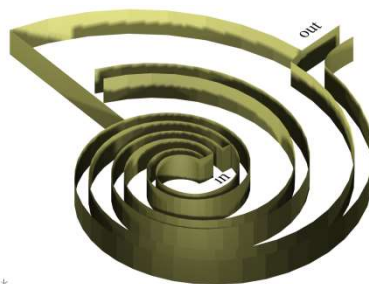Antonio Ruggeri Dr. Ing.

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EX SPIRA AQUA MUNDA

In memory of my son Giovanni

8-Jan-19

To my wife FRANCESCA

and my daughter AMANDA

FIRST PART

MACRORELATIVITY

Summary: Relativity in the Physical Reality is the study of interactions in Time inside the Euclidean Space taking place, between physical objects made up of a unique substance, in respect of the economic perfect Universal Laws given to them by the Creator.

 Note: in this paper were developed advancements concerning the current theory of Forces

Relativism in UDS

"Macrocosmic and Microcosmic Relativity"

1) Macrocosmic interactions between two separated gravitational objects are going under the name of –"Macrocosmic Relativism".

Macrocosmic Relativism in UDS is concerning mainly stable interactions between two gravitational objects $M \gg m$, (inside the $[Ether/ESF]$) in which the smaller one is in circular orbit around the larger one and through gravitational interaction, absorbs from the composite particles $[BM]$ constituting the $[Ether/ESF]$, mass "in special Status" of $[IP]$ particles.

To this absorption of $[Ether/ESF]$ corresponds penetration of mass $[BM][Ton]$ inside the mass m in orbit expressed as centripetal Force in $[Ton]$.

To it is opposed with equal and opposed Force the inertia of the mass m undergoing constant variation of direction of velocity in orbit.

Nature of the Force in opposition is that in simultaneity degrades inside the mass m an amount of mass $[IP]$ equal to that absorbed through the centripetal Force, from mass $[IP]$ to mass equivalent in $[Ton]$, which mass, now is on a status that can be degraded through reaction of physic-chemical nature and come out of the mass m in status of Heat, dissipated radially away from m as mass in $[kJ]$ at c speed.

Note: from the above presentation is to be intended that Substance exists as mass in three states $[IP]$, $[Ton]$, $[kJ]$.

2) Microcosmic interactions inside a generic gravitational mass are going under "Microcosmic Relativism"

Section1) "Example of "Macrocosmic Relativism"

Effect over the mass of Earth due to development in orbit of:

"Macrocosmic Relativism"

The study in deep of Macrocosmic interactions between gravitational Masses concerns "Relative" movements which (to start with) here are represented with a system composed of two gravitational masses the smaller of them two is in perfect circular orbit around the larger one. Here they are referred in "Macrocosmic Relativism ".

Note: two gravitational masses, of which one is in orbit around the larger one, constitute a System whose relative movements and exchange of Forces cannot be explained without presence of an intermediate medium, $[Ether/ESF]$, having appropriate physical characters.

"Gravitational "absorption of $[Ether/ESF]$ by a mass is a physical property, essential in order to represent the physical phenomena internal to a mass and interactions bet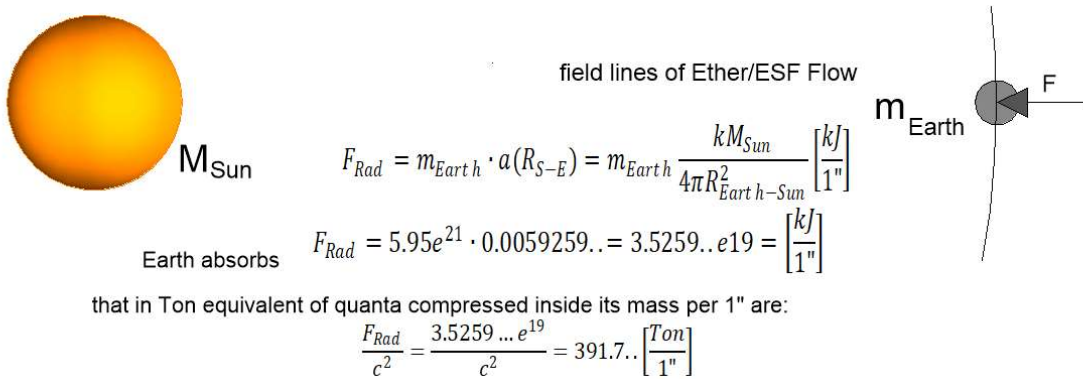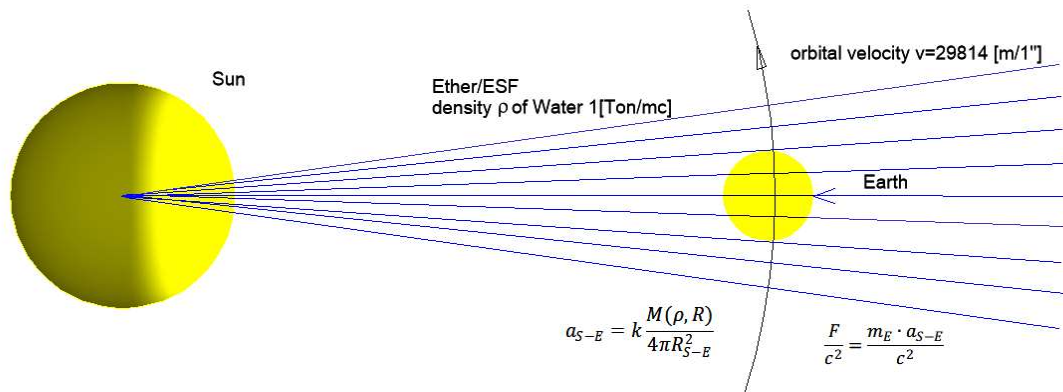ween masses in the Euclidean Space, here (section 1) we restrict the treatment only to study of "Macrocosmic" interactions between two masses (Sun >> Earth) and in section 2) we will deal with "Microcosmic" interactions between the molecular internal components of only a Mass at the time (Sun, Earth etc..).

Presence of orbital paths between Large masses in relative motion is part of "Macrocosmic Relativism" and presence of internal molecular vibrations of gravitational origin inside single gravitational masses is going under "Microcosmic Relativism".

Constant Depression of the $[Ether/ESF]$ in function of the radial distance in the field of absorption of $[Ether/ESF]$ by the Larger Mass establishes the possibility of insertion of the smaller one into a circular orbital path, around the Larger Mass.

