

The New Galilean Age: The Local Ether Theory and the Inertial Galilean Model Depict a New Physical Paradigm

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The Galilean relativism of any inertial reference frame causes an unacceptable deprivation of the essence of Energy. To correct this, a natural Absolute Privileged Reference Frame (System) is supposed to permeate the universe but without being the solely authorized to host the isotropic propagation of light. A corrective coefficient (in the Galilean time transform equation) accounts to regulate the proper time dilatation of particles in absolute motion with respect it. This is enough to restore the absolute essence of Energy, it explains the proved retardation of moving clocks and also the mysterious cosmological phenomena regarding intrinsic quantized red shift in terms of linear progression of quantized absolute velocities. The MM and Sagnac experimental outcomes are interpreted by use of this Inertial Galilean model and by the introduction of an innovative Local Ether Theory that holds for any kind of emitted particles from photons to macromolecules.

1. Introduction

The photons are hereafter treated like any other massive particles and their propagation, as seen by different inertial systems, is ruled by an Adapted Galilean principle of the relative velocities vector addition. It is a generalization of the classic Galilean principle to make the anisotropic component of the emitted particle (the one that classically corresponds to the detected emitting system velocity) to disappear if the detector is placed at rest with a special instantaneous inertial system: The Local Ether (It is the center of mass of the surrounding masses to the particle emitted location).

2. Local Ether Modeling

Each infinitesimal mass contribution to the ether property of a certain universe location (where a particle is emitted) is appropriately weighted by the distance of the infinitesimal mass to the considered location. This practically causes "ether" to assume local properties in space. Because it is almost entirely dependent by the nearest cosmic mass aggregation. And the proposed quantification of every infinitesimal mass contribution works in this way:

If $m(i)$ is the mass of the i^{th} universe body as seen by a certain inertial detecting frame S' , then if the local ether property is to be calculated at the point \mathbf{r} (where the light beam is emitted by a mass floating there, note also the used bold notation being \mathbf{r} a vector) the following weighed expression is evaluated in place of $m(i)$:

$$m_p(i) = m(i) \cdot e^{-H|\mathbf{r}-\mathbf{r}(i)|}, \quad (2.1)$$

where $|\mathbf{r}-\mathbf{r}(i)|$ is the distance from point \mathbf{r} (where light is emitted) and point $\mathbf{r}(i)$ (position of the i^{th} universe body) and H is a coefficient to be experimentally evaluated (see Conclusion).

Note that if such distance is null (the i^{th} mass coincident with light emission location) or almost null (the i^{th} mass in the immediate neighbors of light emission location) then $m_p(i)$ will practically coincide with original infinitesimal mass $m(i)$. Instead for long distances between light emission location and i^{th} mass, $m_p(i)$ will represent a negligible numeric quantity compared to the original infinitesimal mass $m(i)$.

The vector speed of the center of mass of the weighed n bodies masses ($n \rightarrow \infty$) of the universe (weighed as above with the distance from light emission location) is seen by S' to be (note $n=0$ is the contribution of emitting atom):

$$\mathbf{v}_p = \frac{\sum_{i=0}^n m_p(i) \cdot \mathbf{v}(i)}{\sum_{i=0}^n m_p(i)}, \quad (2.2)$$

where $\mathbf{v}(i)$ is the speed of the i^{th} body mass as seen by the inertial detecting inertial frame S' .

By the use of the "Adapted Galilean principle of the relative velocities vector addition among different inertial frames", (that is taken as postulate at the basis of local ether theory), this weighed center of mass velocity sums up to, in a vector way, with the isotropic speed of light in the location of light emission so as to result in the actual light vector velocity as perceived by S' . So it defines the total vector Galilean contribution to the light velocity detected by S' if the beam is launched from the considered emission location. The vector isotropic value is the light velocity that would be seen by S' for a beam started by a mass at rest with S' at the same emission location but assuming that it were sufficiently separated by other masses not at rest with S' ; and this is due to (2.1) machinery. In conclusion, through use of our Adapted Galilean Principle, the actual light velocity perceived by S' is anisotropic and is given in the generic direction by:

$$\mathbf{v}_{\text{anistropic}} = \mathbf{c}' + \mathbf{v}_p, \tag{2.3}$$

where \mathbf{c}' is the mentioned isotropic light component and \mathbf{v}_p (2.2) is the weighed center of mass speed (weighed with respect location of light emission in order to emphasize the nearby masses to light emission location). If the detecting system S' is at rest with the Local Ether (i.e. determined by the center of mass of the surrounding masses to the particle emitted location) then $\mathbf{v}_p = 0$ and in this way S' sees any light beam propagate isotropically. However, an ambiguity arises in regards to the Adapted Galilean principle when applied in a classic Galilean context. It takes into account the physical work provided or released by the surrounding masses to build the anisotropic velocity component of an emitted particle, and that remains a questionable subject because it varies with the selected inertial detecting system choice. Thus we introduce the notion of the IG model that resolves this ambiguity.

3. Inertial Galilean (IG) Model

The IG model is based on the supposed existence of a natural inertial Privileged System. It constitutes a concise local universe structure that is assembled without (known) boundaries. The density of such structure is negligible compared with the one attained by known matter. Anyway, its homogeneous (low) energy distribution defines the absolute rest status of this locale in the universe and characterizes the true cosmologic time in those space locations and not influenced by surrounding mass gravitational fields. Also its point of view becomes the solely authorized one to interpret the non relativistic value of a particle's Energy (nevertheless, it is the Compton or the Kinetic one). Clocks at rest with Privileged System, and not disturbed by gravitational fields, advance with the same uniform pace that is the natural objective pace of the Privileged System. The Privileged System (System S) is concocted from the IG model equations of a generic system S' that moves with respect S along x direction, where the System S and S' respective Cartesian axes are assumed parallel):

$$\begin{aligned} z' &= z \\ y' &= y && \text{Galilean equations} \\ x' &= x - vt \\ t' &= e^{-kv/c} t && \text{Inertial equation} \end{aligned} \tag{3.1}$$

where:

v is velocity module of inertial system $S'(x',t')$ as seen by inertial system $S(x,t)$ that is Privileged. There is no limit to the magnitude of the v value.

c is the $S(x,t)$ isotropic light velocity value. The Isotropic light velocity can be detected by system $S(x,t)$ provided the photons are emitted by a mass at rest with S itself and sufficiently far away by other masses in motion with respect S . (See previous paragraph).

Here, $k=3.3648219$ (1% tolerance error) is the value that fits the experimentally proved life elongation of muons circulating at $0.9994c$ into CERN accelerator ring in 1977 performed experiment (it was exactly 28.87 times the value owned when they were at rest with the laboratory). This tolerance error is due to an un-

known The privileged System velocity value being the one seen by the terrestrial laboratory instantaneous inertial system. It is assumed to lie in between 0 and 500 km/s.

Due to (3.1) applied between S and S' and due to another time between S and S'' , it is possible to get the same ratio between:

$$c' = c'' e^{-k(v''-v')/c} \tag{3.2}$$

and

$$v_1 = v_2 e^{-k(v''-v')/c}. \tag{3.3}$$

c' (c'') is the S' (S'') isotropic light velocity that can be detected respectively by system S' (S'') provided the photons are emitted by a mass at rest with S' (S'') when S' (S'') is sufficiently far away from the other masses in motion with respect it.

v' (v'') is the absolute velocity module of inertial system S' (S'') as seen by Privileged inertial System S .

v_1 (v_2) is the velocity of S'' (S') as seen by S' (S''). A (3.2) and (3.3) equal ratio yields the Sagnac experiment solution obtained by the inertial system S' (at rest with rotating platform center) being in perfect agreement with the one obtained by the use of an infinite series of different inertial systems S'' placed each one instantaneously at rest with the next adjacent border location when one of the opposite beams reaches that particular location. From the S' point of view:

$$\Delta T' = 4\pi R \cdot \frac{v_1}{c^2 - v_1^2} \tag{3.4}$$

This $\Delta T'$ being the opposite beams time arrival delay as seen by system S' at rest with platform center. R is the platform radius and v_1 the velocity module of the platform border as seen by S' . However, we obtain instead utilizing the infinite series of S'' point of view:

$$\Delta T'' = 4\pi R \cdot \frac{v_{2\text{-mean}}}{c_{\text{mean}}''^2 - v_{2\text{-mean}}^2} \tag{3.5}$$

$v_{2\text{-mean}}$ is the medium velocity module of the platform center and c_{mean}'' is the medium isotropic light velocity both as seen by the infinite S'' inertial systems placed on the platform border. Both mean values are evaluated by using in turn the medium S'' absolute (observed by Privileged System) velocity module (v_{mean}'') of the platform border [1]. As anticipated this leads to:

$$\Delta T' = \Delta T'' e^{k(v_{\text{mean}}'' - v')/c} \tag{3.6}$$

(3.6) is the expected result because its exponential term complies with IG model inertial equation that links S' and S'' unprivileged systems proper times as function of the different instantaneous S' and S'' absolute velocity values that are seen by Privileged System S . Here v'' (the generic S'' absolute velocity module) is not constant along the rotating platform border so it is replaced by v_{mean}'' because this represents the mean absolute velocity value of mentioned infinite series of S'' displaced instantaneously but being at rest with the platform border points (when the opposite beams reach them).

