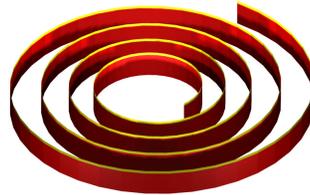


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EX SPIRA AQUA MUNDA

In memory of my son Giovanni

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(14 pages)

List of Principles in the UDS

PART 1

I) Principle (conservation)

In physical phenomena concerning the mass there is conservation of substance as mass in [Ton], or as mass expanded in equivalent units [kJ] in a context of degradation during transformation in time constituting dynamism (development of movement in space).

Note: time and transformation-degradation of substance from mass status to the end status as mass equivalent in dissipation of physical objects occupying space are absolutely connected.

II) Principle (based on the Law of Equivalence)

The transformation-degradation acting on a physical mass "dm" is associated to "expansion" of the $dm=\rho \cdot dv$ [Ton] of mass inside the Euclidean space occupied by the Ether/ESF, transformed into mass equivalent in units of mass dmc^2 in [kJ], a status in which it is under absorption at c speed by the Ether/ESF.

Such expansion is an absolute feature of the transformation-degradation of a $dm=\rho \cdot dv$ [Ton] into an equivalent amount dmc^2 [kJ] since can only be explained as a phenomenon of absorption in time which requires that the mass dm, diluted c times, expands its presence over the distance c which by necessity must be run over /1", therefore occupying a volume $(dv \cdot c)$ [m³] expanded c times as mass expanded in units of mass equivalent in [kJ] whilst in the initial status was occupying a volume dv [m³] in a stable status of existence.

The mass in this new diluted dynamic status is maintaining the identity of the substance as mass into c^2 smaller units [kJ]:

$$dm=\rho dv \quad [\text{Ton}] \equiv dm \cdot c^2 [\text{kJ}]$$

The above equation describes "transfer of mass" and is not a simple numeric equivalence since requires the notion that is describing a transformation-degradation taking place in a basic (1") time interval and from a beginning (in which took place through expansion of a dm the dm/c of mass present in space in equivalent status dmc since not subjected to frictions carries on its linear movement at c under absorption by the Ether/ESF.

Absorption by the Ether/ESF of a dm contained in the physical mass "M" will not take place at c speed but at v speed since the dynamism of the dm will be transferred to the mass "M" in respect of conservation an accordance with the following equation:

$$dmc^2 = Mv^2 [\text{kJ}]$$

If "M" is a solid/liquid mass or if it is a gas in which the atomic entities under absorption by the Ether/ESF are all moving in the direction of v we say that v in "M"

is endowed of “vector” \vec{v}_T character, any other description of presence of v in "M" (solid/liquid or gaseous) is described through a “scalar” character v_T .

Pure mass expanded as $dm c^2$ [kJ] as consequence of being subjected to complete transformation-degradation, is coming out of a mass "M" on its own and under absorption by the surrounding Ether/ESF acquires the dynamic characters mentioned above.

In these conditions is to be considered a physical entity coming out of the physical mass "M" in a status of extreme degradation (of the dm [Ton] previously belonging to "M" [Ton]).

Dissipation in the Ether/ESF as a flow of a $dm \cdot c / 1$ ” coming away (moving) at c speed of expansion from a Large Gravitational Mass " M_{LGM} " subjected to internal phenomena of extreme degradation of gravitational origin takes place along the radial direction under absorption by the Ether/ESF at the maximum expansion value c .

Dissipation of mass equivalent from a mass M_{LGM} represents a case in which the “vector” character is associated to natural degradation due to the fact that expansion of the dm is uniformly distributed in all radial directions.

III) Principle (various concepts, such as conservation, adhesion, absorption and fields of depression and flow of gravitational nature in the Ether/ESF subjected to absorption by a Large Gravitational Mass M_{LGM}).

