Journal of Physical Mathematics
ISSN: 2090-0902

Pappas et al., J Phys Math 2017, 8:1
DOI: 10.4172/2090-0902.1000213

Research Article Open Access

Important Discovery of Preferred Velocity of 30000 ∓ 425 M/S of the Solar Motion of the Earth, Part 1

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Abstract

This is an experimental paper, resembling the Sagnac Effect (SE), but using electrical signals in closed conductive wire loops with an area. The results are completely different than the SE, depending on the time of the day and the epoch. We curried several experiments, and we measured and studied velocities of square pulse signals, propagated along a one-dimensional wire. In particular, we determined, the existence of very important of a preferred velocity of the order of 30000 ∓ 425 m/s. Our experiment concerned a type of SE, M-M and Michelson-Gale1 Experiment (M-G Exp.), all together abbreviated to SE-M-M-G. However, the present experiment is using inexpensive electrical signals of square pulses with a cable installation. It is of a higher range of measurements than the SE-M-M-G Exp. In the literature, these signals have been specified wrongly in the past. They were referred as group velocities or phase velocities or time reversed precursor signals, (never observed this unphysical time reversal in our Universe before). By the obvious purpose to make no contradiction or harm to the "Theory Special Relativity." The present discovery concerns the very roots of Special Relativity of EINSTEIN that own velocity of an observer can be observed (always absolute, due to an existing curvature, due an existing gravitation field which extends to infinite in the universe) to the point (SR) is threatened its viable existence.

We show that we detect the crest of a square pulse signal. A capable signal of diverting the beam of our oscilloscope, or turning on a lamp, or triggering a relay, as the trigger of the presently used oscilloscope, or in general telecontrolling information. Thus, carrying information slower or faster than the velocity of light. Therefore, it is violating the very core of Special Relativity of Einstein in many ways, and not for the first time50, but not to its very roots and to complete depth of extinction.

Keywords: Violation of special relativity; One-dimensional wires; privileged velocities; The utopia of inertial frames; Inversion special relativity; Sagnac effect; Superluminal and subluminal signal velocities; CERN; Observers own velocity observed by the same observers themselves

Introduction

With the recent relative advancement of Technology, particularly with the digital storage oscilloscopes, we analyze precursor signals. They became known in the literature, precursor signals. However they are usually attributed to a symmetrical Fourier analysis of square pulses with dual time components, one unnatural time prior the pulse event and second a natural time after the pulse event [1-4].

However, every arbitrary mathematical analysis may not be suitable for a particular physical case, as the complex solutions of an equation of a physical problem are usually rejected, as complex numbers solutions.

Also, a particular mathematical number may be analyzed as the limit of an infinite number of numerical sequences. This does not mean that every term of each such sequence, plays a real role in a physical situation.

The best, simplest and shortest analysis for a square pulse in our case, is the 1, 0 analysis: as existing with a truth value 1, or an non-existing with a truth value 0. Similarly, transmitting fast changing signals, radiate in physics [4]. These radiation signals make a shortcut road $<S_0$ (see below and particularly figure 3). The short cut road signal combines with the subluminous signal, causing an arrival of a signal by Δt time prior the time t0. The **subluminal** signal appears time t_0, after traveling a distance S_0 in a medium. Thus, we have **an apparent additional superluminal velocity signal too**:

$$v = \frac{S_0}{t} = \frac{S_0}{t_0 - \Delta t} > \frac{S_0}{t_0} \quad (1)$$

instead only the subluminal velocity:

$$v_0 = \frac{S_0}{t_0} \quad (2)$$

of the conducting signal. The problem arises, because the velocity (1) appears super luminous [5] >c.

Super-luminous velocities have been referred in the past in the literature by the, so called usually (pseudo)-evanescent precursor signals.

Sometimes characterized, as a group velocity, definitely wrongly, with the intention of presumably saving Special Relativity and in particular Einstein's causality [6]. Here, contrary to our previous publication this effect of super-luminous velocities is shown to be partly of an artifact appearance, of a first vertical crest of an electrostatic signal square pulse, on the screen of a fast digital oscilloscope, due to a short cut road of (radiation) coupling, a real effect [7]. This was verified by using a long extra wire as a receiving antenna at the receiving probe of the oscilloscope. In doing so, the assumed precursor signal was intensified strictly from a minimum standard intnsity, on the oscilloscope screen, depending on the length of the antenna and

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Received January 25, 2016; **Accepted** February 27, 2017; **Published** March 03, 2017

Citation: Pappas PT, Pappas TP, Pappas LP (2017) Important Discovery of Preferred Velocity of 30000 ∓ 425 M/S of the Solar Motion of the Earth, Part 1. J Phys Math 8: 213. doi: 10.4172/2090-0902.1000213

whether this antenna existed or not. In case the antenna was missing completely, the signal was limited to the referred above standard minimum 1, indicating the left signal was real, the one going around the full length of loop conductor via switch 1 when the switch was on, figure 3., thus the ratio loop length/elapsed time >c, that is, this exact very signal appeared undoubtfully superluminus.

Our oscilloscope was a factory upgraded and custom made of the older pride model of the American (USA) Tektronix, one of the world's leading companies in making oscilloscopes. An upgraded model of the super model TD S 3032, was bought from a USA commercial exhibition, where it was distinguished and proudly exhibited.

The standard model is having specifications of high resolution of 10 squares × 40 × 10^{-12} seconds =40 × 10^{-9} ms=40 × 10^{-6} μs=40 × 10^{-3} ns=40 × 10^{-0} ps=10 square40 ps=1 screen × 400 ps, which is 300 Mhz and Sample Rate of 2.5 GSa/s=2.5 MSa/ms=2.5 KSa/μs=2.5 Sa/ns=2.5 Sa/1000 ps=1 Sa/400 ps

These specifications are more than enough for our purpose. Note: resolution of 10-15 of a second=1 × fs=1 × fefto-second, is the world's highest time resolution.

Estimated Reliability and Accuracy of our Method, Conservative Verification

Our square pulses signal generator was capable of producing square pulses of 3.5 volts from a generator from a few mHz to a few MHz the repetition frequency. The rise time of the wall of a square pulse from bottom to the top needed 10 ns for all the repetition frequencies. This rise was enough for our needs, as we shall see below.

The oscilloscopic image of these pulses was not different among themselves for any chosen repetition frequency of the pulses, with the oscilloscope triggering on each generated pulse, either departing or arriving. However, the generator was set to a few pulses per second, not unnecessarily to stress the generator, as well as, not to stress the used oscilloscope.

The arriving of the vertical wall of the pulses after running around any of the loops was more inclined compared to the same departing pulse. Due to the fact, the arriving wall of the pulse had met more distributive capacitance and inductance on its way back via the loop.

We have to say, that theoretical square pulses cannot have absolute vertical walls. For the signal takes some time (10 ns as we stated at the beginning) for gradually building (charging) up or discharging down. In other words to express this fact, is: "**A signal or physical quantity cannot have unatural multi-vertical time values for the same instant t of time**." That is to suggest several different pairs (v,t) for a single point t of horizontal time scale axis. For V is a single-valued function of t, V=v(t), like every other function of nature". When, the oscilloscope is set faster than 10 ns per division, then the vertical walls of square pulses, appear indeed and correctly to be inclined on the screen of the oscilloscope.

Our method is physically and in principle unlimited. The limits of 40 ps of absolute resolution are defined connservately by our oscilloscope and may reach infinite accuracy. In our case, there was no need to set the oscilloscope faster than 100 ns, one order higher than the said above limit of 10 ns for the pulse to rise. Also, similarly, but far smaller effects can be seen than the Sagnac effect and SE-M-M-G Exp.7,1, which for our track of 250 m. long and 302 m^2 area, the SE-M-M-G Exp. do not distinguish a time variations for counter-clock-wise CCW and clock-wise CW directions [8]. With our loop of a perimeter l=250, area A=302 m^2, the Earth angular velocity Ω=24X602/s, and with sinφ=1 approximation, with have:

$\Delta t=4A\Omega\sin\varphi/c^2$ (3) =approx.$4A\Omega/c^2$={4 × 302 m^2 × 1 cy./(24 × 60 × 60/s)}/300,0002/s^2 =4.629 × 10-13=0.4629 ps, for M-G Exp., which 0.4 ps is undetectable.

Our vertical wall signals are detectable by a three digital number of the order of 1.20 μs, 1.20 μs/0.4 ps=3 × 106, that is 6 orders of magnitude (1,000,000) more than the SE-M-M-G Exp. However, to make these results of SE-M-M-G Exp. Comparable to ours, consider the SE-M-M-G Exp. give:

$\Delta fringe=4A\Omega\sin\varphi/c\lambda$ (4).

This above result is due to the Earth's rotation. However, in our case, the results are not due to the non-inertial rotation of Earth.