Large Gravitational flow of $[Ether/ESF]$ caused by absorption by the Central Gravitational mass establishes the mechanism inserting presence of centripetal constant Force in a mass moving along the circular path (as flow of substance $\frac{F}{c^2}\left[\frac{Ton}{1"}\right]$) into the Smaller Mass in orbit, in the unit of time, since substance $\frac{F}{c^2}$ absorbed (that consists of a flow of composite particles $[BM]$ of the $[Ether/ESF]$ results endowed of density $\rho_W = 1\left[\frac{Ton}{m^3}\right]$ and compressed resides inside it as mass equivalent

$\dfrac{\Delta m}{1"} = \dfrac{F}{c^2}\left[\dfrac{Ton}{1"}\right]$ and in that status $[Ton]$ enters the orbiting Small Gravitational Mass in the unit of time. (more info below)

Sun

Ether/ESF density ρ of Water 1[Ton/mc]

orbital velocity v=29814 [m/1"]

Earth

$a_{S-E} = k\dfrac{M(\rho, R)}{4\pi R_{S-E}^2}$

$\dfrac{F}{c^2} = \dfrac{m_E \cdot a_{S-E}}{c^2}$

field lines of Ether/ESF Flow

M_{Sun}

$F_{Rad} = m_{Earth} \cdot a(R_{S-E}) = m_{Earth}\dfrac{kM_{Sun}}{4\pi R_{Earth-Sun}^2}\left[\dfrac{kJ}{1"}\right]$

Earth absorbs

$F_{Rad} = 5.95e^{21} \cdot 0.0059259.. = 3.5259..e19 = \left[\dfrac{kJ}{1"}\right]$

m_{Earth}

F

that in Ton equivalent of quanta compressed inside its mass per 1" are:

$\dfrac{F_{Rad}}{c^2} = \dfrac{3.5259\ldots e^{19}}{c^2} = 391.7..\left[\dfrac{Ton}{1"}\right]$

When the orbit is circular if can be considered free of periodic disturbance the $[Ether/ESF]$ that is under absorption by the Large Gravitational Mass $M(\rho_M, R_M)_{LGM}$ in the center of the system, is flowing

radially towards the mass in orbit $m(\rho_m, R_m)$ and as substance finds opposition to penetrate the mass that since is in orbit at constant inertial velocity is relatively still respect to the flow of $[Ether/ESF]$ nevertheless penetrates it, that opposition is generated by the inertial resistance by $m(\rho_m, R_m)$ to follow the circular orbital path.

Note: the fact is that the movement at constant circular orbital speed, takes place by <u>entropic absorption</u>, without apparent friction in the $[Ether/ESF]$ surrounding the mass M in orbit is equivalent to dissipation of mass ΔM to speed of light measured in $[kJ]$:

$$\Delta M c^2 \equiv M v^2 \; [kJ]$$

Whilst in the development of the centripetal Force the effect producing it is due to the radial flow of the composite particles $[BM]$ absorbed by the by the central mass $M(\rho_M, R_M)_{LGM}$.

  This flow coexisting inside the mass in orbit finds difficult to penetrate it whilst runs towards the center of the gravitational field (and is on the absorption over time of a fraction of this penetrating flow that consists the centripetal Force) that in the example below is given as opposition to penetration of substance (mass) simultaneously completely absorbed as flow of mass in $\left[\dfrac{Ton}{1''}\right]$.

 Resuming:
  The gravitational flow of $[Ether/ESF]$ absorbed by the central mass $M(\rho_M, R_M)_{LGM}$ depends from the constant of absorption of the particles $[BM]$ of $[Ether/ESF]$ which since the entities $[BM]$ are of density' $\rho_w = 1 \left[\dfrac{Ton}{m^3}\right]$ is given over the unit of time as mass in units of $\left[\dfrac{Ton}{Ton \cdot 1''}\right]$ per

unit of Gravitational mass $M(\rho_M, R_M)_{LGM}[Ton]$ with which coexists and is:

$$\frac{k}{c^2} = \frac{\frac{4}{3}\pi \cdot 2 \cdot e^{-7}}{c^2} = \frac{0.00000083775\ldots}{c^2} \left[\frac{Ton}{Ton \cdot 1"}\right]$$

since absorption takes place in units of mass $[BM]$ of $[Ether/ESF]$ a densita' $\rho_{Ether/ESF} = 1 \left[\frac{Ton}{m^3}\right]$, this flow of $[Ether/ESF]$ originated by $M(\rho_M, R_M)_{LGM}$ (in the center of the system) is absorbed (penetrates) the mass $m(\rho_m, R_m)$ as mass in $\left[\frac{Ton}{1"}\right]$ generating a constant centripetal Force over it:

$$\frac{F}{c^2} = \frac{k}{c^2} \cdot \frac{M(\rho_M, R_M)_{LGM}}{4\pi R_{orb}^2} \, m(\rho_m, R_m) =$$

$$= \frac{a(R_{orb})M_{LGM}}{c^2} \cdot m(\rho_m, R_m) \left[\frac{Ton}{1"}\right]$$

at distance R_{orb} in which to follow circular orbital path at $v_{orb} = constant$ the inertial constant opposition of the mass $m(\rho_m, R_m)$ must be equal and opposite to $\frac{F}{c^2}$, we therefore have the following conditions of Equilibrium between Forces (between the penetrating Force $\frac{F}{c^2}$ as flow of mass in status of $[Ether/ESF]$ and the inertial Force in opposition) is :

$$m(\rho_m, R_m) \cdot \frac{a(R_{orb})}{c^2} = m(\rho_m, R_m) \cdot \frac{v(R)_{orb}^2}{c^2 R_{orb}} \left[\frac{Ton}{1"}\right]$$

 Note: the above equation represents flow of composite particles $[BM]$ of $[Ether/ESF]$ (as per theory) entering the mass in orbit and developing over it a Force in $\left[\frac{Ton}{1"}\right]$ a flow that

is opposed by inertial reaction of the mass $m(\rho_m, R_m)$ to change direction of movement.

As matter of fact what the mass absorbs are the single $[IP]$ particles, that are in the center of the composite particles $[BM]$ because the instant the $[BM]$ coexisting inside the mass enter it, hey lose their own Space Fabric (which is dissipated radially away from $m(\rho_m, R_m)$ they go to increase the nuclei of molecules of $m(\rho_m, R_m)$ therefore the density' of $m(\rho_m, R_m)$.

Resuming:

We have that in a mass m in orbit on a circular path at constant velocity $v(R)_{orb}$ "inertial" two forces are present in opposition in the Unit of mass as equivalent flows in units of $\left[\frac{Ton}{1"}\right]$:

a) The gravitational (centripetal) Force

$$\frac{F_c}{c^2} = m\frac{a(R_{orb})}{c^2}\left[\frac{Ton}{1"}\right]$$

as flow of particles $[IP]$ absorbed and stored in m

b) The inertial Force in opposition $\frac{F_i}{c^2} = m\frac{v(R)_{orb}^2}{c^2 R_{orb}}\left[\frac{Ton}{1"}\right]$

which as opposite Force (centrifugal) is originated by the inertial reaction of the mass m;

$\frac{F_i}{c^2} = m\frac{v(R)_{orb}^2}{c^2 R_{orb}}\left[\frac{Ton}{1"}\right]$ that since the mass m is forced over the orbit to change continuously the direction of movement due to inerzia subjects m to internal transformation from mass $[IP]$ to mass in $[Ton]$.

These two Forces constitute (as continuous effects in opposition) a system in equilibrium along the time.

But since the gravitational Force in a) is the effect of a flow of mass in $\left[\frac{Ton}{1"}\right]$ and the opposite Force b) is inertial opposition to change of direction of speed in orbit, it represents internal transformation and doesn't

involve mass variation, we must say that for "conservation principle" the flow of mass in $\left[\frac{Ton}{1"}\right]$ (made up by $[Ether/ESF]$ absorbed in the orbital conditions described above, is continuously entering the mass in orbit and is stored inside it in the only possible manner i.e. :

$$\Delta \frac{m(\rho_m, R_m)}{1"} = \frac{F}{c^2}\left[\frac{kJ}{c^2 \cdot 1"}\right] = m(\rho_m, R_m) \cdot \frac{a(R\_orb)}{c^2}\left[\frac{Ton}{1"}\right]$$

(see graphic)

The Force of reaction to the gravitational centripetal Force is equal and opposite (acting over the Earth in orbit around the Sun), is transformation wholly generated inside m over a quantity of mass $\Delta \frac{m(\rho_m, R_m)}{1"c^2}$ from status $[IP]$ to status to $[Ton]$ as reaction against the effect (pressure) of the flow of substance $[Ether/ESF]$ absorbed by the central gravitational mass, (the Sun in this case) over the mass of Earth.

Note: since $[Ether/ESF]$ is a conglomeration of particles $[BM]$ and coexists with the $M(\rho_M, R_M)_{LGM}$, is possible to represent absorption of $[Ether/ESF]$ by the $M(\rho_M, R_M)_{LGM}$ in terms of mass $[BM]\left[\frac{Ton}{1"}\right]$ as sole component of the field of $[Ether/ESF]$ coexisting and penetrating any mass in the Euclidean Space occupied by it:

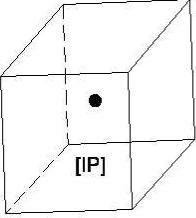$$\frac{\Delta M(\rho_M, R_M)_{LGM}}{1"} = \frac{k}{c^2} M(\rho_M, R_M)_{LGM} \left[\frac{Ton}{1"}\right]$$

[Ether/ESF]
made up of conglomeration
of [BM] particles in compact
status of existence
Expanded mass in elastic status as $\left[\frac{kJ}{m^3}\right]$
inside the volume of Space Fabric [SF]
Volume of SF of [BM]
$V_{SF} = 3,703\ldots e^{-32}[m^3]$
Mass of [SF] of [BM]
$dm_{kJ} = 3.703\ldots e^{-32}[kJ]$
density of [SF] $\rho_{kJ} = 1\left[\frac{kJ}{m^3}\right]$

[BM]
composite
particle

[IP]

[SF] *Volume containing* [BM]
and a particle [IP] *in the center*

[SF] *Volume containing* [BM]
and a particle [IP] *in the center*
Note: [IP] *of density*
$\rho_{IP} = 1\left[\frac{IP}{m^3}\right] \equiv c^2\left[\frac{Ton}{m^3}\right] \equiv c^4\left[\frac{kJ}{m^3}\right]$

Mass $dm_{Ton} = 3.703\ldots e^{-32}$ [Ton]

density $\rho_{BM} = \frac{dm_{Ton}}{V_{SF}} = 1\left[\frac{Ton}{m^3}\right] \equiv \rho_{WATER}$

$V_{IP} = \frac{V_{SF_{BM}}}{c^2} = 4.11e^{-49}[m^3]$

Progress of this absorption (that means "absorption of $[Ether/ESF]$ extracted from the Euclidean Space") is represented by constant radial flow (of $[Ether/ESF]$) as conglomeration of particles $[BM]$ of density:

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

in status of $[Ton]$ as $[Ether/ESF]$ flowing towards the central mass $M(\rho_M, R_M)_{LGM}$, (the Sun as reference) inside which they are absorbed <u>whilst in coexistence.</u>. Consequently since the $[Ether/ESF]$ runs radially towards the center of $M(\rho_M, R_M)_{LGM}$, absorption establishes a "conservative" field of $[Ether/ESF]$ at radial constant flow of composite particles $[BM]$ having density' :

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

existing in status of $[Ton]$) as $[Ether/ESF]$, this constant flow $\frac{k}{c^2}M(\rho_M, R_M)_{LGM}$ of substance moves at

radial speed $\dfrac{\frac{k}{c^2}M(\rho_M,R_M)_{LGM}}{4\pi r^2} = \overleftarrow{v}_{rad}$ towards the central

mass $M(\rho_M, R_M)_{LGM}$ (ex.: the Sun) and to be maintained constant, absorption from infinite radial distance to the

surface of di $M(\rho_M, R_M)_{LGM}$ takes place at increasing radial speed towards the center and for

$$r = \infty \qquad \overleftarrow{v_r} = \frac{\frac{k}{c^2} \cdot M(\rho_M, R_M)_{LGM}}{4\pi\infty} = 0 \quad \text{reaches a}$$

maximum $\overleftarrow{v_{R_M}} = a(\rho_M, R_M)$ over the surface of $M(\rho_M, R_M)_{LGM}$.

Indirect proof of existence of the composite particles $[BM]$ of $[Ether/ESF]$ is the manner in which the $[Ether/ESF]$ runs inside the mass under the effect of absorption by it. This requires coexistence and continuity of deployment of absorption of force in time inside the Mass (practically new concepts never introduced before in physics).....
  Gravity, then...intended this way, assumes hypothesis of coexistence and interaction between two substances in the same Space, the gravitational mass and the composite particles $[BM]$ having density of water but in effects the $[BM]$ are empty as shown in the above drawing, is becoming by consequence an acceptable concept.
  The interpenetration, in the other hand, takes place at enormously low speed $\frac{1}{c^2}\left[\frac{m}{1''}\right]$ together with degradation of substance generating accumulation of Forces inside the central mass $M(\rho, R)$:
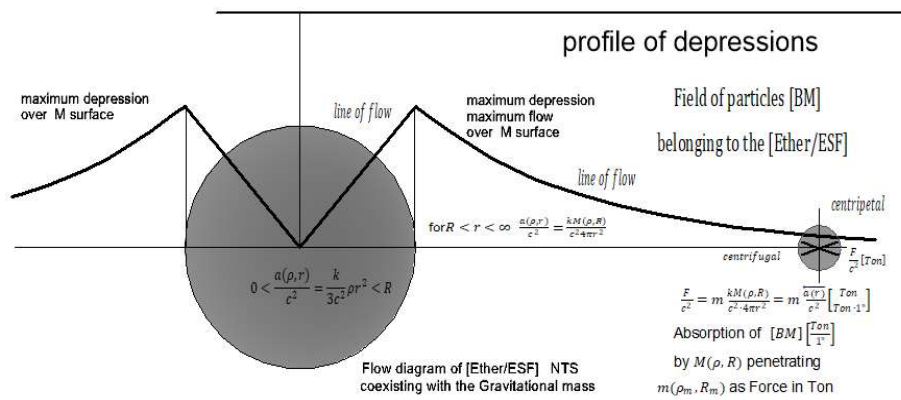
$$0 < a(r) < a(R)$$

all the way to the center of $M(\rho, R)$ along the radius of the gravitational mass ensuring to it a spherical shape whilst pushing to the center (through absorption) a flow of $[Ether/ESF]$ for $0 < r \leq R$ of:

$$\overleftarrow{\frac{a(r)}{c^2}} = \frac{k}{c^2}\frac{M(\rho,r)}{4\pi r^2} = \frac{k}{3c^2}\rho r^2 \left[\frac{kJ}{c^2 m^2 m\cdot 1''}\right] \equiv \left[\frac{Ton}{m^2 m\cdot 1''}\right].$$

It is worth of note that the $[Ether/ESF]$ due to coexistence with the gravitational mass, to its center is in status of quiet at zero depression.