A transformation-degradation of gravitational nature (explained in terms of conservation in a mass "M" inside a gravitational field of depression and flow of the Ether/ESF caused by absorption of the Ether/ESF by the mass M_{LGM} , at the centre of such field), acts on the internal adhesion of substance inside the physical mass "M" (the phenomenon is the one causing a transformation-degradation through

dynamic expansion in the atoms of the mass "M" of a $dm(t)_0$ into $dm(t)_0 c^2$:

$$dm(t)_0 \cdot c^2 = \frac{1}{2} M v(t)^2 [\text{kJ}] \quad \text{for } v \ll c$$

which whilst belonging to "M" is absorbed by the Ether/ESF along the line of depression and flow of the Ether/ESF, causing this way movement of "M" at $v(t)$ speed (increasing with t) and must be interpreted as a **Low Energy Nuclear Reaction** LENR).

The phenomenon is expanding the mass $dm(t)$ [Ton] residing inside "M" into units of mass equivalent $dm(t)c^2$ [kJ] which according to the Principle II) above become subjected to absorption by the Ether/ESF whilst belonging to "M" and consequently starts movement of "M" (or increases existing movement of it) whilst absorbed by the

Ether/ESF along the line of depression and flow of the Ether/ESF, causing further release by ablation inside "M" whilst it is moving at accelerated speed in the gravitational field of the Ether/ESF towards the surface of the gravitational mass M_{LGM} .

IV) Principle (concepts concerning degradation and upgrade of substance, in gaseous status, characterized by two states of existence a) as mass expanded in "scalar" status whose presence can be had through measure of temperature (reduced to Heat [kJ]) and b) in "vector" status (or Total Force, F_{Tot} [kJ]).

- Inside a rigid container presence of internal movement of the atomic (molecular) entities moving inside it is in haphazard fashion, the mass in expansion dmc^2 belonging to a mass "M" of gas, under absorption by the Ether/ESF, follows the Law in Principle II :

$$dmc^2 = Mv^2 \text{ [kJ]}$$

Since the atoms of the mass in gaseous status are endowed of haphazard movement the dmc^2 belonging to them is measured by a value of pressure:

$$\frac{Mv_T^2}{V} \equiv \frac{dm \cdot c^2}{V} \equiv \rho \cdot v_T^2 \left[\frac{\text{kJ}}{\text{m}^3} \right] \equiv \left[\frac{\text{kN}}{\text{m}^2} \right]$$

against the internal surfaces of the container and the effect of the collisions against the internal surfaces of the container is measured by absolute temperature $T^\circ\text{K}$ according to gas Law:

$$dmc^2 = \rho V v_T^2 = nRT^\circ \text{ [kJ]}$$

This measurement of physical quantity is also going under the name of Energy, and in its presence of movement is associated to a "scalar" velocity v_T (as a presence in "M" of a value of velocity v_T of the single atomic entities of the gas moving in haphazard fashion each one under absorption by the Ether/ESF in the direction of its own movement).

Nonetheless in these conditions a value of contact Force in opposition [kN/m^2] at the internal surface of the box betrays that the nature of this Energy is also a Force [kJ/m^3].

If then the same atoms (within the mass in that status) are ordered into movement in a fixed direction, since now they expand under directional absorption by the Ether/ESF, it results possible to represent them as cause of Force (F_{Tot}) or directional kinetic Energy through the symbol \vec{v}_T , which means that we can attribute to the movement of "M" a "vector" character.

Note: all physical states of existence in Nature of the mass equivalent in units of [kJ] are respecting these conditions since they are the result of expansion through transformation-degradation of mass into mass equivalent.

Note: the transformation-degradation through expansion of a dm [Ton] into an equivalent $dm c^2$ [kJ] as above discussed (depression and flow of the $dm c^2$ initially contained in the volume dv under absorption by the Ether/ESF along the direction of depression is basically an elastic natural phenomenon associated to degradation of character of the dm of mass.

