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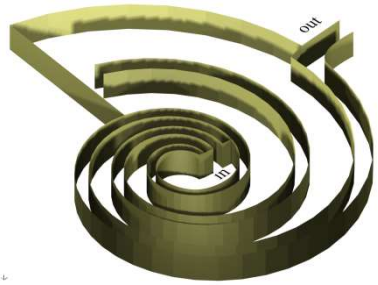


EX SPIRA AQUA MUNDA

In memory of my son Giovanni

12 October 2019

To my wife FRANCESCA

and my daughter AMANDA

Synopsis: A1) Gravitational absorption

Gravitational absorption of Substance $[ESF]$ by Physical mass $M(\rho, R)$, in $[Ton]$ finds continuity in the associated phenomenon that in absolute simultaneously transforms gravitational mass into Heat which (for the Law of conservation) is still equivalent to mass, is separated and coexists with the $M(\rho, R)$, and under radial absorption expands and gets ,away from the mass $M(\rho, R)$ in a condition of existence that can be compared to a liquid of variable density.

Both phenomena, the Gravitational absorption of mass as $[IP]$ particles in compressed status by Physical mass $M(\rho, R)$ (Newton's Law) and the consecutive phenomenon causing degradation of mass $M(\rho, R)$ into Heat (which is a status of existence of mass in fluid status coexisting with the mass $M(\rho, R)$) in which prevails radial absorption from the phase E_{ESF} away from the Mass $M(\rho, R)$ at reduced density with the radial distance, are taking place in consideration of presence of physical mass as Molecular substance (in respect of A. Avogadro's description of the Molecular structure of the Water molecule).

Note: the Water Molecule at density $\rho_W = 1$ is then the substance of reference at density $\rho_W = 1$ and all the other substances (elements) can be present inside $M(\rho, R)$ at densities $\rho > 0$ keeping into account that the substance beyond values of density $\rho \cong 20 \left[\frac{Ton}{m^3}\right]$ is unstable.

Recap - in order to proceed in ordered fashion I had to include the generic concept of Space Fabric $[SF]$ opposing in duality of presence, and setting in analogic correspondence the unit of volume $1[m^3]$ of phase $[ESF]$ of the Ether/ESF and the unit of volume $[SF]_U = 1[m^3]$ occupied by Water and by substances at

multiple density ρ of Water, whilst both Water and the phase $[ESF]$ are presented as basic substances) internally subdivided into cubic units of Space Fabric containing one basic unit of mass $[IP]$:

$$SF_{W-IP} = \frac{[SF]_U = 1[m^3]}{c^3 \cdot e^6}\ [m^3]$$

The particles $[IP]$ of density $\rho_{IP} = c^2 \left[\frac{Ton}{m^3}\right]$ in $[ESF]$ are the basic building blocks of both the phase $[ESF]$ and of the gravitational mass $M(\rho, R)$ and are in analogic correspondence (see The Gravitational Machine).

During the development of the gravitational primary phenomenon the $[IP]$ particles are entropically degraded/transformed from their pristine status in the $[ESF]$ through absorption inside the nuclei of the Molecules of the gravitational mass $M(\rho, R)$.

Note: the $[IP]$ particle at density $\rho_{IP} = 1 \left[\frac{IP}{m^3}\right]$, inside $[SF]_{W-IP}$ occupies a volume:

$$V_{IP} = \frac{SF_{W-IP}}{c^2} = \frac{[SF]_U = 1[m^3]}{c^3 \cdot e^6 c^2} = \frac{[SF]_U = 1[m^3]}{c^5 \cdot e^6} = 4.11e^{-49}[m^3]$$

A particle of spherical size of volume $V_{IP} = 4.11e^{-49}[m^3]$ would then have a diameter:

$$D_{IP} = \sqrt[3]{4.11 \cdot e^{-49}} \cdot 2 \cdot \sqrt[3]{\frac{1}{\left(\frac{4}{3}\pi\right)}}$$
$$= 0.0922\ [Fm]$$

In the Universal Reality, Gravitational mass is in duality of presence (analogic correspondence) with the phase $[ESF]$ of the Ether/ESF coexisting with it.

Ether/ESF is the fundamental substance pervading the whole Euclidean Space (containing Mass in status of $[IP]$ particles), in the phase $[ESF]$ each $[IP]$ particle “in status of quiet” is present in the centre of a fixed volume of $[SF]_{W-IP}$ at a maximum density $\rho_{IP} = 1 \left[\frac{IP}{m^3}\right]$.

Since only the gravitational mass has (by definition) the capacity to absorb mass $[IP]$ from the coexisting phase $[ESF]$

to this phenomenon is associated a chain of consequences causing irreversible physical changes in the ESF (which will be duly presented in the next Paper ("The Gravitational Machine).

Gravitational absorption by mass $M(\rho,R)$ (in time) of $[IP]$ particles from the phase ESF of the coexisting field of Ether/ESF is a phenomenon involving entropic degradation of a "fraction" of them which means loss of gravitational character due to transformation of mass $[IP]$ into equivalent mass $[Ton]$ in status of Heat, coexisting with the gravitational mass $M(\rho,R)$ as an elastic fluid, absorbed radially away from the mass from the phase E_{ESF} as previously mentioned etc….

The radial phenomenon of absorption by the E_{ESF} (dissipation) is a Force acting on the Heat which generates in $M(\rho,R)$ a radial field causing periodic internal radial displacement

$$\epsilon = \frac{v(\rho,R)^2}{2c^2}\left[\frac{m}{1"}\right]$$

$$F\cdot\epsilon = M(\rho,R)\cdot a(\rho,R)\cdot\frac{v(\rho,R)^2}{2c^2}\left[\frac{kJ}{1"}\right]$$

Divisions of Space Fabric in the phase $[ESF]$ are all the same ($[SF]_{W-IP} = \frac{1}{c^3\cdot e^6}\ [m^3]$)

To them corresponds inside the physical mass a phenomenon of Entropic degradation which assembles irreversibly the $[IP]$ particles into clusters belonging to gravitational elements as shown below:

1) Water "Substance" $\rho_S = 1\left[\frac{Ton}{m^3}\right]$ $[SF]_{U-Sub} = 1\left[\frac{Ton}{m^3}\right]$

2) Water "Entity" $\rho_E = \frac{1}{c^3}\left[\frac{Ton}{m^3}\right]$ $[SF]_{W-Entity} = 3.7e^{-26}[m^3]$

3) Water "Molecule" $\rho_M = \frac{1}{c^3\cdot 1118}\left[\frac{Ton}{m^3}\right]$ $[SF]_{W-Molecule} = 3.31e^{-2}\ [m^3]$

4) Water "nodule" $\rho_n = \frac{1}{c^3\cdot 1118\cdot 40}\left[\frac{Ton}{m^3}\right]$ $[SF]_{W-no} = 8.28e^{-3}\ [m^3]$

5) Water as $[IP]$ $[SF]_{W-IP} = \frac{1}{c^3\cdot 1118\cdot 40\cdot 22{,}36}\left[\frac{Ton}{m^3}\right]$

$$SF_{W-I} = \frac{1}{c^3 \cdot e^6} = 3.704e^{-32}\ [m^3]$$

With this last equation the basic Space Fabric for $[IP]$ particle was found to be a volume:

$$[SF]_{W-IP} = \frac{[SF]_{W-Entity}}{e^6}$$

Therefore to obtain $[SF]_{W-Entity}$ takes

$$e^6 \cdot [SF]_{W-IP} = [SF]_{W-Entity}$$

(Note: the identity $e^6[cm^3] = 1[m^3]$ can create confusion since in effects is only a coincidence if we think that to fill $1[m^3]$ we need $c^3 = 2.7e^{25}\ entities$ each containing $e^6 = 1{,}000{,}000\ [SF]_{W-IP}$

To call "gram" the water content of a volume $[SF]_{W-IP}$ because $1e^6[gr] = 1[Ton]$ is confusing also in consideration of the fact that the mass of a molecule of water (H_20) is only:

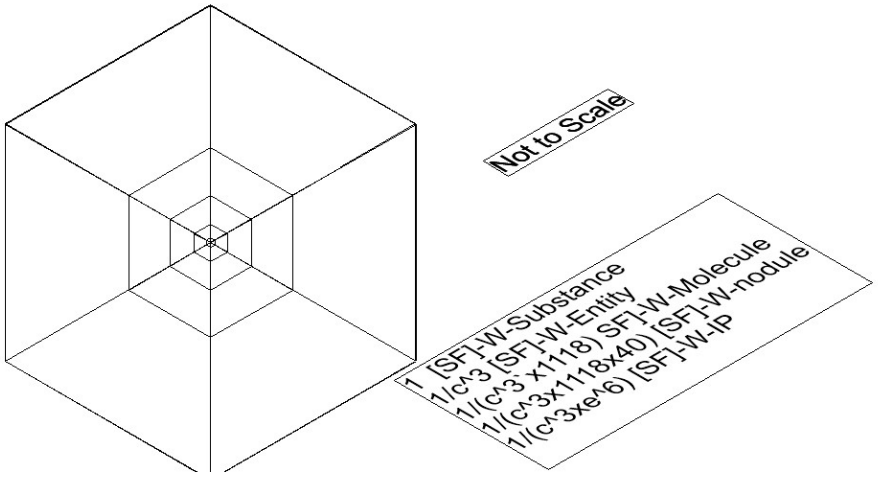
$(40 \cdot 22.36) = 894.4\ [SF]_{W-IP}$ etc..

What really counts in this theory of existence is that

Inside the volume $[SF]_{W-IP}$ as basic Space Fabric there is mass contained at density of Water $\rho_W = 1\left[\frac{Ton}{m^3}\right]$ which justifies subdivisions of the unit of volume $[SF]_U = 1[m^3]$ into volumes of $[SF]$ going from $[SF]_{W-IP}$ to $[SF]_U = 1[m^3]$.

And as seen the mass of water is present inside $[SF]_U = 1[m^3]$ at density $\rho_{IP} = 1\left[\frac{IP}{m^3}\right] \equiv c^2\left[\frac{Ton}{m^3}\right]$ in groups of volumes of $[SF]$ going from $[SF]_{W-IP}$ to $[SF]_{W-Substance}$ and the unit of volume that contains an amount of mass at density $\rho_{IP} = 1\left[\frac{IP}{m^3}\right]$ will contain only nominally $c^3 \cdot e^6\ [IP]$ inside the unit of volume since in it the mass of the single $[IP]$ particles occupies a volume c^2 smaller, the $[SF]_U = 1[m^3]$ containing mass at density of substance ρ_W is practically empty etc..

Phase



Note: $[IP]$ particles belonging to the phase $[ESF]$ of the $[Ether/ESF]$ on contact with the mass are absorbed continuously in time, through a phenomenon called “entropic transformation-degradation” described trough the Universal constant of absorption.

Absorption therefore takes place in particles $\left[\frac{IP}{1"}\right]$ by the mass M(ρ, R) “but for convenience” was always presented in equivalent units of expanded mass $\left[\frac{kJ}{m^3 1"}\right]$:

$$k = 0.000000837758 = \frac{4}{3}\pi \cdot 2e^{-7}\left[\frac{kJ}{m^3 1"}\right]$$

And when (the $[IP]$ particles belonging to the phase $[ESF]$ join (by absorption) the gravitational mass $M(\rho, R)$ with whom are coexistent, as components of the phase $[ESF]$, a complex phenomenon takes place in time during which the content of Space-Fabric occupied by them is released as Heat in $\left[\frac{kJ}{1"}\right]$ (absorbed by the phase $[E_{ESF}]$ and transmitted radially away from the $M(\rho, R)$ through radial expansion).

Note: in this narrative the effects caused by this phenomenon are small and for the moment overlooked.

Mass increase due to Gravitational absorption in time is:

(For Sun) $\frac{k \cdot M_{Sun}}{c^2} = 18\,616.8 \left[\frac{Ton}{1"}\right]$

Is in simultaneity with the above loss (on contact) of the Space Fabric SF_{W-IP} surrounding them is (still for Sun):

$$\frac{k \cdot M_{Sun}}{c^4} = 18\,616.8 \left[\frac{kJ}{1"}\right]$$

As can be noticed this example above is also a case of analogic correspondence.

The $[IP]$ particles as conservable substance, whilst flowing radially inside the mass $M(\rho, r)$ during absorption are always subjected to degradation of a fraction of their flow, from status of $[IP]$ into status of Heat in units $[Ton]$ associated to loss of gravitational character.

The loss of gravitational character of a fraction of the gravitational flow of $[IP]$ particles entering the gravitational mass $M(\rho, r)$ "through gravitational absorption" means their transformation/degradation/expansion from mass as particles $[IP]$ of density $\rho_{IP} = 1 \left[\frac{IP}{m^3}\right]$ to mass equivalent $1[IP] \equiv c^2 \left[\frac{Ton}{m^3}\right]$ (in terms of conservation) which means presence of a flow of mass in status of Heath (also) in coexistence with the gravitational mass $M(\rho, r)$ but flowing radially away from $M(\rho, r)$ under absorption by the phase E_{ESF} of the $[Ether/ESF]$.

The abovementioned "gravitational" continuous loss "in time" on contact of the Space Fabric containing the $[IP]$ particles and their simultaneous continuous absorption causing permanent flow, induces a permanent depression field inside $M(\rho, R)$ and both these fields of mass are conservative and extend outside the mass $M(\rho, R)$ to infinite radial distance over all the Euclidean Space.