Externally to the Gravitational mass $M(\rho, R)$ from ∞ distance towards its surface the depression caused by "constant absorption" during the unity of time of $[Ether/ESF]$ surrounding $M(\rho, R)$, is in function of the radius r and inside the composite particles $[BM][Ton]$ the depression caused by constant absorption gradually increases up to a maximum to the surface of $M(\rho_M, R_M)_{LGM}$ where the velocity of gravitational flow reaches maximum value. (maximum depression coincides with maximum flow) see Grafic

profile of depressions

maximum depression over M surface

line of flow

maximum depression maximum flow over M surface

Field of particles [BM]

belonging to the [Ether/ESF]

line of flow

for $R < r < \infty$ $\frac{a(\rho,r)}{c^2} = \frac{kM(\rho,R)}{c^2 4\pi r^2}$

centripetal

centrifugal

$\frac{F}{c^2}[Ton]$

$0 < \frac{a(\rho,r)}{c^2} = \frac{k}{3c^2}\rho r^2 < R$

$\frac{F}{c^2} = m\frac{kM(\rho,R)}{c^2\cdot 4\pi r^2} = m\frac{a(r)}{c^2}\left[\frac{Ton}{Ton\cdot 1''}\right]$

Absorption of $[BM]\left[\frac{Ton}{1''}\right]$

by $M(\rho, R)$ penetrating

Flow diagram of [Ether/ESF] NTS coexisting with the Gravitational mass

$m(\rho_m, R_m)$ as Force in Ton

di:

$$\frac{kM(\rho,R)}{c^2 \cdot 4\pi r^2} = \frac{\overleftarrow{a(r)}}{c^2} \left[\frac{Ton}{Ton \cdot 1"}\right]$$

Resuming: Eternally to the gravitational mass $M(\rho, R)$ the effect over the volume of the $[SF]$ of the composite particles $[BM]$ due to constant radial flow is increase of the speed of passage (flow) of the composite particles $[BM]$ with reduction of the radius up to a maximum value

over the surface of radius R of the mass $M(\rho, R)$
for $R < r < \infty$ and radial distances in $[m]$
The flow of $[Ether/ESF]$ inserting $a(r)$ inside a mass doesn't take place in $\left[\frac{kJ}{m^2 m \cdot 1"}\right]$

$$\overleftarrow{a(r)} = \frac{k \cdot M(\rho,R)_{LGM}}{4\pi r^2} \left[\frac{kJ}{m^2 m \cdot 1"}\right]$$

but in equivalents $\left[\frac{Ton}{m^2 m \cdot 1"}\right]$ of composite particles $[BM]$

$$\frac{\overleftarrow{a(r)}}{c^2} = \frac{k \cdot M(\rho,R)_{LGM}}{c^2 4\pi r^2} \left[\frac{Ton}{m^2 m \cdot 1"}\right]$$

and when the flow enters the central mass $M(\rho, R)_{LGM}$

the $\frac{\overleftarrow{a(r)}}{c^2} \left[\frac{Ton}{m^2 m \cdot 1"}\right]$ representing it is tapering linearly to zero towards the center of $M(\rho, r)_{LGM}$
for $\quad 0 < r \le R$

$$\frac{\overleftarrow{a(r)}}{c^2} = \frac{k \cdot M(\rho,r)_{LGM}}{c^2 4\pi r^2} = \frac{\frac{k}{3}\rho \cdot r}{c^2} \left[\frac{Ton}{m^2 m \cdot 1"}\right]$$

Mass absorption in $\left[\frac{Ton}{c^2 1"}\right] \equiv \left[\frac{kJ}{1"}\right]$ doesn't take place at radial speed $1 \left[\frac{m}{1"}\right]$ but since $[Ether/ESF]$ consists of composite particles $[BM]$ in $\left[\frac{Ton}{m^3}\right]$ the absorption that we measure in equivalent $[kJ]$ concerns a substance in status of density $[Ton]$ absorbed at radial velocity:

$$\frac{1}{c^2}\left[\frac{m}{1"}\right] = 1.11\bar{1}e^{-17}\left[\frac{m}{1"}\right]$$

in effects:

$$F[kJ] \cdot 1\left[\frac{kJ \cdot m}{1"}\right] \equiv (c^2 F) \cdot \frac{1}{c^2}\left[\frac{Ton \cdot \cdot \frac{m}{c^2}}{1"}\right]$$

Note that: this gravitational flow of $[Ether/ESF]$ is observed over the spherical surface of $M(\rho, R)$ (where is at its maximum) and since there is no mass outside $M(\rho, R)$, in terms of "conservation" the flow remains constant from $R < r \leq \infty$ whilst through "entropic absorption" depending in final analysis from the phase $[E_{ESF}]$ is extracted from the composite particles $[BM]$ of the $[Ether/ESF]$ at the radial speed above shown (see graphic) since the phenomenon is continuous in time is established with the constant flow a radial "conservative" field in which the flow per unit' of square meter diminishes in dependence with the square of the radial distance from the center of (ρ, R) :

The radial flow of composite particles $[BM]$ in the conservative field of absorption for $R < r < \infty$:

takes therefore place as $\left[\frac{Ton}{m^2 m \cdot 1"}\right]$:

$$(*) \quad \frac{a(r)}{c^2} = \frac{\frac{k}{c^2} \cdot M(\rho, R)}{4\pi r^2}\left[\frac{Ton}{m^2 m \cdot 1"}\right] \equiv a(r) = \frac{k \cdot M(\rho, R)}{4\pi r^2}\left[\frac{kJ}{m^2 m \cdot 1"}\right]$$

In other words : since $[Ether/ESF]$ consisting of composite particles $[BM]$ at density $\rho_W = 1\left[\frac{Ton}{m^3}\right]$ due to the fact that coexists with $M(\rho, R)$ justifies representation

of absorption by the gravitational $M(\rho, R)$ in terms of mass $[BM]$ $\left[\frac{Ton}{1"}\right]$ with a field of flow of mass $[Ton]$ and not in $[kJ]$, caused by entropic degradation (absorption) inside the mass $M(\rho, R)$ of $[Ether/ESF]$ coexisting with it:

$$\frac{M(\rho,R)}{1"} = \frac{k}{c^2} M(\rho, R) \left[\frac{Ton}{1"}\right]$$

Conclusion: gravitational absorption of $[Ether/ESF]$ by gravitational mass $M(\rho, R)$ takes place from substance in $\left[\frac{Ton}{m^3 1"}\right]$ since that is the status of existence of the composite particles $[BM]$ of the $[Ether/ESF]$.

