug}$  with  $M'_{Sch} > M_{Sch-Rug}$  we have that such a mass is at the same time a

$M_{Sch}$  and an Universe in expansion, inside which the expanded mass (Heat rather than light) cannot cross the surface of  $M=M'_{Sch}$  of increasing size.

Therefore all substance in dissipation is remaining internal to the surface of  $M'_{Sch}$  and nothing can be seen or detected from an Observer outside it.

In this manner an external Observer only sees a black zone where that Universe  $M'_{Sch}$  exists and expands.

Note: the characters of the mass  $M_{Sch-Rug}$  have been treated in the following papers:

Google: [GSJournal.net May 25, 2017: On the nature of the Ether/ESF](#)

Google: [GSJournal.net July 29, 2017: Universal Limits, in the Universal Dynamic Science \(UDS\)](#)

The Schwarzschild condition ties the limit gravitational flow of the ESF (radial absorption of the ESF by the gravitational mass as Dominant Force) through the square unit  $1[m^2]$  of the surface of the mass  $M_{Sch}$  at the speed of

$$(1m/1'') : \quad a_{Sch}(r_{Sch}, \rho_{Sch}) = \frac{k}{3} \rho_{Sch} r_{Sch} \left[ \frac{kJ}{m^2 m 1''} \right]$$

To an equal value of gravitational gradient of depression inside the unit of volume per unit  $[m]$  of radial length:

$$a_{Sch}(r_{Sch}, \rho_{Sch}) = \frac{k}{3} \rho_{Sch} r_{Sch} \left[ \frac{kJ}{m^3 \frac{m}{m}} \right]$$

The sum (integral) of the depressions acting over the (IP) particles of the phase ESF belonging to the unit of volume ( $1[m^3]$ ) of the Ether/ESF from  $r_{Sch}$  to  $\infty$  represents the Schwarzschild condition over the unit of volume laying on the surface of the

mass  $M_{Sch}$  :

$$\int_{r_{Sch}}^{\infty} \frac{kM_{Sch}}{4\pi \cdot r^2} dr = \frac{kM_{Sch}}{4\pi} \int_{r_{Sch}}^{\infty} \frac{dr}{r^2} = \frac{kM_{Sch}}{4\pi \cdot r_{Sch}} \left[ \frac{kJ}{m^3 \frac{\infty m}{m}} \right]$$

$$\frac{kM_{Sch}}{4\pi \cdot r_{Sch}} = \frac{k \frac{4}{3} \cdot r_{Sch}^3 \rho_{Sch}}{4\pi \cdot r_{Sch}} = \frac{k}{3} \rho_{Sch} r_{Sch}^2 = c^2 \left[ \frac{kJ}{m^3 \frac{\infty m}{m}} \right]$$

This maximum depression of the (IP) particles in the space occupied by the Ether/ESF (whose density of presence as substance is always  $1[ton/m^3]$  now, through maximum expansion:

$$\bar{\varepsilon}(r_{Sch}, \rho_{Sch}) = \frac{c^2}{c^2} = 1$$

Would build up a barrier to the passage of the expanded mass generated inside the  $M_{Sch}$  .

See: [GSJournal.net May 25, 2017: On the Nature of Ether/ESF](#)

Above I speculated how the character of a mass close to the limit condition  $M < M_{Sch-Rug}$  is represented by its tendency to lose substance since in it the absorption < dissipation and M only can get to the value  $M_{Sch-Rug}$  and go beyond, if it captures other masses.

The Schwarzschild equation is then a limit condition never reached by a mass  $M < M_{Sch-Rug}$  unless is imposed a peculiar physical condition consisting of capture of external masses and no BH can “permanently” exist beneath that value of mass.

Note: “the  $M_{Sch-Rug}$  is the only one that can exist under the conditions imposed in the UDS but this doesn’t excludes the existence of other Mechanical conception of the status of substance which allow presence of other types of BHs in the Universal Reality”.

Now, once through this mechanism of capture, the mass M overcomes the limit value  $M_{Sch-Rug}$  ( $M' > M_{Sch-Rug}$  absorption > dissipation since dissipation is an Universal limit dependent from maximum depression  $c^2$ ) the mass M' grows whilst its capacity to dissipate is gone, (due to the fact that the (IP) particles are at maximum expansion

$\bar{\varepsilon} = \frac{c^2}{c^2} = 1$  (the point in which expanded mass cannot escape from M') and therefore

the mass  $M' > M_{Sch-Rug}$  once gone beyond the value  $M_{Sch}$  doesn't let Heat or light to come out of it. Remains a mass  $M_{Sch}$  and its condition of existence is:

$$M' = M_{Sch} > M_{Sch-Rug} .$$

This then is to say that M' entered a condition of continuous accretion which warrants it full existence in time as Black Hole.

Since accretion is unstoppable we can say that the above is the description of a Universe as a  $M_{Sch}$  in continuous growth (expansion) in time of an Universe as mass  $M_{Sch}$ .

Note: this description made up in terms of the theory based on the existence of the Ether/ESF somehow confirms what has been sensationalized as the “Big Bang” since from one point in time, onwards (as described above) if a mass M as result of gravitational captures, in time, became:

$$M' = M_{Sch} > M_{Sch-Rug}$$

In it prevailed the condition:

$$\left\{ INPUT = kM'_{Sch} \right\} > \left\{ OUTPUT = \frac{2\pi c^4}{k} \right\} \quad \left[ \frac{kJ}{1''} \right]$$

The table below contains numeric evidence of what discussed above:

