

## Characteristics of the Ether/ESF

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Included in this short document are some of the characteristics that the Ether/ESF appears to have. Their discovery was necessary in order to develop a theory intended to prove its existence. Those that do not appear evident to our senses can be found through the exercise of our intellectual faculties.

- I have redefined the Ether calling it Energized Space Fabric (ESF). When small masses having weak gravitational fields move through it, the Ether/ESF, does not show apparent physical signs of existence. To us, it appears that space is empty.
- The Ether is a pristine substance at the base of universal reality occupying an infinite Euclidean space. It is motionless and exists outside the phenomenon of time. Since it is conservative and indestructible, it is also immobile. It can be defined as that which exists in a state of temporal invariability when empty.
- The Ether in the theory that I developed is made of indefinable particles having a potential capacity to undergo transformations-degradations along a natural open cycle determining the reality of the natural world through a causal concatenation of events.
- The presence of the natural world is exclusively due to phenomena originated by the Ether which as a basic substance, is endowed with the property of transforming itself into different states of existence (mass in different states of existence). It interacts with these states on a continuous basis and with a causal sequence bound through transformation-degradation, that is not of an instantaneous nature, and whose physical character determines the emergence of time.
- Velocity of a mass inside the ESF is due to an active component of that mass, called inertia. It has a special characteristic called spin, whose presence interacts with the ESF. The spin of a particle of mass in the state of inertia (belonging to an object mass) generates its own motion in the ESF, dragging the object mass as well. The ESF increasingly reacts to advancement of mass with an opposing increase in resistance. The velocity of a mass in the ESF (which is a process or interaction facilitated by the ESF) can be equated to an object inside a gas or fluid moving at a very high speed. Since the ESF is a non-inertial and non-gravitational substance, it only opposes movement only.

when high speeds are reached (there is no measurable ether drag at relatively low speeds). We can say in other words that while a mass is propelled by a dominant force, it is subjected to an increase in velocity since the force gives it the inertial mass-energy endowment of Spin. The Dominant Force is opposed by the inertial reaction of the mass (Newton) but while speeds are increasing, to the inertial reaction of the mass is added the increasing reaction of the fabric character of the ESF. We can then say that when the Dominant Force ceases to act, if the velocity is high enough, the mass is subject to a drag, forcing it to slow and expel inertial mass as heat.

- When masses are moving and they reach a high enough speed relative to a fixed point, phenomena occur betraying the presence of something that opposes their increase in speed in a given direction. The result of experiments show that an increase of inertial mass is induced into the object mass (through the action of the Dominant Force). This produces an increase that exceeds the expected inertial opposition or resistance to acceleration of the object mass. It is as if the object mass were impeded by the presence of a substance that progressively increases opposition. It has the effect that the object mass cannot achieve the velocity  $c$ .
- What betrays the existence of the ESF is the fact that when high enough velocities are reached and the insertion of inertial mass is stopped, the object mass tends to maintain a constant velocity. But if the object naturally expels heat, it also reduces its speed and this is a sure sign of interference with something existing around it. In this case, heat is the result of a transformation-degradation, expelling the inertial mass which the object contained internally. As it dissipates in all directions, it cannot impart a negative acceleration to the object under examination.
- The negative acceleration or deceleration is the result of an adjustment to the interrelation and change of mass-energy equilibrium between the inertial mass left in the object mass and the ESF. The object mass finds its condition of existence at a lower constant velocity. After consideration, we realize that we are subjected to an analogous phenomenon when we press the brake peddle (expelling Heat) in our car. But in this case, the contact with the road takes the place of the ESF.
- Gravitational mass absorbs the ESF through a fixed universal constant process ruled by time and transforms-degrades the ESF into increments of gravitational mass that add to it. (In this way, Newton's law becomes a law of fluid dynamics).
- Gravitational absorption by a large gravitational mass generates a field of depression and flow of the ESF, that constitutes the gravitational field. These two conditions of the ESF are extremely reactive to the presence of the mass.

We perceive the mass as a solid (tangible) substance that inside the gravitational field of a larger one can be subject to motion that by necessity is accelerated and caused by transformation-degradation of one of the internal components (neutrons) into inertial mass.