Note: I avoid here the study of Quantum M. phenomena and restrict the presentations in the UDS to the observation of velocities $|v| \ll c$ inside an unit of volume 1 [m³] of gas containing a mass at density ρ to which corresponds a value of compressions $p = \rho v^2 \ll \rho c^2$ [kJ/m³] whereas it can be said that to a value of expansion (degradation from A to B along the isotherm T₁) in space of the mass equivalent in [kJ] (in conditions of conservation) corresponds the following equation:

$$\rho_A V_A v_A^2 = \rho_B V_B v_B^2 = nRT_1 = dm c^2$$

In the UDS velocity values are considered both in phenomena studying gases and in those considering solid masses M_{LGM} in which since movements are impeded the presence of degradation in units of expanded mass [kJ/1"] as a measure of transformation as effect due to the ratio of the gravitational depression in space on the Static Force inside the M_{LGM} , is described through the ratio $(\rho v(r)^2/c^2[-])$ of the gravitational Static Force $\rho a(r)$ (inside the gravitational mass $M_{LGM}(R)$ of radius R).

Over an unit of volume in [m³]:

$$\left[\frac{dm(r) \cdot c^2}{1''} \right]_{\text{Heat}} = \rho a(r) \frac{\rho v(r)^2}{c^2} \left[\frac{\text{kJ}}{\text{m}^3 \cdot 1''} \right] \quad \text{for } r \leq R$$

Note: vibrations inside a gravitational mass M_{LGM} are releasing inside it, mass equivalent $(dm(r)c^2/1'')$ [kJ/m³] in expansion at a level of complete degradation that frees it from belonging to the atoms but still belongs to the M_{LGM} (is trapped inside the M_{LGM} and being now contained in the M_{LGM} in a compressed status as Heat inside the mass M_{LGM} flows out of it absorbed by the Ether/ESF surrounding the M_{LGM} in that status, save that goes into full expansion at c speed uniformly in all radial directions, once reaches the surface of the M_{LGM} .

Note: the above equation integrated over the volume of our Sun gives:

$$= \int_0^R \rho a(r) \frac{\rho v(r)^2}{c^2} 4\pi r^2 \rho dr = \left[\frac{\text{kJ}}{1''} \right] \quad \text{for } 0 \leq r \leq R$$

and $\rho_{\text{Sun}}=1.412 \text{ [Ton/m}^3\text{]}$

$$= \int_0^R \frac{k}{3} \rho r \frac{k \rho r^2}{3c^2} 4\pi r^2 \rho dr = \left[\frac{\text{kJ}}{1''} \right]$$

$$\text{Gives: Dissipation} = \frac{\frac{1}{2} a(R)^2 R \cdot 2e^{27}}{c^2} = 5.86e23 \left[\frac{\text{kJ}}{1''} \right]$$

see Google The GS Journal.net /[Research Papers-Astrophysics/Download/2278](#)

Where is shown that the Heat in values of units of mass equivalent in [Ton] over the unit of time, coming out of the Sun is represented by a value of dissipation in units of mass:

$$\Delta M_{\text{Mass equivalent to Heat}} = 6.52e6 \left[\frac{\text{Ton}}{1''} \right]$$

Note: The Ether/ESF is the basic source of substance, it does exists in the Euclidean Space at density $\rho_{\text{ESF}}=1 \text{ [Ton/m}^3\text{]}$ equivalent to an expanded mass in units of [kJ] of $c^2 \text{ [kJ/m}^3\text{]}$ and its temperature (in pristine conditions and away from physical masses) is $T=0^\circ\text{K}$.

Its base component consists of Indefinable Particles (IP) deprived of movement

$v=0 \text{ [m/1'']}$ "scalar 0".

Its presence gives the Euclidean Space a physical nature and the capacity to produce, through the gravitational phenomenon, transformations-degradations of physical nature in the mass; it is also endowed of a character which here is referred as "fabric" coming into existence through a field of depression through absorption by a central mass M_{LGM} , it also flows (as a field) when absorbed by the gravitational mass M_{LGM} which, through absorption, transforms/degrades it into more gravitational mass.

Ether/ESF over and above the capacity to be depressed and to flow when under gravitational absorption by a mass M_{LGM} , has as well many other physical characters one of these characters is that when due to insertion in "M" of inertial mass, (dm in expansion as $dm c^2$ and the velocity v of a mass "M", approximates the velocity $v \sim \rightarrow c$, since c is an absolute limit , insertion of inertial mass dm increasing the v in "M" means compression of inertial mass dm into the volume V containing "M" increasing its density whilst "M" is moving against the Ether/ESF whose fabric results compressed since "M" moves at v close to the limit c :

At initial conditions is "M" and for $M=\rho V$ and $v \sim c$

$$\lim_{v \rightarrow c} \frac{Mv^2}{(c-v)^2} = \lim_{v \rightarrow c} \frac{\rho}{(c-v)^2} V \cdot v^2 = \infty$$

Inertia of "M" , then, in this case consists in the fact that the same mass that we introduce in "M" as mass dm expanded with the intent to increase its movement enters "M" under compression (generated in it by the opposition/compression provided by the Ether/ESF when we try to increase the velocity v of "M" against the limit c and becomes part of M).