Example: What we measure as Force over the unit of mass at the surface of our Earth is the effect of the phenomenon in equivalent units $[kJ]$ that in reality takes place physically as absorption of flow (of composite particles $[BM][Ton]$ by Earth as central mass $M(\rho, R)$:

$$\frac{\frac{k}{c^2}M(\rho,R)}{4\pi R^2} \left[\frac{Ton}{Ton\ 1"}\right] \equiv \frac{kM(\rho,R)}{4\pi R^2} \left[\frac{kJ}{Ton\ 1"}\right]$$

over a mass $m = 1[Ton]$ immobile present over the surface of Earth at a distance $\overleftarrow{R_{Earth}} = R$ from its center ..

If one takes into consideration that the physical characters of the gravitational field act over the composite particles $[BM]$ of $[Ether/ESF]$ of density $\rho = 1 \left[\frac{Ton}{m^3}\right]$ the linear flow of substance in Ton due to absorption over a mass in similar conditions to the $[BM]$:

$$\frac{a(r)}{c^2} \left[\frac{Ton}{m^2 m \cdot 1"}\right] \equiv a(r) \left[\frac{kJ}{m^2 m \cdot 1"}\right]$$

which corresponds to the phenomenon $a(r)$ force is over the unit of surface extremely small and notwithstanding that,
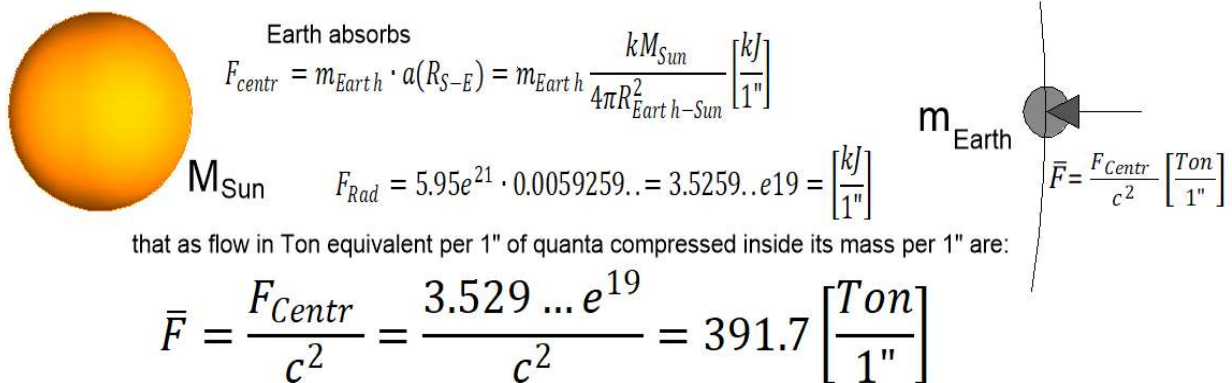
presently for practical and historical reasons as flow we only use the equivalent in $\left[\dfrac{kJ}{m^2 m \cdot 1''}\right]$:

$$a(r)\left[\frac{kJ}{m^2 m \cdot 1''}\right]$$

Note: with absorption the $[Ether/ESF]$ in conditions of $\left[\dfrac{Ton}{m^3}\right]$ is endowed of a flow that being completely absorbed by a mass that impeded to move is also along the path of flow such mass is undergoing effect of a Force and deformation.

Further details re: effect of Gravity over a mass in orbit:

The Force **F** represented in $\left[\dfrac{kJ}{1''}\right]$ develops inside the mass $m(\rho_m, R_m)$ in orbit, (it is constituted by the flow of composite particles $[BM]$ of $[Ether/ESF]$ that run radially inside the mass $m(\rho_m, R_m)$ under absorption of the gravitational $M(\rho_M, R_M)$ (the Sun in our example) as already seen, the phenomenon proceeds as flow of $[Ether/ESF]$ also inside the gravitational mass $M(\rho_M, R_M)$ because the composite particles $[BM]$ of $[Ether/ESF]$ coexist inside it, (see pg. 10 (*) Absorption effect inside the gravitational mass)

Earth absorbs

$$F_{centr} = m_{Earth} \cdot a(R_{S-E}) = m_{Earth}\frac{kM_{Sun}}{4\pi R_{Earth-Sun}^2}\left[\frac{kJ}{1''}\right]$$

M_{Sun}

$$F_{Rad} = 5.95e^{21} \cdot 0.0059259.. = 3.5259..e19 = \left[\frac{kJ}{1''}\right]$$

that as flow in Ton equivalent per 1" of quanta compressed inside its mass per 1" are:

m$_{Earth}$

$$\bar{F} = \frac{F_{Centr}}{c^2}\left[\frac{Ton}{1''}\right]$$

$$\bar{F} = \frac{F_{Centr}}{c^2} = \frac{3.529\ldots e^{19}}{c^2} = 391.7\left[\frac{Ton}{1''}\right]$$

This Force (Gravitational centripetal) $\frac{F}{c^2}$ $[Ton]$ inserting flow of mass $[BM]$ is opposed by the inertial reactive Force, generated by the mass in orbit (Earth in our case) which is opposing its inertia to the gravitational centripetal Force (flow of substance; $[Ether/ESF]$) the phenomenon on the whole is cause on Earth of constant variation of

direction compelling the mass (Earth in our case) to follow a circular orbital path, the flow of mass of gravitational origin in $[Ton]$ of composite particles $[BM]$ of $[Ether/ESF]$ penetrate as Force inside the mass $m(\rho_m, R_m)$ under compression and having lost its Space Fabric (when comes in contact with the mass) is accumulated in it in the unit of time as mass $[IP]$, but <u>simultaneously inside the mass</u> <u>$m(\rho_m, R_m)$</u> an inertial Force in opposition is developed which transforms through degradation an amount of mass equivalent (also in status $[IP]$) in opposition to that absorbed from the $[Ether/ESF]$ from mass $[IP]$ into mass in status of $[Ton]$.

 With this example, concerning Earth, are calculated both phenomena:

1) Mass absorbed gravitationally as composite particles $[BM]$ which on contact after losing the $[SF]$ in $\left[\frac{kJ}{m^3}\right]$ penetrate the mass of Earth, $m(\rho_m, R_m)$ as equivalent mass $[IP]$:

$$\frac{\Delta m(\rho_m, R_m)}{c^2 1"} = m(\rho_m, R_m) \cdot \frac{k}{c^4} \frac{M(\rho_M, R_M)}{4\pi r^2} =$$
$$= \frac{5.95 \quad ^{21} \cdot 0.005962}{c^4} = \frac{394,7}{c^2} \left[\frac{Ton}{1"}\right] = 4.3855 \dots e^{-1} \left[\frac{IP}{1"}\right]$$

Note: this mass $[IP]$ goes to join the nuclei of the mass $m(\rho_m, R_m)[Ton]$ inside which is <u>cause of an increase of mass</u>:

$$\Delta m(\rho_m, R_m) = 4.3855\ldots e^{-15} \cdot c^2 = 394.7 \left[\frac{Ton}{1"}\right].$$

2) the phenomenon in opposition is simultaneous and "<u>transforms internally</u>" an amount equivalent to the mass absorbed gravitationally from the surrounding field of $[Ether/ESF]$ from massa $[IP]$ to mass in $[Ton]$ through the inertial reaction, the value of the internal transformation is:

$$\frac{\Delta m(\rho_m, R_m)_{IP}}{1"} = 4.3855\ldots e^{-1} \left[\frac{IP}{1"}\right] c^2 \equiv 394.7 \left[\frac{Ton}{1"}\right]$$

In practice must be understood that in opposition to the flow of particles $[IP]$ coming from $[Ether/ESF]$ and absorbed inside by $m(\rho_m, R_m)$ simultaneously was transformed inside the mass $m(\rho_m, R_m)$ in orbit, thanks to its inertial opposition (in orbit) an exactly equal quantity $\frac{\Delta m(\rho_m, R_m)}{c^2 1"}\left[\frac{IP}{1"}\right]$ that is now expanded and is present inside the molecules of $m(\rho_m, R_m)$ in stato di massa in $[Ton]$.