Our present experiments are types of SE-M-M-G Exp., using electrical signals in a 250 or less m. wire with the much shorter return time (of the order 1.20 μs).

The actual SE-M-M-G Exp. had a longer delay time, corresponding to a longer light track of about 2,000 m.>250 m., with a delay:

t=2.000 m./300,000,000 m/s=1/150,000 s=6.66 × 10^{-6} s=6.66 μs, about 6 times bigger than our time of 1.20 μs, taking into account the difference of the propagation velocities of an electrical signal from c [9].

The SE-M-M-G Exp. is obviously limited to a physical accuracy, defined by the wavelengths of the visible light: From about 390 to 700 nm or Angstroms. Regarding frequency, this corresponds to a band in the vicinity of 430–790 THz, specified and limited by the wavelength of the chosen visible light, which has a very little possibility to improve.

In our case, the accuracy is nine orders of magnitude (i.e., 1,000,000,000 times bigger accuracy than SE-M-M-G's one, see Appendix B). This accuracy has a limited resolution of 40 ps steps, due to the oscilloscope, that has, however, a conventional limitation.

Nevertheless, we have to make these apparently different results, comparable:

Our accuracy is equivalent 40/1,000,000,000 ps=4 × 10^{-8} ps, See Appendix B.

Let us compare the resolution of 1.6 × 10^{-3} ps time wise, 8-3=five orders of magnitude, 100,000 times the SE-M-M-G Exp.1 resolution with similar parameters of the loop l=250 m and area A=302 m^2, against, the technical limit of 40 ps of our oscilloscope used. On top, our resolution has unlimited possibilities to improve. See right above. Alternatively, Appendix B.

The literature8 refers that "for velocity signals of twisted copper wire used in telephone wiring tends to be on the lower end of signal velocities, between 40% and 70% of c. So a good estimate is somewhere between 120,000 Km/s to 210,000 Km/s". So our measurements for propagation velocities were conservative near the lower estimated end by the literature [9].

In our case, this appears nothing like a group velocity, contrary [10]. Because for use, it is possible to carry information by triggering and synchronizing our oscilloscope, with a minimum amount of energy.

Speed velocities of signals of 210,000 Km/s referred in the literature and also by us would increase, against the principle of conservation of energy.

The initial signal energy E_0 (and mass m_0, $E_0=m_0c^2$), increases, to

$E_0/(1-u^2/c^2)^{1/2}=E_0/(1-210{,}000^2/300.000^2)^{1/2}=1.4 \times E_0$. See also Appendix A.

The above indicates that the initial energy E_0 of the signal would have increased by approximately four times, just by traveling along the cable with a high relativistic velocity, such is 210,000 Km/s.

This increase is not observed, remaining a wishful effect to defeat conservation of energy, or a defeat of Special Relativity and it is another coup de grace to SR, never thought or considered of this Relativistic paradoxical-non-observable effect before, by anybody else. Note, this result is independent of our measurements, and it is based solely on what is known by the literature. This result clearly states: "A static charge with an initial velocity v=0, such a charge of a static Energy E_0 from a static charged head of a Van Der Graaf Generator, or alternatively, just a static charged capacitor (of initial rest energy E_0 of rest equivalent mass m_0: $E_0=m_0c^2$), is discharged in a line wire of potential P=0. This energy E_0 moves, initially with v=0 to about v=250,000 Km/s <c, in line wire. Therefore, it should have increased as the mass m_0 increases, about two times, according to the Theory of Relativity. In reality, it does not increase, something that we do not observe, but also never reported anywhere in the whole literature. Moreover, if the opposite were reported, it would have violated the Principle of "Conservation of Energy." This way, the theory of Relativity is doubly a falsified theory, both experimentally and theoretically.

Precautions

Signal propagation velocity depends, according to the literature, on the dielectric constant εr of the wire and the surrounding insulator [11]. The equation 10 is:

$$V = cx\sqrt{\frac{1}{\varepsilon_r}} \tag{5}$$

For the velocity of a lossless transmission line:

$$V = c / \sqrt{LC} \tag{6}$$

length), where L is the distributed inductance (in henries per unit length), C is the capacitance between the wire and the ground (in farads per unit and c is the speed of light in vacuum.

In this research and paper Equations (5) and (6) cannot be true, since this speed actually depends on the time of the day, the epoch, and whether they are clock wise or counter clock wise.

A non-resonated insulated wireline, or linear cable, lying on a bench or the ground certainly makes a capacitive coupling with the ground, with a particular capacitance.