Note: for $v \ll c$, "a"(numerically equal to a(r) is the value that explains the expansion of the depression character a(r) in the formula of acceleration without recourse to the concept of inertial Force belonging to "M" in opposition to movement (resistance to acceleration of movement by "M"), in the formulation of the justification of movement, since in the gravitational formula the transformation-degradation causing depression a(r) is in straightforward connection with the expansion of movement.

Note: the a(r) depression associated to expansion of movement "a" of the same value in a mass "M" , must be seen in similitude with the manner in which mass dm expands in space into mass equivalent dmc^2 , such expansion is an elastic character of the phenomenon through which the transformation-degradation of mass dm [Ton] into mass equivalent [kJ] (in conditions of conservation under expansion), permits to the dm inside the mass "M" or in free condition of expansion to acquire dynamism whilst depressed under absorption by the Ether/ESF.

VI) Principle (transformation-degradation)

Transformation is a phenomenon which always takes place over a time interval it can be associated to a phenomenon of expansion in natural conditions which takes place also as "scalar transformation" of the mass into a "degraded" or more expanded status but in a transformation as the one in Principle IV (consisting of "upgrade" of Heat into Work, associated to degradation trough depression of an amount of mass equivalent (dmc^2) in the conditions described there (Carnot) the associated degradation is an absolutely necessary phenomenon.

Over and above all, every transformation, be it associated to "degradation" or to "upgrade" though is taking place in conditions of "conservation" is also associated to degradation of the characters of the mass proper.

This is to say that if the character of the transformation recompresses the dm into the mass in which it was originated such a dm is always mass in a degraded status of existence (see the Borehole).

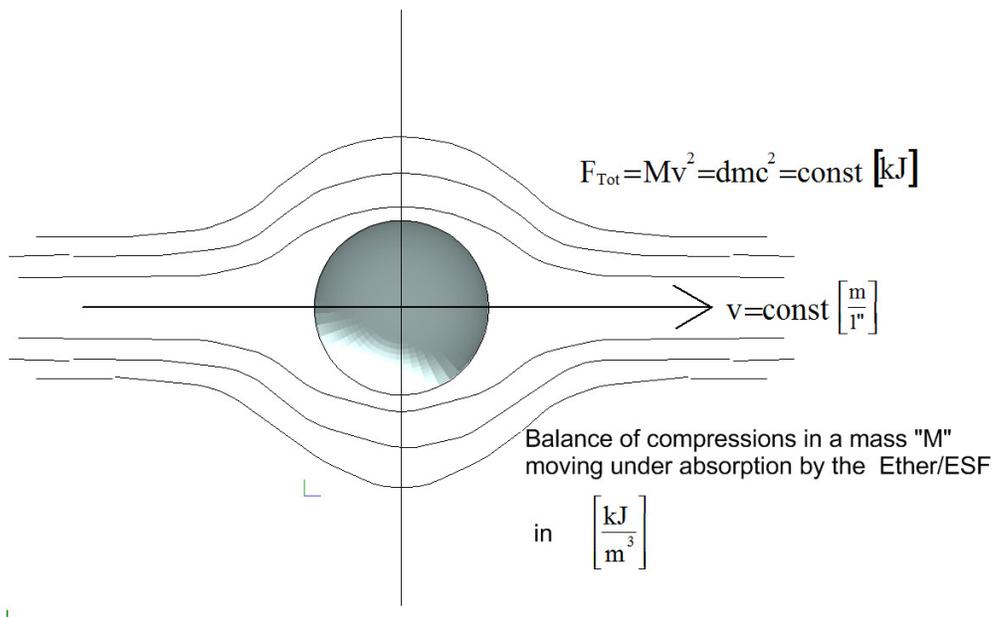
And what said above is valid also if the dm is in expanded status, since once it is subjected to further expansion, even if under recompression returns to the previous status it will return there in degraded physical status.

