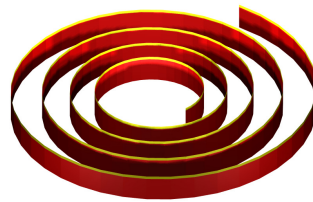


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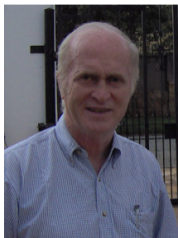
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EX SPIRA AQUA MUNDA

In memory of my son Giovanni

24 January 2015



(Prolegomena to The physic behaviour of substance contained inside spatial dimensions)

Force in kJ substitutes the present perception that Force must be represented in Newton (part 2)

Dimensional presence is “Space” and it is a geometric concept, is an idea, since there is no other dimension but the volume of “Space”, as geometrical invariable concept, represented by three spatial directions (x,y,z).

Physical presence of substance defines the space occupied by it since we cannot represent a physical phenomenon unless we define the extent of presence of substance (as mass in [Ton] or as its equivalent in terms of expanded substance in [kJ]) contained inside a volume V of three dimensional Space (coexisting, under due assumptions, with the Ether/ESF which interacts both with the mass and with the expanded substance developed in it and coming out of it).

Ex 1: as mass $M=\rho V$

Ex 2: as gravitational mass dm_g which due to presence of the gravitational depression and flow of the Ether/ESF caused by a mass M_{LGM} (absorbing it) exists in a Potential status of expansion inside a volume V occupied by a gravitational mass M impeded to move, said dm_g after having lost its initial gravitational character is becoming a dm_i (equivalent to dm_g but only inertial) and being subjected to expansion has the Potential to expand presence of the mass M in Space through movement along the gravitational depression and flow of Ether/ESF generated by the central M_{LGM} :

$$F_s = \underline{dm}_i c^2 = Ma(r) \text{ [kJ]}$$

Whereas,

$$\underline{dm}_i c^2 = M \frac{d \left(c^2 - \frac{kM_{LGM}}{4\pi r} \right)}{dr} = M \frac{kM_{LGM}}{4\pi r^2} = M a(r)$$

See Google [/Essays-Mechanics / Electrodynamics/Download/5805](#)
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Note: the above example is intended for an internal condition inside a mass M having a “Potential” character and affecting M, in which no further physical transformation-degradation is supposed to occur, (constantly in time without further effects than being subjected to absorption by the Ether/ESF, which has the effect to produce in M the Static Force F_s) since if movement occurs the \underline{dm}_i becomes a $\underline{dm}_i(t) > \underline{dm}_i$ due to increasing transformation-degradation in time of gravitational mass $\underline{dm}_g(t)$ belonging to M into an equal amount of inertial mass $\underline{dm}_i(t)$

as substance in expansion which in that condition being subjected to absorption by the Ether/ESF in the direction of depression and flow of the gravitational field is causing movement of increasing nature in time of the mass M to which it belongs.

Note: expansion of increasing amounts of $\underline{dm}_i(t)$ in time means that the mass M is forced to occupy an increasing volume $V(t)$ along its direction of movement, starting from the initial volume V occupied at the initial instant $t=0$, therefore at the value of transformation-degradation of $dm_g(t)$ at the time $\Delta t=t-0$ into an equivalent $dm_i(t)c^2$ of substance in expansion the mass containing it due to absorption of it by the Ether/ESF would be forced to occupy a volume $V(t)$.

This now should already be enough to explain why from an initial value of Potential of transformation-degradation of mass dm_g in [Ton] into an equivalent value of substance $\underline{dm}_i c^2$ in [kJ] to which when movement is impeded corresponds a Force F_s in [kJ] to nourish transformation-degradation in time of the $dm_g(t)$ into $dm_i(t)$ [Ton] belonging to M capable to expand into a $\underline{dm}_i(t)c^2$ [kJ] will be necessary presence of a Force since the $dm_i(t)c^2$ which is absorbed by the Ether/ESF corresponds to a value of a large Force, $F(t)$ or F_{Tot} moving the mass M at the instant t :

$$F_{Tot} = \underline{dm}_i(t)c^2 = F_s \frac{V(t)}{V} = Ma(r) \frac{V(t)}{V} = \rho a(r) V(t)$$

Which since $V(t)$ is the sum of volumes occupied at the instant t in virtue of the values of transformation-degradation at the time t (caused by the transformation-degradation increasing of a value $a/2 = \frac{1}{2} dv/dt$, every unit of time, the ablation of M along the direction of depression and flow of the Ether/ESF absorbed by the M_{LGM} , (which defines the gravitational field) is taking place at velocity:

$$v(t) = a/2 + a(t-1)$$

of the mass M subjected to the $F(t)$ (a total of absorption of the whole transformation-degradation inside M) at the instant t since movement started.

To this phenomenon corresponds an increase of Force (Dominant Force or "Power") each unit of time:

$$Ma(r) \frac{V \cdot v(t)}{V} = \rho \cdot a(r) \cdot V (0.5a + a \cdot (t-1))$$

We then see that to increasing velocity corresponds an increase $Vv(t)$ of volume run by the mass M in the unit of time, an increase due to an elasticity phenomenon generated by the Ether/ESF opposing expansion, also involving the inertial opposition to increase of velocity of the mass M moving against the Ether/ESF over the unit of time, in other words the mass M under the absorption of the F_s in it, in presence inside the gravitational field of depression and flow of the Ether/ESF is opposed to increase of velocity both by the elastic presence of the Ether/ESF and by its own inertial opposition to increase of velocity and this takes place at $v(t) \ll c$ in which we have a sum of the ablation $a/2$ due to this effect and of the ablation caused by the existing velocity $a(t-1)$:

$$Ma(r) \frac{V(t)}{V} = \sum_0^t F_s v(t) = F_s \sum_0^t v(t) = Ma(r) \sum_0^t [0.5a + a(t-1)]$$

For which $V(t)/V$ is dimensionless and is a multiplier of the initial F_s in [kJ]:

$$\frac{V(t)}{V} = \frac{at^2}{2} \quad [-]$$

Which F_s starting from physical presence in M as [kJ] becomes $F(t)_{Tot}$ after a time interval Δt (also physical presence in M in [kJ]).

The value of a transformation-degradation after a time t tells us that $F(t)_{Tot}$ is still a Force (at present called Kinetic Energy) since $V(t)$ still is a value of a volume the term $at^2/2$ can only be a pure dimensionless multiplier of the initial Potential Force in units of Energy [kJ], since $a(r)/2$ [kJ/m³] has the same value of the elastic extensor of transformation-degradation in space over the unit of time $\frac{1}{2} dv/dt = a/2$ and the velocity at t (time) is $v(t) = at$ where the time is a multiplier of transformation-degradation.

Then during the gravitational fall of M it will be :

$$F(t)_{Tot} = \rho a(r) V \frac{at^2}{2} = \frac{1}{2} Mv(t)^2 \quad [kJ]$$

In conclusion from a Force in [kJ] in Static conditions we went to a Force, absorption by the Ether/ESF of internal transformation-degradation in M inside a gravitational field (generated by a mass M_{LGM}) causing velocity $v(t)$ of M at the time t , which rightly is interpreted as kinetic Energy of M being the product of internal transformation-degradation of gravitational nature but must as well be interpreted as a

Force since M under the effect of the said transformation-degradation is absorbed by the Ether/ESF Forcing movement at $v(t)$ in it.

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