To minimize this capacitance, the line should be insulated and to be elevated above the ground or, in general, to be separated away from the ground [12-20].

For a case of an electrostatic E field alone, which will not be an E/M wave, we like to emphasize here that we shall have, then, a single alone electrostatic signal, without the existence of a substantial M. (Magnetism). Thus it would be a signal without energy and thus impossible. This signal had been referred in the Bible book at the post-graduate level of ELECTROMAGNETISM; that refers to the field intensity E and relevant to it an instantaneous propagation (without energy as we referred above, a book exaggeration, for it is impossible also technically to verify its instantaneous spreading) [21]. But also, in reality, no Faraday's induction would not be caused, without a propagation delay of a current or intensity field E, an explosive inaccuracy of Maxwell's statements (every current has the same value in a circuit) [22].

The book follows a certain policy that refrains--avoids to refer that this very fact contradicts the Holy Cow - Special Relativity and manages, as possibly, using unnecessarily complicated and confusing statements to cover this defect of the said and "the considered "untouchable" Theory of Relativity [21].

This remark also concerns the whole theory of classical electromagnetism and particularly Maxwell's Equations, thus, becoming inaccurate in general and in conjunction to Special Relativity [21]

We repeat in other words: A necessary magnetic field M existence, together with an electric field E existence, that both of them make a dual electro and magnetic, E/M wave for which, we already know to propagate with V, smaller or equal to C, V ≤ C.\[23].

Special Relativity's Reference Frames in our Solar System

A geostatic satellite is a static satellite with respect to a particular (not a polar one) point of the rotating Earth. Earth rotates with:

$$\omega=1 \text{ cycle}/24 \text{ h}=1 \text{ cy.}/24 \times 3600 \text{ secs}=1.157407 \times 10^{-5}/\text{secs} \tag{7}$$

together with its atmosphere. Practical effects of the atmosphere become evident to satellites below 120 Km height. So, any satellite should be high around the Earth above 120 Km. A geostatic satellite, could stay above the Earth in the same direction above it, at least 120 Km high, where it should accelerate with respect to the center of the Earth with an acceleration:

$$a=v^2/r=(\omega xr)^2/r=\omega^2 r=(1.157407 \times 10^{-5}/\text{secs})^2 xr, \tag{8}$$

with r the distance of the center of the Earth to the satellite. The radius of the Earth is 6,371 Km plus the least height of 120 Km of the satellite above the ground which is a very small fraction of the least distance of the satellite from Earth's center =6371+120=6491 Km. Thus the geostatic satellite **actively** accelerates with $a=(1.157407 \times 10^{-5}/\text{secs})^2 \times 6491000$ m= 8695284.9450 m/sec^2, Equation 9. A balloon anywhere in the atmosphere will corotate with the atmosphere. A geostatic satellite stands above the Earth due to its centripetal acceleration overcoming its weight and could be considered an expansion of the Earth's ground. Therefore, the Earth's ground un doubtfully actively accelerates similarly with the satellite, though with a less magnitude of it's acceleration. A geostatic or a heliostat satellite corotates around the Earth or the Sun, and thus they un doubtfully actively accelerate. Thus, such a frame or any other satellite should be an inappropriate for a Special Relativity's reference frame, as a rotating and noninertial. Such as all the planets of the Sun and our sollar system.

Utopia of Inertial Frames of Special Relativity

Special relativity is exclusively and heavily based on the concept of inertial frames-non-accelerating frames, and the exchange of information of measurements between them. And in a such a way that, "all the laws of physics to be the same in all inertial frames."

However, in reality, there is no such inertial frame in our universe. Every realistic and material frame is in a gravity field, and usually rotating, and it should be undergoing a dual or a single acceleration. For a particular gravity, the field extends to infinity, all over the Universe.

So, every reference frame should be located, in an enormous number of gravitational fields, and it should undergo several accelerations. Thus, any "inertial" frame should undergo, the same time, too many several accelerations, too.

Our Earth is exposed to several gravitational fields that of the sun that of the moon and other stars and so on. Thus, the Earth is multiple accelerating. Thus, the Earth is not an inertial frame.

Many non-inertial effects can be seen on Earth. The well-known experiments of "The Foucault pendulum [24-27] the known phenomenon of sea tides, as well the atmospheric tides (producing the winds), due first to the rotation of the earth, and the gravitational influences which are extended to infinity, However, mainly, are due to the influence of the moon and the Sun [28,29].