In 1925 Michelson and Gale performed the Sagnac experiment using the terrestrial rotation itself to cause the delay between the opposite beams. This was achieved through implementation of a sufficiently extended rectangular apparatus equipped with mir-

rors placed at its corners at several hundred meter separations. The experiment resulted in a fringe shift fully confirming the $\Delta t''$ value exactly expected at the latitude where it was performed. Following the actual Galilean paradigm, this suggests that the platform instantaneously rotates around the axis of an inertial system at rest with our planet center of mass that exhibits light isotropy. Hence our planet center of mass is our Local Ether system. This deduction explains Michelson and Gale brilliant positive outcome but also explains why any Michelson Morley experiment has given null results so far. In fact the terrestrial lab drift relative to the local ether at rest with our planet center of mass is not higher than 0.46km/s at equator in the worst case. This would require a detectable delay between orthogonal beams of less than 10^{19} s, just two magnitude orders beyond actual MM interferometer detection capability.

Note that the (3.1) exponential law that connects Privileged System time with a moving object proper time has been selected due to its suitable monotonic rate necessary to withstand with the Galilean concept that there is no limit to absolute velocity, any increment of absolute velocity must contribute in further freezing the moving time no matter what its current module value already is, and there is no reason to foresee some "privileged" absolute velocity milestone (like light velocity or others) that imposes an increase in time dilation rate when an object absolute velocity approximates to it. This last unacceptable case would introduce a warping disrupting the monotonic trend of time dilation as a function of absolute velocity. Certainly, when further experiments, able to (directly and closely) monitor the relation between a generic particle velocity and its proper time dilation, are performed, then other interpolation points will be available. This could eventually invalidate actual use of the simple exponential law and a new relation will replace it; perhaps even a mathematically function not able to be expressed in closed form. The author expects that, whatever the eventual new relation needed to fit all the future experimental data, the mentioned monotonic behavior will be maintained. This corresponds to the belief that New Galilean paradigm is the right one to rule the laws of macroscopic Physics; and in this, case the monotonic behavior (from zero velocity to infinite velocity) is a necessity as above exposed. Moreover only a monotonic time dilation - absolute velocity relation is able to imply the perfectly correct interpretation of the cosmological objects' intrinsic red shift and exponentially sequenced quantization in terms of a linear progression of quantized absolute velocities possessed by the same objects.

4. Cosmological Intrinsic Red Shift and Its Interpretation through IG Paradigm

H. Arp book "Seeing Red" [2] lists a wide number of documented evidences of high speed matter expulsion processes from "mother galaxies". Many times the relatively young matter that is expelled by them concentrates into Quasars couples at opposite side of each originating galaxy and still runs far away from it at considerable speed really comparable with the light one. The mysterious Quasars spectrum red shift (with respect the spectrum observed utilizing the same terrestrial elements' analysis) still constitutes a debated topic. The present author interprets the

intrinsic red shift ($z = \Delta\lambda/\lambda$) in terms of Quasars absolute velocities as seen by Privileged System. By use of IG equations and by assimilation of terrestrial observer with Privileged System (this is already included into k parameter 1% tolerance error) we obtain:

$$\frac{v}{c} = \frac{1}{k} \ln(z+1). \tag{4.1}$$

The general success of (4.1) in turning the exponential increase of z quantized values of Quasar red shifts into corresponding linear evolution of v/c steps, (this is showed in Fig. 1) seems to point to a cosmological situation of Quasars groups each one marked with a specific v/c quantized value.

The simplest way to understand this situation is to think that, at some specific Privileged System's cosmological time intervals, an almost simultaneous young matter high speed expulsion (its speed comparable or even higher than actual known light one) from a single or various progeny galaxies happens. When this matter condenses, it originates Quasar couples that are running in opposite directions with high speed not far from the expulsion value. This speed, according to inverted (4.1) law, corresponds to the higher quantized red shift. This is due to quantum interactions (between moving matter and the low energy density skeleton of the Privileged System) ruling the galactic bodies (here Quasars) proper time dilatation variation as active function of their velocity module variation (as seen by Privileged System).