Note: this has to do as well with the fact that there is no way to invert the gravitational transformation returning the gravitational mass back to become Ether/ESF again.

Note: the above explanations interest only a part of the Universal Reality since the surface of the atomic entities is also made of a thin layer of Ether/ESF due to the fact that substance dm released as dmc^2 in expansion by the atomic nuclei through transformation-degradation, though being under absorption by the Ether/ESF is in a special status in which cannot penetrate it and as consequence cannot expand (dissipate freely) since stopped (opposed) to do so through formation of a thin layer of compressed Ether/ESF (constituting the surface of the atomic entity, which in this manner constitutes presence of a natural container) and the remark that, in the Universal Reality, the infinite phenomena consisting of transformations-degradations over which life itself is finding explanation, are all interlinked to the Ether/ESF and to the presence of objects in which are present phenomena of transformation-degradation originated by the Ether/ESF itself (through its capacity to be absorbed by a mass –gravitation- and to absorb the mass in expansion (through degradation-dissipation, as discussed).

Note: the first and most important of the transformations-degradations to which the Ether/ESF is subjected is the gravitational one, since due to absorption by a mass M_{LGM} the Ether/ESF is transformed into physical gravitational mass inside the M_{LGM} itself.

In the gravitational process of absorption by the mass M_{LGM} , as reaction to absorption by it, the Ether/ESF surrounding it, is subjected to depression and flow of the substance of which it is made (the character developed is described as presence in it of a field having “fabric character”, furthermore notwithstanding allowing frictionless passage of physical mass “M” in movement inside it, the Ether/ESF is opposing compression “during that passage” in it of the volume occupied by “M” followed by an exactly opposite value of depression “after passage” in symmetric fashion in respect of a plan vertical to the direction of movement ($\pi/2$) in accordance with Newton’s 3rd Law.



Note: treatment of phenomena of electric and magnetic nature have been avoided but not disregarded, as it will be clear to those who are familiar with them that many Laws and effects are similar to those mentioned so far in regard of gravity and so far, justified here, through introduction of Laws considering existence of the Ether/ESF.

VII) Principle

(Newton's 3rd Law)

Newton's 3rd Law is essential in the interpretation of the physical phenomena described above, since Force of active nature originated by transformation-degradation of gravitational or of other nature (chemical, atomic, electric and magnetic through use of devices) is connected with expansion of mass in time, therefore any phenomenon described through mass expansion under absorption by the Ether/ESF being representation of release of Force is "by Newton's 3rd Law opposed by an equal and opposite one" (see also above graphic for $F_{Tot}=Mv^2 \equiv dmc^2$).

Gravitational phenomena consist of:

a) a Potential of expansion (generating a Force of Potential nature) acting on the mass "M" [Ton] impeded to move, whilst immersed in the gravitational field of depression and flow of the Ether/ESF, generated by the mass M_{LGM} , such Potential (in a mass "M" [Ton] of relatively small size resting on top of the M_{LGM} or positioned not far from it, but still impeded to move by contact with a rigid surface) subjects "M" to absorption by the Ether/ESF which in this way is generating in it the "Static Force".

b) Effective expansion (as movement) in Space of mass "M" [Ton] free to move, since immersed in the gravitational field of depression and flow of the Ether/ESF (as above) whilst subjected to ablation (gravitational transformation-degradation of its gravitational component, in time during movement):

$$dm(t) \cdot c\vec{c} = \vec{F}_{Tot}(t) = \frac{1}{2} M \cdot v(t) \cdot \vec{v}(t)$$

Such transformation-degradation is consisting of internal expansion of mass in [Ton] into mass equivalent in [kJ] simultaneously absorbed by the Ether/ESF in the direction of the gravitational depression and flow in which is immersed, in such a way that whilst expansion takes place in time the object mass is occupying an increasing volume in space over the same interval (1") of time (is the space occupied by the Ether/ESF - as substance - which opposes the expansion in it of the volume occupied during movement in time by the mass "M" inside which transformation-degradation for $v \ll c$ occurs:

Note: in this case since is $v \ll c$ and not $v \sim c$ the Forces are small and the mass dm is not compressed inside "M" (therefore the density ρ of "M" doesn't increases (see Principle V):

$$\frac{dm(t)c^2}{1''} = M\vec{a}(r)at = F_D(t)$$

The above equation represents transformation-degradation, in the direction of the gravitational depression and flow generating ablation $a(r)$ per unit of length (m) of the mass "M" which whilst subjected to $a(r)$ depression) expands "a" times (m/1") therefore in the above formula results expanded at/1" times along t units of times, reflected in the interval of 1" under consideration by the speed $v=(at)/1''$ along the direction of depression and flow of the gravitational field ($a/1''$) as expansion associated to the depression $a(r)$ in "M" - and $dmc^2=Ma(r)$ - can be written:

$$\frac{dm(t)c^2}{1''} = \frac{dmc^2 at}{1''} = F_D(t)$$

it takes place whilst "M" is moving inside the field of depression and flow of the Ether/ESF is associated to ablation as well (in the gravitational field generated by the mass M_{LGM}) (such a value of transformation like the Static Force can be referred as Body Force (F Dominant, $F_D(t)$, with the difference that it depends by time).

The development of these forces (such as in a) and in b) -both of gravitational origin- generates opposition Forces. Whereas we have that the opposition Force working against the Static Force is a contact Force expressed in [kN] due to contact with a rigid surface, we have that not only the active Force is an effect of absorption by the Ether/ESF but the Ether/ESF also supplies the Force working against the active Force.

Note: $F_D(t)$ is the Dominant Force developed t" after the freefall phenomenon started to be active on "M" and is supplied by absorption by the Ether/ESF of the substance released in "M" by internal transformation-degradation due to ablation in the gravitational field it can be expressed in [kJ] but we must remember that it finds in the Ether/ESF an opposition Force of equal value which increases with the time.

Interpretation of the elastic phenomenon under Newton's 3rd Law

Case 1) A medium made up of a mass "M" containing atomic entities which are considered rigid surrounded by interstitial mass having Elastic characters develops the Static Force through gravitational transformation-degradation affecting the atoms, consequently this Static Force is compressing the interstitial mass before being discharged over a rigid contact surface below M.

Through the elastic phenomenon (gravitational) comes into existence, by ablation, a secondary phenomenon inside "M" which when "M" is deposited over a rigid surface can cause compression along the gravitational depression up to a percentage ϵ of the height H :

$$F_{El-Tot} = dmc^2 \frac{\Delta V}{V} = Ma(r)\epsilon = F_S \epsilon \quad [kJ]$$

The above F_{El-Tot} in "M" is generated by release through gravitational expansion against the interstitial mass of "M" of a $dmc^2(\Delta V/V)$ (internal to "M") which is simultaneously recompressed inside the interstitial mass in upgraded status until inside "M" is established equilibrium between the internal gravitational F_S and the contact Force at the support beneath it.

$$Ma(r) = \rho a(r)V = \sigma V \quad [kJ] = \bar{\sigma} \cdot A \quad [kN]$$

Whereas $\sigma = \rho a(r)$ [kJ/m^3] is a body Force and σH is the sum of the body forces in [kJ] over H to it is opposed a contact Force $\bar{\sigma}$ in [kN/m^2] and for Hooke's Law (E [kJ/m^3]) $\sigma = E\epsilon$ (ϵ [-]) since the body force is built up in "M", it results:

$$F_{El-Tot} = \sigma V \epsilon = \frac{\sigma^2}{E} V \quad [kJ]$$

Case 2) the Force originated in a mass "M" affecting by contact Force the interstitial mass of a mass $M' = \rho V' = \rho A' H'$ beneath it before being discharged over a rigid contact surface below.