The assumed inertial frames experience the non-neglectable phenomena of rotational acceleration of the Earth, first exhibited by the Foucault pendulum.

So, every Earth born frame is not inertial. Similar, it is so with every other Earth born space vehicle, such as a technical satellite, spaceship in our solar system or out of it.

So, based on the realistic concept of "inertial" frames, and accordingly to SE-M-M-G exp., and more generally to our experiments, strictly speaking, Special Relativity (SR) cannot have been tested as a true science, at least by humans. It is also impossible that SR has been tested by extra-terrestrials in this Universe or another Universe with the same laws of physics [30].

It is not only the Special Relativity that is based on a utopia, but also the General Relativity's basis is a utopia, based on the principle of equivalence [31]. For this principle, Einstein stated that a gravitational field with intensity g is equivalent to an accelerated frame with an acceleration "a":

$$a=-g \quad (9)$$

This an impossible identity taking into account in any case and for a big enough r:

$$\text{"g"} \sim 1/r^2, \text{ though } g=-a=\text{Const}, \quad (10)$$

Thus, the last quantity "a" should be constant all over the Universe!, which is the biggest inaccuracy of all times.

Velocities<c

The times of recent measurements of these velocities were approximately 1. 12. 40 h and 2. 3.00 h, 3. 18.30 h, marking the first rising crest of a square pulse, both the date Dec. 8, 2014, Location: Athens, Greece. The geographical latitude was: 37° 58` 27`` N, and the Longitude: 23° 44' E, GMT: +2 h, E.

With the notation meaning: CCW=Counter Clock-wise, CW=Clock-wise, always the velocities were calculated, using one-dimensional 250 meters, irregular loop (due to the non-availability of space) of 0.25 mm diameter, 18 Ω total resistance, and capacitance with the ground of 10.6 nF, enclosing approximately an area approximately of 302 m^2.

The measurements were made by our oscilloscope that exhibits digitally the difference of time values of events, described above, and are given by the schematics and charts below in Figures 1 and 2.

Certification of the recent official valid calibration is visible on the sticker on the right of the screen of the oscilloscope. The buzzing noise

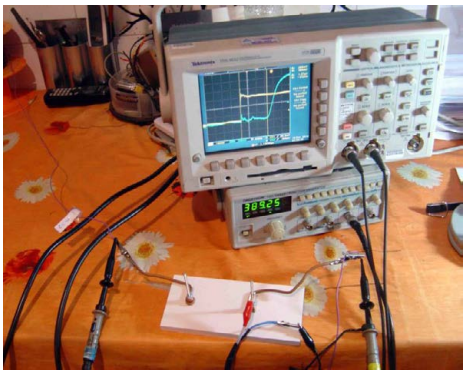

Figure 1: No change can be noticed by separating the oscilloscope from the signal generator.

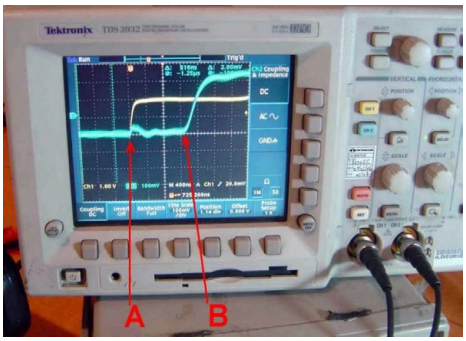

Figure 2: Point A indicates the precursor rise due to a pseudo superluminal signal velocity, intensified when adding an antenna at the reception probe. Point B indicates the real subluminal velocity signal rise and a small horizontal stay there after the signal had traveled 250 m and received at the reception probe.

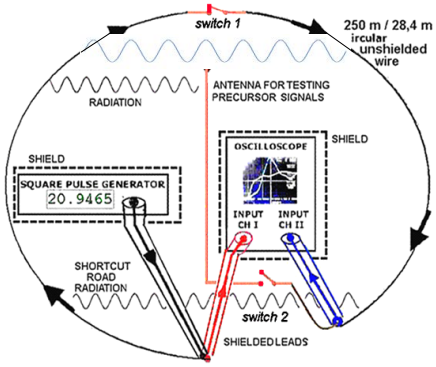

Figure 3: The set up for 250 and 28.4 m propagation times, and the test antenna demonstrating the additional source of precursor signals. Precursor's size signal with the antenna was > precursor's size signal without the antenna. The very existence of the conducted signal was determined by the fact it was dropped to a much smaller minimum2 when the conduction was stopped by switching off the switch 1. The above difference for precursor sizes establishes the influence of radiation, which apparently contributes to the existence[6] of the "early precursor signal" referred in the literature.