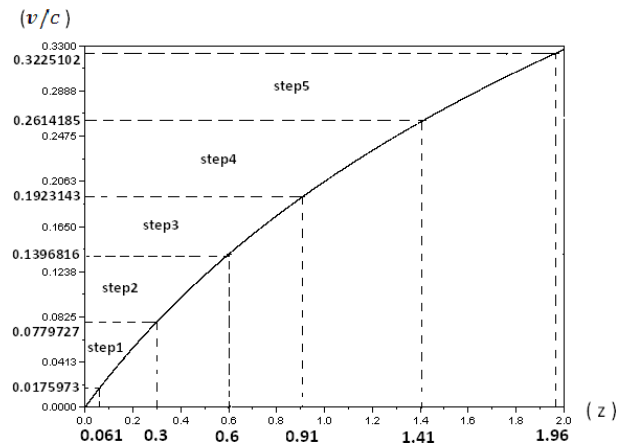


Fig. 1. Quantized v/c values

The same interactions are responsible in turn of the Quasar progressive velocity module decreasing with cosmological time. If by hypothesis this trend is linear with time (due to presence of a constant contrasting acceleration "a" in turn caused by the same quantum interactions between running matter and the Privileged System) as well as those matter expulsions happen at equal time intervals, it can be explained the presence of such v/c quantized and constant steps figured out in Fig. 1. These quantized v/c values will drift versus zero with cosmological time keeping the same quantized Step separation.

5. Privileged System Low Density Energetic Skeleton Quantum Interacts with Running Matter

Let briefly go through the chain frequency/energy/mass to show the mass dependence upon its velocity value as seen by

Privileged System. The Compton frequency γ of a general rest particle (with respect Privileged System) is linked to the particle intrinsic energy content (it will be called the particle Compton rest energy) by the quantum mechanics relation:

$$E = h\gamma, \quad (5.1)$$

where h is the Planck constant. Let now introduce $E = mc^2$ relation firstly discovered by Maxwell in second half of the 19th century by use of his homonymous electromagnetic equations [3]. He calculated the wave pressure exercised on an absorbing body and the momentum transferred from the wave to the body. Afterward he turned into equivalent mass at c speed the gained momentum retrieving in this way the famous equality.

The relation between a general particle rest mass (with respect to the Privileged System) and its rest (or intrinsic) Compton frequency is given by:

$$m = \frac{h\gamma}{c^2} \quad (5.2)$$

c is the light isotropic value that holds for the Privileged System that is also assumed to practically coincide with terrestrial lab measured velocity due to the +1% error accounted for coefficient $k=3.3648219$ into the IG model inertial equation that includes the supposed very limited speed of terrestrial lab as seen by the Privileged System. This supposition also causes c value to be well approximated by the terrestrial measured two-way light speed.

The mass of a particle travelling at v (as seen by the Privileged System) turns out to be (due to the IG model inertial equation that reduces the observed γ frequency by the Privileged System's, when the particle is not at rest with it, to account for quantum interactions that slow the observed particle frequency as the greater its absolute velocity becomes):

$$m(v) = e^{-kv/c} \frac{h\gamma}{c^2} = e^{-kv/c} m \quad (5.3)$$

It is interesting to calculate the physical work executed on a particle (initially at rest with Privileged System that also coincides with the detecting inertial system to make things as simple as possible) by an external force that acts on it and is opposed only by the famous corresponding acceleration " a ", most likely being very small because it acts on Quasar absolute velocity over cosmological times.

First of all, write the net acceleration of the particle subjected to the external and to the contrasting constant acceleration " a ":

$$F - F(v) = \frac{dv}{dt} \cdot m(v) \quad (5.4)$$

F is the external force, $F(v)$ is the corresponding force, $m(v)$ the particle mass and dv/dt is the net acceleration.