This case represents insertion in M' of a dm in expansion of inertial nature originated in the mass "M" above it and recompressed inside the interstitial mass of M' in upgraded status, the gravitational Force is transmitted in M' from the mass "M" above as Contact Force in [kN] :

$$dmc^2 = Ma(r) = F_S = \sigma V \quad [kJ] = \bar{\sigma} \cdot A' \quad [kN]$$

The $\bar{\sigma} A' \quad [kN]$ is transmitted along H' therefore applying the Universal

Law in the UDS and taking into account that the gravitational F_S is subjected to ablation $\Delta H = \bar{\epsilon} H'$ the dmc^2 transmitted and compressed in V' will be:

$$dmc^2 = F_S \frac{\Delta V'}{V'} = F_S \bar{\epsilon} H' = Ma(r) \frac{Ma(r)}{A' \cdot E} H' = \frac{\bar{\sigma}^2}{E} V' \quad [kJ]$$

Note: we can refer to active Forces as in a) and b) as "body forces" in [kJ] whereas contact Forces are always opposition forces in Static and in dynamic conditions. But in dynamic conditions the contact Force releases (through friction) from the mass "M" to which it belongs, mass in expansion belonging to the $F_{Tot}(t)$ as dissipation, generating this way a system of forces in dynamic equilibrium (still in respect of Newton's 3rd Law).

Note: the study of the elastic phenomenon in Static and in dynamic conditions encompasses an enormous field of knowledge in the UDS and regards storage

under transformation-degradation and transmission (in accordance with the way the mass in expansion $dm c^2$ or $dm(t)c^2$ is introduced in the in the interstitial mass (the interstices between the atomic entities belonging to a mass "M" where results upgraded through compression).

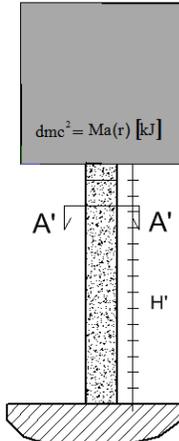
how the opposition Force works

Case 1)
 Note: σ is a mass Force $\left[\frac{\text{kJ}}{\text{m}^3} \right]$
 $Ma(r) = \rho Va(r) = \sigma V$ [kJ]
 Hooke's Law (empirical) due to release for mass force is

$$\varepsilon [-] = \frac{\sigma}{E} \left[\frac{\text{kJ}}{\text{m}^3} \right]$$

Case 2)
 Note: $\bar{\sigma}$ is a surface Force $\left[\frac{\text{kN}}{\text{m}^2} \right]$
 σV [kJ] = $\bar{\sigma} A'$ [kN] opposition Force in kN
 Hooke's Law (empirical) as opposition force is straight no release and for surface force is

$$\varepsilon [-] = \frac{\bar{\sigma}}{E} \left[\frac{\text{kN}}{\text{m}^2} \right]$$



F_{El-Tot} mass equivalent in [kJ] absorbed by the column in the elastic contraction
 $F_{El-Tot} = Ma(r) \frac{\Delta V}{V} = Ma(r) \cdot \varepsilon H$ Note: εH is a pure number
 Note: F_{El-Tot} is mass equivalent dmc^2 released in expansion by gravity and absorbed, conserved compressed again (upgraded) inside the mass of the column $A'H'=V'$
 due to release for $1mc$ will be:

Case 1)

$$\frac{F_{El-Tot}}{A \cdot H} = \sigma \varepsilon = \frac{\sigma^2}{E} \left[\frac{\text{kJ}}{\text{m}^3} \right]$$

Case 2)

$$\frac{F_{El-Tot}}{A \cdot H} = \bar{\sigma} \varepsilon = \frac{\bar{\sigma}^2}{E} \left[\frac{\text{kJ}}{\text{m}^3} \right]$$

whereas the gravitational Force $Ma(r) = dmc^2$ is opposed by a contact Force in kN:

$\sigma = \rho a(r) \left[\frac{\text{kJ}}{\text{m}^3} \right]$

$\bar{\sigma} = \left[\frac{\text{kN}}{\text{m}^2} \right]$

$F_C = \bar{\sigma} \cdot A' \left[\text{kN} \right]$

Note: the association of these two formulations constitutes another astonishing example of the admirable way in which the Universal Reality of thing interconnects physical phenomena.

Part 2) etc.. to follow

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