"A" Figure 2 does not vanish completely, but diminishes when the circuit is interrupted in the middle by a switch 1 and allowing only the shortcut signals to reach the oscilloscope illustrated in Figure 3.

Schematic not in Scale

The above difference for precursor sizes establishes the influence of radiation, which apparently contributes to the existence 6 of the "early precursor signal" referred in the literature [4].

The overall experiment proves the existence of two signals reaching the oscilloscope via the wire. First, the shortcut signal that remains after the interruption of the switch 2, and second, two signals, increasing the overall received signal, composed of the shortcut road signal and the superluminal conducted signal via the whole loop of the wire, when the switch one contacts. (The buzzing noise "A" diminishes and deforms, when the circuit is interrupted by switch 2 and switch 1 conducting, limiting the shortcut signals to reach the oscilloscope, see Figure 2 too, when switch 1 is not conducting, the received signal diminishes to a more to minimum 2. Obviously, the difference is now made by missing the intercepted super luminous signal via the entire wire.), explained in Figures 4-10.

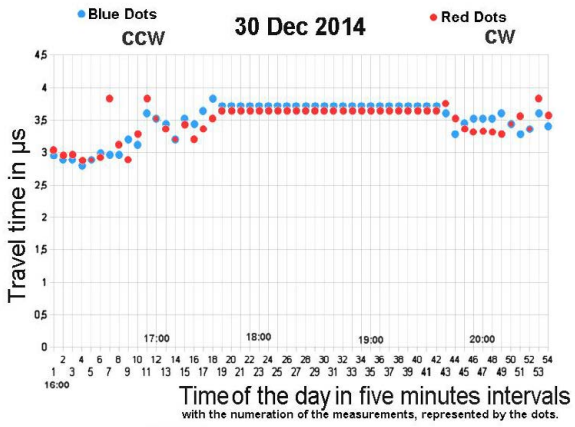

Figure 4: CCW, CW 250 M., TIME DELAY CHARTS: For the 30 Dec. 2014 chart, there is a visible tendency of red and blue dots to arrange themselves one above the other, in groups.

More than 5000 total measurements and tests were done to reach our conclusions. However, several millions of measurements with automated computerized lock-in registry, over at least several years, should be needed, to give a rather approximated picture of the phenomenon.

For the velocity, it is ccw>cw, or ccw<cw occurring in groups.

The Major Discovery Concerns the Privileged Velocities of 30000 ± 425

Cable lines, coupled capacitive with the ground of Earth, as we said above exhibit puzzling anisotropic CW and *CCW* electrical signals with average propagation velocities:

$$V \cong (2/3) \times c \quad (11)$$

$$\text{or } V \cong \text{coef.} \times (2/3) \times c \quad (12)$$

where, coef. is an adjusting factor in relation to Ref. 8, in case some other materials will be used for the 250 m. wire. For our particular case, it is coef.=1, Equations 11 and 12.

with an average percentage propagation variation of time among them:

$$\frac{(\frac{1}{cef.})(ccw - cw)}{(\frac{1}{cef.})(ccw + cw)/2} = \frac{2(\text{ccw} - \text{cw})}{\text{ccw} + \text{cw}} \pm 3\% \quad (13)$$

which corresponds to a general relative variation and to an average velocity variation coef.(2/3) × cx(± 3%)= ± coef.2Xc3% ≅ ±coef. 18000 Km/s which is only approximately correct and of the order of the motion of the Earth ground around the sun, due to a certain particular-selective not period's, not representative measurements of the whole year, of cw and ccw.

Note: The anisotropy difference of *ccw cw*, cannot be detected without a type of oscilloscope equivalent to our particular digital oscilloscope and with a propagation line loop of much less than 250 meters.

These results are noticed for the first time here, using both a *cw* and *ccw* rotation of the signal, strongly coupled with 10.6 nF, with the Earth, which is only *ccw* rotating, in the northern hemisphere.