The mentioned work executed by F is using (5.4):

$$\mathcal{L} = \int_0^l F ds = \int_0^l F(v) ds + \int_0^l m(v) \frac{dv}{dt} ds \quad (5.5)$$

Where 0 is the place where the external force starts to act and l is the final application place. Now, $ds/dt = v$ and using (5.3) and $F(v) = am(v)$ then:

$$\mathcal{L} = \int_0^l F ds = \int_0^{t1} am e^{-kv/c} v dt + \int_0^{v1} m e^{-kv/c} v dv \quad (5.6)$$

The integral in dt must be calculated through numerical approach by summing up at each $t + dt$ the expression contained in it (every time updated with the right new value of v). In the same way, the v value in function of dt steps must be found by numerical integration of (5.4). Anyway, if t_1 is very small this integral can be ignored due to the assumed very small " a " value. The integral in dv can be, on the other hand, calculated through integration by parts. For instance a photon is chosen (because in Galilean paradigm photons behave exactly like generic particles), being its rest Compton energy given by (5.1) where the appropriate γ is the photon Compton frequency that is observed by the Privileged System when the photon is at rest with it (this happens when photon is still in atomic orbital motion upon his creation and also the emitting atom is assumed at rest with the Privileged System). Under these conditions the rightmost integral evaluation between 0 and c leads to:

$$\mathcal{L} = 0.075 h\gamma = 0.075 mc^2 \quad (5.7)$$

This equation (5.7) exhibits the correct work as a function of the photon rest Compton frequency / mass because they diminish with the photon speed increase (as seen by the Privileged System). The final mass value is calculated from (5.3) with $v = c$:

$$m(c) = m e^{-k} = m \cdot 0.0345682 \quad (5.8)$$

An enormous part of the particle rest Compton Energy (5.1) disappears when the photon (or generic particle) velocity reaches the c value due to quantum interaction with Privileged System framework. Every Δv increase corresponds to a ΔE being released to the Privileged System framework. This is the amount of interaction energy released by a particle that is pushed from $v = 0$ to $v = c$:

$$E_{\text{int}} = 0.96543 h\gamma \quad (5.9)$$

The particle is also subjected (even in absence of any external force acted by surrounding bodies) to the mentioned corresponding acceleration " a " that acts on it (at the Privileged System's cosmological time scale) linearly reducing its absolute velocity. The related corresponding force $F(v)$ varies (increases) as the travelling mass (5.3). During each particle's velocity (as seen by the Privileged System) when it is decreasing, the increase of the available travelling Compton energy is linked to a decrease of the E_{int} interaction released energy (this means the Privileged System returns such energy to the particle). Their sum is constant and equals to the rest Compton energy as by (5.1). In the end, the whole E_{int} disappears because the particle has gained again its rest status with Privileged System and with it all the interaction energy E_{int} (previously released to the Privileged System) has been returned as rest Compton Energy by non kinematic interactions with the Privileged System that regulate the internal frequencies of travelling matter. The important fact is that the total work done by the particle against the contrast force, until the particle is halted, corresponds again to the entire amount \mathcal{L} (5.7) involved in launching the particle at c . This time the kinetic en-

ergy \mathcal{L} is released by the particle to the inner framework of the Privileged System through the kinematic process regulated by constant contrast acceleration " a ". In the end, the quantum interactions of the particle with Privileged System are responsible of two opposite energy fluxes (processes) being intimately connected.

The non kinematic one is an energy reintegration to the particle from the Privileged System. It is E_{int} , expressed by (5.9).

The kinematic one is a (kinetic) energy releasing from the particle to the Privileged System is \mathcal{L} , expressed by (5.7).

Note the enormous disparity in the current example: first, in regard to the kinematic expense (its kinetic energy) the particle recovers the very much bigger (12.8 times) Compton energy that is missing. Both mentioned interaction processes happen because the Privileged System owns the previously mentioned homogeneously distributed very low energy density that can be exchanged with traveling mass through the said kinematic and non-kinematic processes

6. Conclusion

The Galilean transformations are able to withstand also the new cosmological frontiers and interpret the phenomena of high speed systems through the already mentioned appropriate change in their time equations.

The portion of universe observable by our radio frequency telescopes seems not in expansion, the Galilean relativism of all possible inertial systems (instantaneously floating in it) is no more an abstract concept but its essence is based on the existence of a common true reference: The Privileged System, whose essence (ultra low density energetic structure) is still a mystery. All universal clocks frequencies are consequence of their speed with respect this frame that has the honor to dictate the Absolute Time of the universe (with its rest reference clock selected to be sufficiently far from nearest masses in order to cancel any gravitational disturbance on its absolute pace). Absolute Time is distributed to all other inertial systems, freely running as seen by the Privileged System, that are affected by a ruled (according to the IG model inertial equation) fixing of their times as seen by Privileged System, whose privileged point of view becomes the solely authorized interpreter of the non relativistic value of Energy.