Note: the phenomenon of absorption just outlined here is undeniable and very complex, since we cannot observe it directly is only subject of interpretation, based on observation of macrocosmic events and of phenomena of microcosmic origin. This is the reason, for which, it will probably always defy complete knowledge.

In conclusion, during the gravitational permanent absorption by the mass $M(\rho, R)$, a portion of the flow of $[IP]$ particles along the

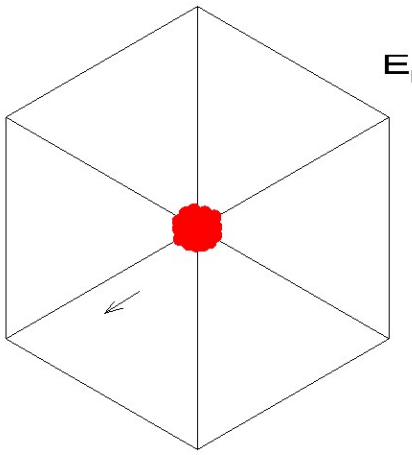
radial distance $0 < r \leq R$ is always inside $M(\rho, R)$, in terms of conservation) transformed into Heat, which as mass in non gravitational status flows radially away from the mass $M(\rho, R)$ (at speed of $1\left[\frac{m}{1''}\right]$) under absorption by the phase $[E_{ESF}]$ of the $[Ether/ESF]$ and only when Heat flows out of the external surface of the mass $M(\rho, R)$ becomes subject to further expansion moving away at radial speed $c\ \left[\frac{m}{1"}\right]$ etc..

Note: Heat as expanded mass in units of $[kJ]$ is inertial fluid that under the enormous but constant nature of absorption by the phase $[E_{ESF}]$ (is subjected to a natural unstoppable Force in analogic correspondence with the gravitational Force) it is released by a mass subjected to the gravitational phenomenon as dependent (secondary) internal of transformation/degradation, of a fraction of the constant gravitational absorption.

Heat of gravitational origin is permanent loss by $M(\rho, R)$ of gravitational mass $[IP]$ and flows radially away from the Gravitational mass at constant radial speed of $1\left[\frac{m}{1''}\right]$ as mass in $[Ton]$. Flow of Heat caused by the gravitational phenomenon is an entire chapter in the study of phenomena associated to gravity.

When the Heat internal to the mass $M(\rho, R)$ reaches its external surface extends its presence in Space with expansion at constant flow and ultra reduced density, flowing away from $M(\rho, R)$ at external radial velocity $c\ \left[\frac{m}{1"}\right]$ etc..

This last phenomenon considering expansion of mass in status of Heat was recognized in the past and described as “entropic degradation” and is part of the “Second Law of Thermodynamics” under the name of “Postulate of Kelvin”. (See: TERMODINAMICA by E. Fermi) `



E_{ESF}

Not to Scale

22.36 IP particles clustered together as one nodule going to join 40 nodules at the centre of a Water Molecule which will then contain 894.4 IP particles

cube SF W-Nodule

Next Paper entitled, “Gravitational Machine; how it works” will show in better details the workings of the gravitational absorption by a mass $M(\rho, R)$ and the analogic correspondences to which the opposing phenomena of gravitational origin are subjected.

The phenomenon of dissipation will then be object of further attention.

These phenomena closely connected are part of an open cycle of entropic transformations/degradations affecting Substance in status of mass, in touch with the following equivalences:

$$\rightarrow \left(\rho_{IP} = 1\left[\frac{IP}{m^3}\right] \equiv c^2\left[\frac{Ton}{m^3}\right] \equiv c^4\left[\frac{kJ}{m^3}\right]\right) \rightarrow$$

Continuous advances in the study of the Physical Reality show that since the $[IP]$ particles are basically subjected to entropic transformations giving them physical characters “movements, expansions, vibrations, change of physical status of existence etc.. and of interactions with other coexisting status of masses made up of the same substance they are subjected to changes of status which make their presence dependent from the local conditions (usually definable by formulations

considering their presence in bulk and therefore definable through a statistic average and not through the single particle).

As consequence of the above interpretation, in the Physical Reality there is presence of physical objects subjected to transformations under a pattern of consecutive degradations, in order to explain starting from substance existing in pristine status we must accept the fact that this very substance must coexist with the various stages of transformations/degradations to which it is subjected.

For analogic relations between MICROCOSM and MACROCOSM see:

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