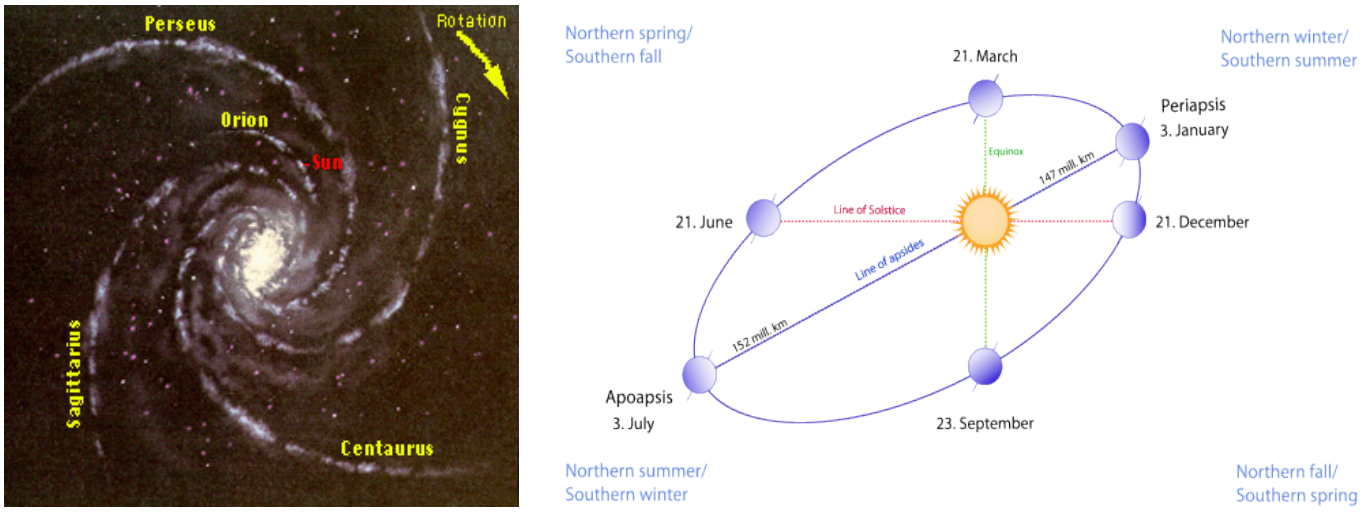

Figure 5: Suin is moving around the galactic center at an averaghe speed of 230000 m/s.

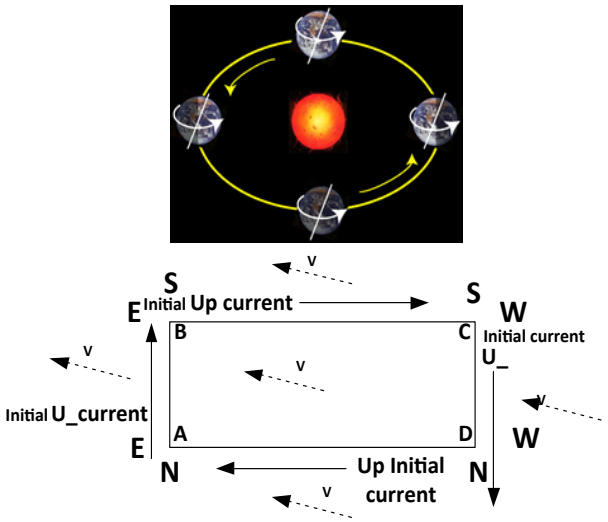

Figure 6: For v= about the orbit of the earth surface: v=30000 -/+ 625 m/s in the dominion of the sun, our measured data become reasonable. Without apparent from our limited data, the participation of the Galatian velocity of the sun= 230.000 m/s, followed by the earth.

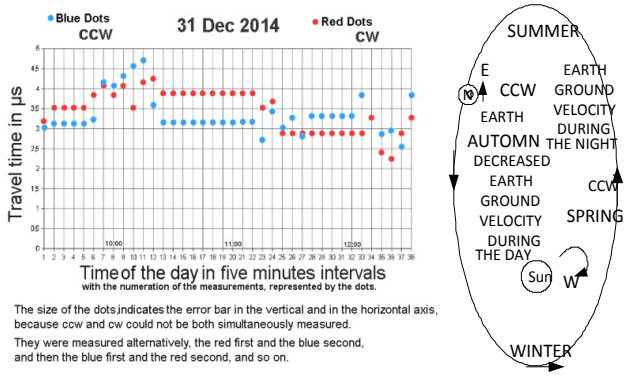

Figure 7: CCW, CW 250 M., TIME DELAY CHARTS: For the Dec. 31, 2014, chart, there is a visible tendency to arrange themselves one above the other, in groups.