This last mass value is in a special status since is in respect of A. Einstein "famous Equivalence" in a condition from which can be transformed/degraded again in flow of Heat (dissipation), through a chemical exothermic reaction.

This therefore is the justification and proof of existence of mass that can be subjected to a "thermonuclear" transformation" which was enacted in the events at the end of WWII and currently is used to produce Heat in Thermonuclear plants.

But events taking place during the last few years show that this transformation can take place and be sustained also in conditions less disruptive and more safe than those enacted presently in Thermonuclear plants (LENR).

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In the above drawing (pg.16) has been calculated how much the Sun stores inside Earth's mass (through the gravitational phenomenon <u>whilst Earth is in orbit</u>).
 Absorption takes place in terms of composite particles $[BM]$ of the $[Ether/ESF]$ that as above described after having shed their Space Fabric penetrate the nuclei of the molecules on Earth and as above mentioned go as particles $[IP]$ to increase its mass measured here as $\frac{\Delta m}{1''}\left[\frac{Ton}{1''}\right]$.

Resuming:
 A flow of composite particles $[BM]$ of $[Ether/ESF]$ of density ' $\rho_W = 1[Ton]$ which after losing their $[SF]$ are absorbed as mass $[IP]$ inside the nuclei of the molecules of $m(\rho_m, R_m)$, for this reason the equivalent Force:

$$\bar{\bar{\bar{F}}}_{Rad} = M_{Earth} \cdot \frac{a(R_{S-E})}{c^4} = \frac{3.5259..e^{19}}{c^4} = 4.352..e^{-1} \; \left[\frac{IP}{1''}\right]$$

Note: the manner in which the mass of $[Ether/ESF\;]$ is absorbed during the unit of time is as flow $\left[\frac{IP}{1''}\right]$.
 In terms of equivalence of Forces as flow of equivalent masses:

$$1\bar{\bar{F}}_{\left[\frac{IP}{1"}\right]} \equiv c^2 \bar{F}_{\left[\frac{Ton}{1"}\right]} \equiv c^4 F_{\left[\frac{kJ}{1"}\right]}$$

EXAMPLE A) inside the mass $m(\rho_m, R_m)$ the internal transformation is caused by inertial reaction, which as above demonstrated is opposed to the centripetal Force originated by Sun's gravity.

Note: this centripetal Force can be explained through a phenomenon of penetration in $m(\rho_m, R_m)$ of flow of composite particles $[BM]$ of $[Ether/ESF]$ having density $\rho_W = 1 \left[\frac{Ton}{m^3}\right]$ (see diagram on page 12)

Characteristic of the $[Ether/ESF]$ is that the force due to Sun's gravity $M(\rho_M, R_M)$, is expressed as flow in $\left[\frac{Ton}{1"}\right]$ of composite particles $[BM]$ of $[Ether/ESF]$ absorbed from $m(\rho_m, R_m)$ "Earth" after they lost their Space Fabric, whereas the inertial transformation/degradation (purely gravitational) in $m(\rho_m, R_m)$ "Earth", from mass $[IP]$ to mass in $[Ton]$ internally to the mass

$m(\rho_m, R_m)$, representing the effect of the Inertial Force in opposition, concerns only the quantity of mass present inside the mass in orbit $m(\rho_m, R_m)$ and transforms irreversibly by expansion (Entropism) particles $[IP]$ into mass in $[Ton]$.

$$\bar{\bar{\bar{F}}}_{\left[\frac{IP}{1''}\right]} = 4.352e^{-15} \left[\frac{IP}{1''}\right] \equiv \bar{\bar{F}}_{\left[\frac{Ton}{1''}\right]} = 391.7 \left[\frac{Ton}{1''}\right]$$

Conclusion:

What is described above represents two coexisting simultaneous gravitational phenomena in opposition inside a mass in orbit :

a) an input of flow of $[Ether/ESF]$ as part of the field of absorption of $[Ether/ESF]$ originated by the central mass $M(\rho_M, R_M)$

b) this flow is penetrating the mass $m(\rho_m, R_m)$ in orbit and as $[Ether/ESF]$ as conglomeration of composite particles $[BM]$ which when come on contact with the mass $m(\rho_m, R_m)$ shed their Space Fabric and are permanently absorbed by $m(\rho_m, R_m)$ as $[IP]$ particles joining the molecular entities of $m(\rho_m, R_m)$.
Since this is flow it keeps accumulating over the ages and given the age of Earth, presently constitutes a sizable amount of substance which went to increase the initial mass $m(\rho_m, R_m)$.

Note: we on Earth can calculate the <u>increase of said mass $[IP]$</u> in equivalent $[Ton]$ over a time $[1"]$:

$$\frac{\Delta m(\rho_m, R_m)_{IP}}{1"} c^2 = 4.353e^{-15} \cdot 9e^{16} = 391.7 \left[\frac{Ton}{1"}\right]$$

Degradation caused by the inertial nature of $m(\rho_m, R_m)$ that takes place simultaneously with the above flow and transforms inside $m(\rho_m, R_m)$, whilst it runs the orbital path, an amount of mass equal to that absorbed from $[Ether/ESF]$ as $[IP]$ fom status $\{IP\}$ into mass in status of $[Ton]$ which in turn (unlike the $[IP]$ particles which are only subjected to gravitational transformations) now as mass in $[Ton]$ can be further transformed/degraded into Heath since in practice is Heat in a "particular Potential solid status" that if a fit physic-chemical reaction is introduced comes out of the mass as dissipation..

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Note: as a rule in the UDS, gravity induces into masses present in the $[Ether/ESF]$ <u>an infinite number of interrelations</u> (causing internal reciprocal internal transformations/degradations in the masses observed) for which the example presented above, studying the gravitational effects between two masses in orbital relation is a very special most important one, the whole picture of all those cases goes under the name "Macrocosmic Relativity".

"Microcosmic" Relativity

In contraposition gravity also induces (with phenomena similar to those observed in the "Macrocosm") also transformations/degradations inside a gravitational mass.

Apparently a gravitational mass absorbs substance in status of composite particles $[BM]$ from the $[Ether/ESF]$ present in the whole Euclidean Space and coexisting with all the substances (Masses) in it.