- Since the ESF is the pristine basic substance, subjected to transformation-degradation, it is difficult to find means to discover its many properties
- At the beginning of the open cycle of transformations-degradations the ESF is absorbed by the mass but at the end, the mass expels speeding particles compressed as heat. When heat comes in contact with the ESF, it is subjected to depression  $c$  and flows at  $c$ , absorbed by the ESF. This determines the presence of what is called dissipation. This is the phenomenon of transfer of mass which is in a non-gravitational and non-inertial state, and similar in this respect to the ESF.
- If we define the states of the mass we have more than one choice but here I prefer to talk about gravitational mass, inertial mass and dissipation. While the ESF is a pristine state of mass that exist on its own outside the time phenomenon, it is considered part of the natural world only when subjected to disturbances caused by gravity, by dissipation of particles moving at  $c$  inside it and other phenomena, mainly related to mass reaching velocities close to that of light.
- The flow of the ESF induced by gravitational phenomenon consists of the absorption of ESF by a Large Gravitational Mass (LGM). It is responsible for the emergence of the Static Force as a transformation-degradation acting on an object mass resting above the surface of an LGM. The Static Force is a necessary presence if the movement of a gravitational mass must take place. Nevertheless, immediately as movement starts, the ESF substitutes its reactive capacity that produced the Static Force with the capacity to produce accelerated movement. This depends on the movement inside the depression field and not from the flow character of the gravitational field.
- When an object is traversing an orbital path, it is subject to two main Forces, the first is made up of gravity and is a composite force, made up of the Static force (acceleration of gravity only) amplified the value  $v_0$  of the orbital velocity whose existence is justified by transformation-degradation and the inertial reaction of the mass to variation of the direction of velocity combined with the capacity of the ESF to produce opposition to orbital movement ( which is also a composite Force but being as well an opposition Force is not associated to transformation-degradation ).
- Both Forces are mass forces. In an orbit inside an artificial satellite, we have the illusion that no force acts on us, whereas the gravitational pull and the opposite force are  $v_0$  times greater than the one experienced on Earth. Nevertheless, since the transformations-degradations associated to these phenomena are extremely small in values and the

opposing Forces are mass Forces (and not like on Earth, contact force) we do not feel (at least at short-range time intervals) any effect.

- The Earth's rotation like the rotation of any celestial object entrains the ESF so that the amplification of static forces experienced in orbit is not present on Earth or in any celestial body subject to rotation velocity  $v_R$  around its axis.
- The SP particles are dual and entwined when they come out as dissipation (present speculation permits us to make this hypothesis) and this explains the presence of transformations-degradations internal to the mass. When no motion is evident, there is still transformationdegradation (like in the case of the static force,) the phenomenon produces separation of electric charges as made up of half SP particles possessed of half Spin.
- The property of the ESF fabric characteristic permits us to say that the surfaces of the atoms are made up of the fabric of the ESF, facilitated by the presence of the electrons which, having only half spins, are unable to penetrate the ESF. Nevertheless, once they come out of the neutronic mass through transformation-degradation, push their way against it and force it to react. This produces its fabric character in the form of a subtle shell impervious to penetration (the shell constituting the surface of the atoms is generated by the inability of the electron to penetrate the ESF).
- The characteristics and properties of the ESF are many and supposedly infinite. I identified only few of them, and have only begun to investigate the phenomena of electrostatics, electrodynamics, magnetism and electromagnetism. I realize that there is a field full of promise.
- The fact that ESF is the substance forming the atomic surface, is, to say the least, revolutionary. There are infinite properties tied to the laws ruling interrelations between atoms. From the formation of simple molecules they cluster together into composites of increasing complexity until they find a way to reproduce themselves through the code of life. The implication is, that since the surfaces of the atoms are made of ESF, in their interrelations with the internal architecture of the different atoms and the surrounding atomic mass, there is a potential to produce and develop the memory that orders the growth of life forms.
- In conclusion, we can say that the ESF is at the base of a natural analog computer whose hardware is a single cell, containing the program or code of life and the memories, as any individual versed in this kind of speculations can easily deduce by himself.
- While we struggle to build computing devices more powerful, nature brings us the humbling example of a perfect analog computing device.