This is the last relevant concept that is highlighted by this current paper. Energy cannot be a ghost that appears or disappears as a function of the observer speed. An observer at rest with a travelling particle cannot measure the real particle travelling Compton energy (or related frequency) that is a function of the particle speed with respect Privileged System by our new Galilean Theory. This is due to the fact that observer frequencies are altered by its speed with respect Privileged System in the same way as it is altered the particle Compton frequency. Instead the Privileged System rest observer, if far by any gravitational influence, measures the true particle rest Compton Energy (when the particle is still at rest with him) and also notices the diminished particle travelling Compton Energy when the particle moves with a certain speed. The missed Compton Energy is transferred to Privileged System ultra fine structure that is built by a homogeneous low energy density framework.

For the same reason the Privileged System rest detecting frame is the solely authorized to evaluate the anisotropic work (spent or gained by the surrounding masses to a generic particle emitting system) in building the anisotropic velocity component of the same emitted generic particle. Other inertial detecting frames see a different work because they do not perceive the right absolute velocities of the emitting system and its surrounding masses; hence their work computation is conditioned by their proper absolute speed. The same comment applies to emitted system isotropic work computation because emitted particle isotropic velocity depends by the isotropic constant that holds in the detecting system. For photon case it is related to the one that holds as seen by the Privileged System by (3.2) where c' collapses to c (the Privileged System's isotropic light velocity):

$$c' = c e^{k(v)/c} \quad (6.1)$$

Unprivileged inertial systems see an isotropic component $c' > c$ hence they calculate a bigger work spent by the emitting atom to build the isotropic photon component. The same comment holds for generic particles emission. The only difference is that their isotropic component is not constant. It depends on the work spent by the emitting system (to launch a macro-molecule, for instance) but (6.1) still holds to connect the isotropic components seen by S and by S' .

Also if the IG model is discarded and classic G model is used in place of it (that is, $k=0$ is substituted into the inertial equation), the Adapted Galilean Principle seems to be still applicable. Unfortunately an unfortunate ambiguity appears when the effective anisotropic work is considered. It depends on the selected detecting inertial frame as before. Now the near equality of the pure classic Galilean inertial frames leave the considered question concerning which is the right energy spent or gained by emitting system and by surrounding masses in constructing the emitted particle velocity components. Only the Privileged System postulation (with the corresponding new Inertial Galilean model introduction) can restore the objective value of the energy transferred to or from the emitted particle.

The invariance of electromagnetism is Galilean-wise locally embedded in all inertial systems even if (6.1) already introduces a slight difference for isotropic light constant seen by the Privileged System S or by the generic S' . A part from this slight quantitative difference, this invariance holds provided that light is emitted by masses at rest with the considered inertial systems and their detectors and that there is no disturbance provided by other masses floating in the nearby space. In the latter case an anisotropic light component disrupts mentioned electromagnetic invariance.

In our New Galilean paradigm, the acceleration, just as the mass and the frequency, is not unchanged in moving to a different inertial system. For instance using (3.1), if S sees a particle accelerated at " a " then S' sees it accelerated at " $ae^{2kv/c}$ ".

In our new Galilean paradigm, there is no limit to the velocity of a particle. The Privileged System's isotropic light velocity is only a normalization factor into Galilean inertial equation exponential factor.

A nice unification of qualitative treatment of all the emitted particles holds. (That applies exactly in the same way from pho-

tons to macro-molecules and even heavier particles). The H value, inside (2.1), is in turn a function of the emitted particle mass in order that the emitted particle should be lighter, the extended framework is the surrounding masses' contribution to construct its anisotropic vector speed component seen by the Detecting System. This connects with quantum mechanics because wave function of light particles is much more extended than the one belonging to heavier particles. By the way, a very strong theoretical unification is portended by the New Galilean paradigm through the Adapted Galilean Principle.

The H coefficient advances in the same universal model the needed quantification. This is another impressive characteristic of the New Galilean paradigm here proposed. For the case of massive sub atomic particles emission ($H \gg 0$) the exponential term always tends to zero unless $|\mathbf{r} - \mathbf{r}(i)| = 0$ that is the only emitting atom contribution is retained. But this means, in order to

collapse into the usual Galilean Principle of the relative velocities' vector addition belonging to Classic Physics. So the usual principle becomes the limit to which tends (this holds more nearly in the case of the heavier particles that emitted) the more general Adapted Galilean Principle of the relative velocities vector addition that seems to constitute the intimate principle ruling the natural laws in function of the emitted particle mass [4].

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