Nevertheless in actual fact is the phase $[E_{ESF}]$ of the $[Ether/ESF]$ which is at the origin of absorption, causing a chain of entropic expansion over the whole group of physical objects present in the Universal Reality.
The effect due to presence of the phase $[E_{ESF}]$ works its way through the mass that we call Gravitational, giving it the "character" defined "Gravitational" i.e. to absorb the composite particles $[BM]$.

The phase $[E_{ESF}]$ of the $[Ether/ESF]$ sustaining (causing) through its essential presence entropic expansion of substance, interpreted as the Universal character called "absorption", inside a mass $M[Ton]$ is cause of degradation continuously affecting the particles $[IP]$ inside the centers of the molecular structures of M.

The mass of the particles $[IP]$ ("inside" the structures in the center of the molecules of M) undergoes "at first" entropic degradation $[Ton]$ (always of gravitational nature) and comes out of them flowing as mass in $[Ton]$ in a status provisional, since in turn this mass in $[Ton]$ (still inside M) being under entropic degradation through

absorption by the phase $[E_{ESF}]$ flows to the surface of M where in contact with the phase $[E_{ESF}]$ still under entropic degradation is dissipated away from M at c radial speed in status of mass $[kJ]$ (Heath).

Loss of mass in $[Ton]$ coming out of $M(\rho, R)$ as dissipation (through transmission of the entropic degradation) can be measured in units of mass as $[kJ]$ (Plank's quantum is the reference and is measured in units of mass as $[kJ]$).

Outflow of quanta as mass, is forcing the gravitational mass in $[Ton]$ to replace them with continuous absorption of mass $[BM]$ (also in $[Ton]$ from the surrounding-coexisting $[Ether/ESF]$.
This is then the manner in which through successive steps all consisting of entropic degradation, the mass absorbed in pristine status of $[Ether/ESF]$ comes out of a mass M <u>still subjected to internal entropic degradation</u>, in status of quanta in units of mass in $[kJ]$ in dissipation status etc...
Note: the status of existence of the Quanta in Dissipation from the point of view of the UDS (in connection with their effects over masses and objects separated and distant from the mass in dissipation) is also to be considered as a chapter apart of the "Macrocosmic Relativity".

Gravitational phenomena affecting the inside of a gravitational mass go under the name:
        "Microcosmic Relativity"

NOTE: in both cases of "Relativity" composite particles $[BM]$ flowing through $m(\rho_m, R_m)$ in orbit in the "Macrocosmic" case and directly inside $M(\rho_M, R_M)$ in the "Microcosmic"

case, lose their $[SF]$ which is mass in $[kJ]$, that is coming out of (released by) $M(\rho, R)$ as dissipation, nevertheless in "Macrorelativity" the phenomenon is usually minimal, it can be mentioned in presentations only to show that its effects can be overlooked.

Contrarily, in presentations of phenomena of "Microcosmic Relativity" the "Dissipation" is the basic concept, because takes place inside the mass $M(\rho, R)$ when the composite particles $[BM]$ coexisting with the mass $M(\rho, R)$ through the gravitational phenomenon run as continuous flow (inside the mass $M(\rho, R)$) losing their Space Fabric $[SF]$ whilst penetrate the molecules inside $M(\rho, R)$ they hit violently the particles $[IP]$ inside their nuclei and cause exfoliation of quanta from them.

For this reason after loss of $[SF]$ of the composite particles $[BM]$ flowing continuously inside the mass $M(\rho, R)$ is the continuous phenomenon of violent blow that degrades the mass $[IP]$ in the center of the molecular entities for an amount $\left[\Delta \left[\frac{IP}{1"} \right] \right]$ into mass equivalent in $\left[\Delta c^4 \left[\frac{kJ}{1"} \right] \right]$ which runs inside the mass in a compressed status equivalent $\left[\Delta c^2 \frac{[Ton]}{1"} \right]$ and comes out as Dissipation in terms of conservation in $\left[\Delta c^4 \frac{kJ}{1"} \right]$ as shown in the basic formula of "Microrelativity".

Entropism $\equiv$ Expansion/degradation is the continuous phenomenon causing flow of Dissipation away from the mass which we interpret as absorption by the phase E_{ESF} therefore from Dissipation caused by expansion/degradation descends a flow that works its way across the mass up to justify the gravitational Flow of the composite particles $[BM]$ di$[Ether/ESF]$ as absorption by a Gravitational mass of the $[BM] \; of \; [Ether/ESF]$ surrounding it.

Nota: La Dissipation che proviene da una Stella e raggiunge oggetti gravitazionali che la circondano, (includendo come esempio, la dissipazione del Sole che raggiunge la Terra) deve esser considerata come fenomeno appartenente alla "Macrorelativita' ".

SECOND PART
MICRORELATIVITY

As mentioned "Microrelativity's purpose is the study of internal transformations of gravitational nature, inside a gravitational mass, coming out in dissipation as equivalent units of mass in $\frac{[kJ]}{1"}$.

Note: this transformation is exclusive to the gravitational phenomenon and generates, inside a mass, the degradation of the $[IP]$ particles present in the nuclei of the molecular entities:

Example) : Heat output in $\left[\frac{kJ}{1"}\right]$ coming out as dissipation in the unit of time 1" (sec) from the mass of the Sun $M(\rho, R)$:

density of Sun $\rho = 1.4 \left[\frac{Ton}{m^3}\right]$

Radius of Sun $R = 6.968..e^8 \, [m]$

Mass of Sun $M(\rho, R) = 2e^{27} [Ton]$

for $\quad k$ constant of absorption

$$k = \frac{4}{3}\pi \cdot 2 \cdot e^{-7} = 0.00000083775 \ldots \left[\frac{kJ}{m^3 1"}\right]$$

Heat Output from Sun surface:

$$\frac{\Delta M(\rho,R)c^2}{1"} = \frac{k}{3}\rho R \cdot \frac{\frac{k}{3}\rho R^2}{2c^2} M(\rho, R) =$$

$$= 5.73e^{23} \left[\frac{kJ}{1"}\right] \equiv 6.376..e^6 \left[\frac{Ton}{1"}\right] \equiv 7.0844..e^{-11} \left[\frac{IP}{1"}\right]$$

Note: the mass coming out as dissipation in units of $\left[\frac{kJ}{1"}\right]$ is the only measurable evidence of the phenomenon that

obviously since $M(\rho, R)$ is usually a Star can only be measured indirectly.
 Note:Earth dissipation, as a star, can be calculated with the above formula of dissipation.