It contains its own program and read-only memories. It is not only capable of self-reproduction, but while reproducing, use a memory device, switching the functions of the single cells into the building of organs. They have the potential to recreate another cell that can again restart the process and improve on it as time passes.

- A signal made up of dissipation of m-e, endowed of spin as heat coming out of a mass and interacting with the ESF, in traveling the infinite distances of space, is subjected to dispersion altering its character through extension of its wavelength towards the red and beyond. Once it is established that there is the presence of substance in Euclidean space, this substance by necessity must have the effect of dampening and absorbing light signals.
- A consequence of the above conclusion is that the gravitational depression must be subjected to dampening and eventual practical disappearance of its effects from the physical world. Although it is ruled by a mathematical formulation that can be extended to infinity (which is consistent with the principle of conservation,) at enormous but finite distances it would become impossible to detect.
- The ESF theory permits us to hypothesize that masses in the universe are self reproducing on a continuous basis and mass generated through absorption of ESF expels part of itself through dissipation. This is reabsorbed by the ESF at the end of the open cycle of transformation-degradation (as a sort of ash) and what is coming into existence as mass is balanced by the outflow as dissipation, so that the process can go on forever.
- Note: Nowhere here is said that the dissipation is upgraded to the status of ESF. In universal reality, the dissipation is distributed over the ESF on a continuous basis and with the characters described, without ever having sensible effect over the making of the ESF.  
Note: Dissipation can be measured, when is present in sensible amounts and when our instruments cannot anymore detect it, does represents the old concept of Entropy.
- One of the beneficial effects of the Milligan experiment was that two different fields of the Ether were present, (the gravitational and the electrostatic). The Laws ruling them were shown to follow the properties associated with the character of the fabric that we attributed to the ESF when presenting gravitational phenomena (they showed that there was analogy in the Laws ruling both fields). In the case of the electrostatic field, the behavior of the substance that we call ESF basically differed insofar as this field and the associated electrodynamic, magnetic and electromagnetic fields follow Laws permitting them to store m-e endowed of Spin. This is supplied to them in their immediate surroundings and in a way that differs from the way it happens in the fields associated to gravitational phenomena. They have the property of supplying their energy content to a mass, as inertial mass (in order to produce movement), or produce in mass, the

emergence of a static force. They can exchange mass-energy content with another field (always in respect of conservation).

Note: gravity produces two main field effects: one of absorption of ESF by the mass causing depression of ESF and flow, and one of absorption of heat by the ESF as dissipation, both affecting the distribution of substance in inverse relation to the radial distance from the mass. In gravitation the mass is absorbing ESF substance. In dissipation, ESF is the cause of dissipation (the ESF is the substance causing depression associated with the flow at  $c$  speed that transforms heat into dissipation). While dissipation occurs, the density of mass-energy in that status, that depends on the distance from the source is reduced in inverse proportion to the square of the distance.

- One of the proofs of the existence of the ESF (if the arguments presented above are unconvincing) is that since light is non gravitational nor inertial, it cannot be subjected to gravitational pull. Therefore the famous experiment and observations regarding the bending of a beam of light would be questioned. The reader need not be alarmed since the acceptance of the presence of ESF means that it does exist as a field of depression ( and flow) and both act on the beam of light with similar effect that have to be summed. When it passes through an increasing value of depression and flow of ESF, the dissipation phenomenon (constituted by light) enters sections having higher depression and flow of ESF and is subjected to subtly increasing deviations. While moving closer to the surface of large gravitational masses, a phenomenon is repeated inversely in mirror image when the dissipation moves beyond the closest approach to the surface of the LGM .
- In physics, we have three physical realities ( space, substance and transformation-degradation) reducible to the measurements of Length, Mass, Time. Through the observation that the presence of substance in different states of the existence of mass can be indirectly measured through its effects on instruments capable of measuring values (obtained through transformations-degradations ) of composite physical units containing the three basic ones, we are able to relate transformations of substance from one status of existence to another through the principle of conservation". The fact is that every physical transformation is associated with a degradation and to a change of status of a portion of the physical mass inside which the transformation, ruled by time, takes place, is also associated a physical relation established by the said transformation with the surrounding medium, the ESF".