Ruggeri's Universal formula of dissipation is (essential in Microcosmic Relativism), inside a gravitational mass $M(\rho, R)$ it gives the value of transformations of mass $[IP]$ of density $\rho_{IP} = 1 \left[\frac{IP}{m^3}\right]$ belonging to nuclei of molecular entities which are taking place as entropic degradation of the mass $[IP]$ into equivalent mass $[kJ]$ coming out of the $M(\rho, R)$ as dissipation under absorption at speed $c \left[\frac{m}{1"}\right]$ radially away from $M(\rho, R)$ and is this kind of transformations from mass $[IP]$ causing output in $[kJ]$ can only be originated by the **Gravitational phenomenon of absorption of**

[$Ether/ESF$] (filling the Euclidean space as conglomeration of composite particles [BM]) **by the mass $M(\rho, R)$).**

In actual fact without continuous presence of entropic degradation the mass would be inert since the many ways in which entropic absorption takes place confer to a mass the character which we call "Energy", whatever its status of existence (IP, Ton, kJ) , that are related with the

following equivalence equations:

$$1\,\frac{IP}{m^3} \equiv c^2\,\frac{Ton}{m^3} \equiv c^4\,\frac{kJ}{m^3}$$

Note: the gravitational Macroscopic process (as above presented, dependent from inertial reaction in a mass m in orbit), is the "Macrocosmic Relativity", concerning absorption of particles [IP] (belonging to the composite particles [BM]) from the gravitational field of flow of [$Ether/ESF$] generated by the central larger mass M and going to increase of a $\frac{\Delta M}{1"}$ the mass value of m , in simultaneous association with internal inertial transformation/degradation of an equal value $\frac{\Delta M}{1"}$ in the mass in orbit from status [IP] into [Ton] status, as shown in   Example **A)** above, it is in practice a discovery showing continuous formation inside a mass of a very useful status, since readily available to transformation/degradation into Heat in disparate ways, not only through the thermic devices mentioned above but through the recently discovered phenomena (classified as LENR) inducing dissipation from mass in [Ton] contained

inside the molecular entities of a mass $[Ton]$ to mass equivalent $[kJ]$, dissipated as Heat.

<u>in one of them Heat is coming out from an apparatus named e-Cat by its Inventor (Ing. A. Rossi).</u>
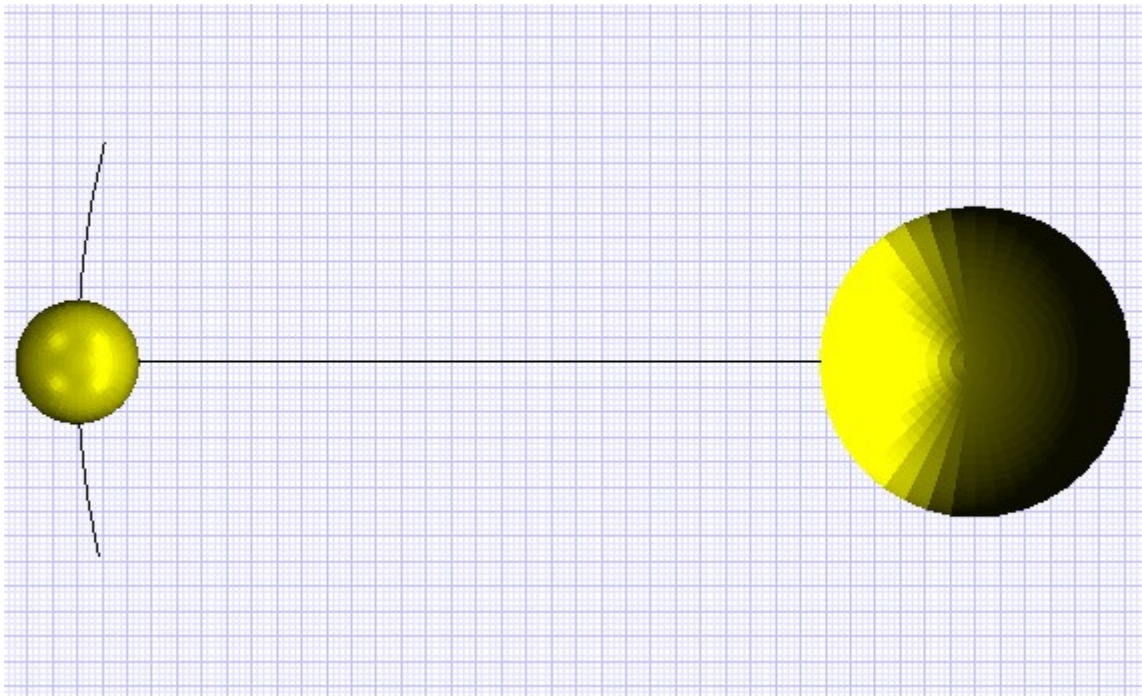
The Postulate below is based on the existence of three States of the mass respecting the following equivalences in the Universal Reality:

$$\rho_{IP} = 1 \left[\frac{IP}{m^3}\right] \equiv c^2 \left[\frac{Ton}{m^3}\right] \equiv c^4 \left[\frac{kJ}{m^3}\right]$$
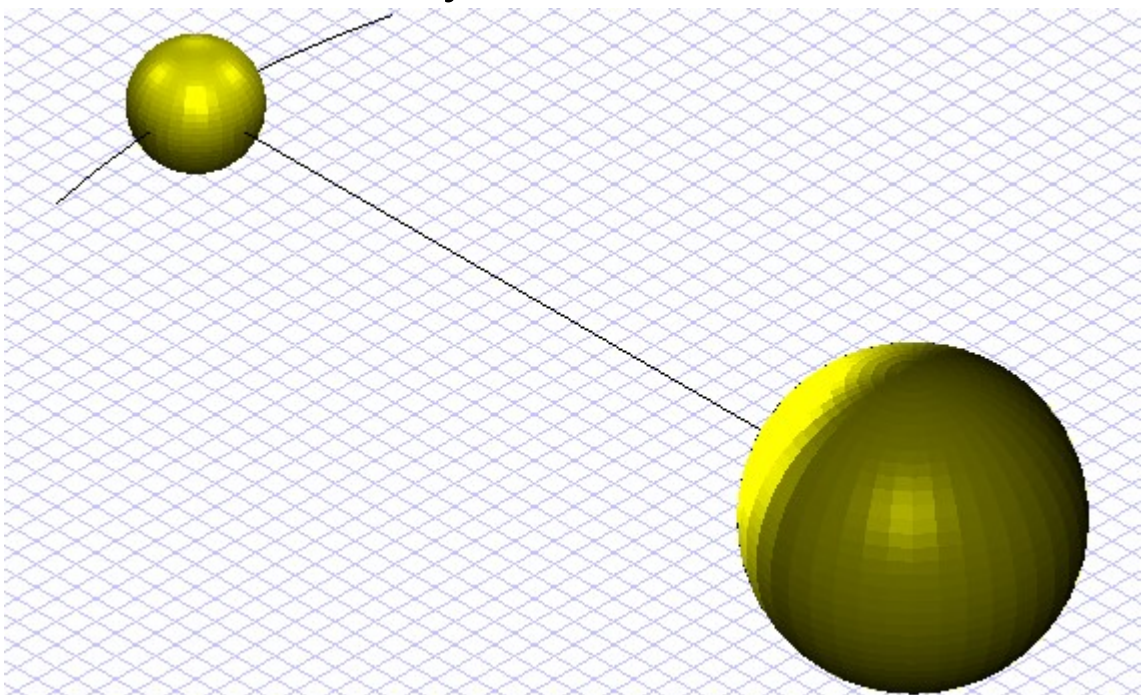
and existence of substance in the Euclidean Space going under the name $[Ether/ESF]$ as conglomeration of composite particles $[BM]$ of density:

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

"Macrorelativity "

"Macrorelativity "

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(English version)