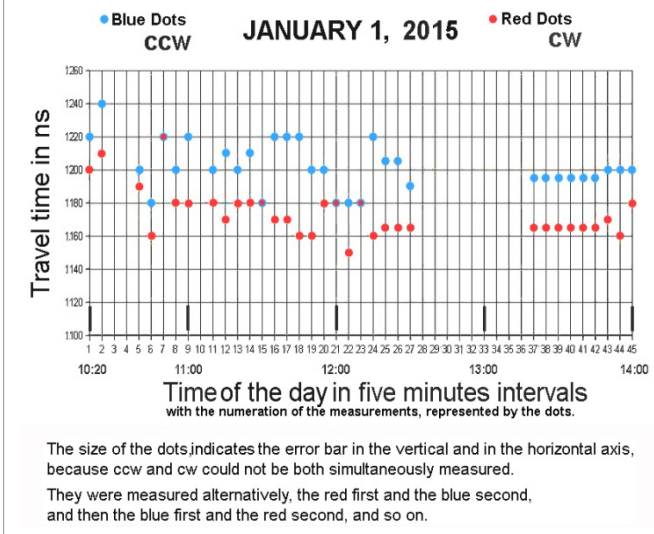

Figure 8: CW and CCW TIME DELAY CHARTS: For Jan. 1, 2015 chart, there is a visible tendency to arrange themselves on above the other, in groups.

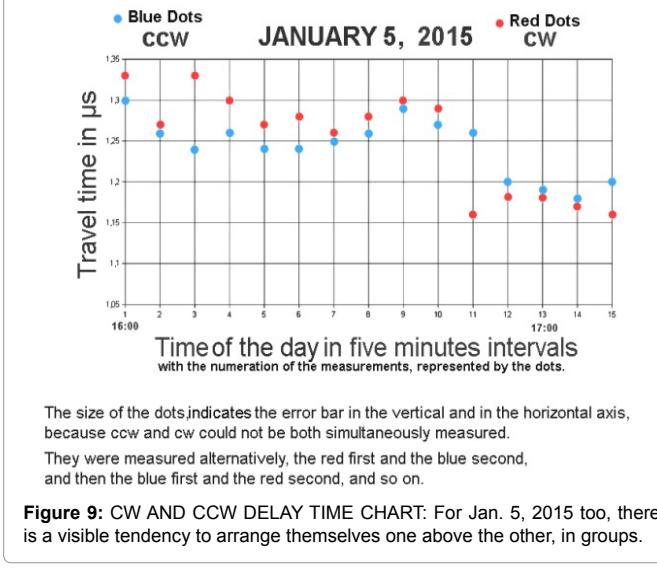

Figure 9: CW AND CCW DELAY TIME CHART: For Jan. 5, 2015 too, there is a visible tendency to arrange themselves one above the other, in groups.

They compare, in certain limited way, with the results of Sagnac7, Silvertooth28, Michelson-Gale7,1, Dayton Muler on the top of the mountain Wilson, who was correlating his findings with the sidereal time. This very fact of sidereal time correlation, indicates that his results are not of terrestrial origin, neither of solar or of planetary origin a fact which will be here verified later [1,8,32-38].

Taking into account for the above results, one may think any variation of the found effects, if they exist, should depend on the epoch, and the orbital velocity of the Earth.

The above results of other researchers and ether drift theories should be compared with our present results with strong coupling to the Earth, but this is not particularly the case here, as we shall see refs. [39,40].

They correlate also strongly and much better with the results of M-G 37,38 Exp., and the loose couple with the Earth, experiment of Hafale and Keating [1,42-44].

About these discovered by us velocities; we could only speculate that may probably define the rotating velocity of our own Galaxy that does not co-rotate and codragge the Ether with it, as the rotating Earth does not co-drag the Ether in the M-G Exp. and this velocity remains yet unknown in the Universe. Farther, The basis of Special Relativity that of inertial frames, does not exist. So, both "inertial frames" and "Special Relativity" are a utopia [33,45,46].

Conclusion

The present experiments are a much better type of a M-G Exp. It uses Electrical signals in a 250 or less m loop wire, much longer time wise. (of the order of 1.20 μs). With a comparable equivalent resolution of 4×10^{-5} ps, a 100,000 times better than the SE-M-M-G Exp. of a 5000 nm-Angstrom light track of 1,900 m, with a resolution of 1 fringe=1.6×10^{-3} ps time wise, see Appendix B.

The present findings reveal much more information and many more relevant details than SE-M-M-G. It seems to confirm most of the findings of our previous paper, such as superluminal velocities,

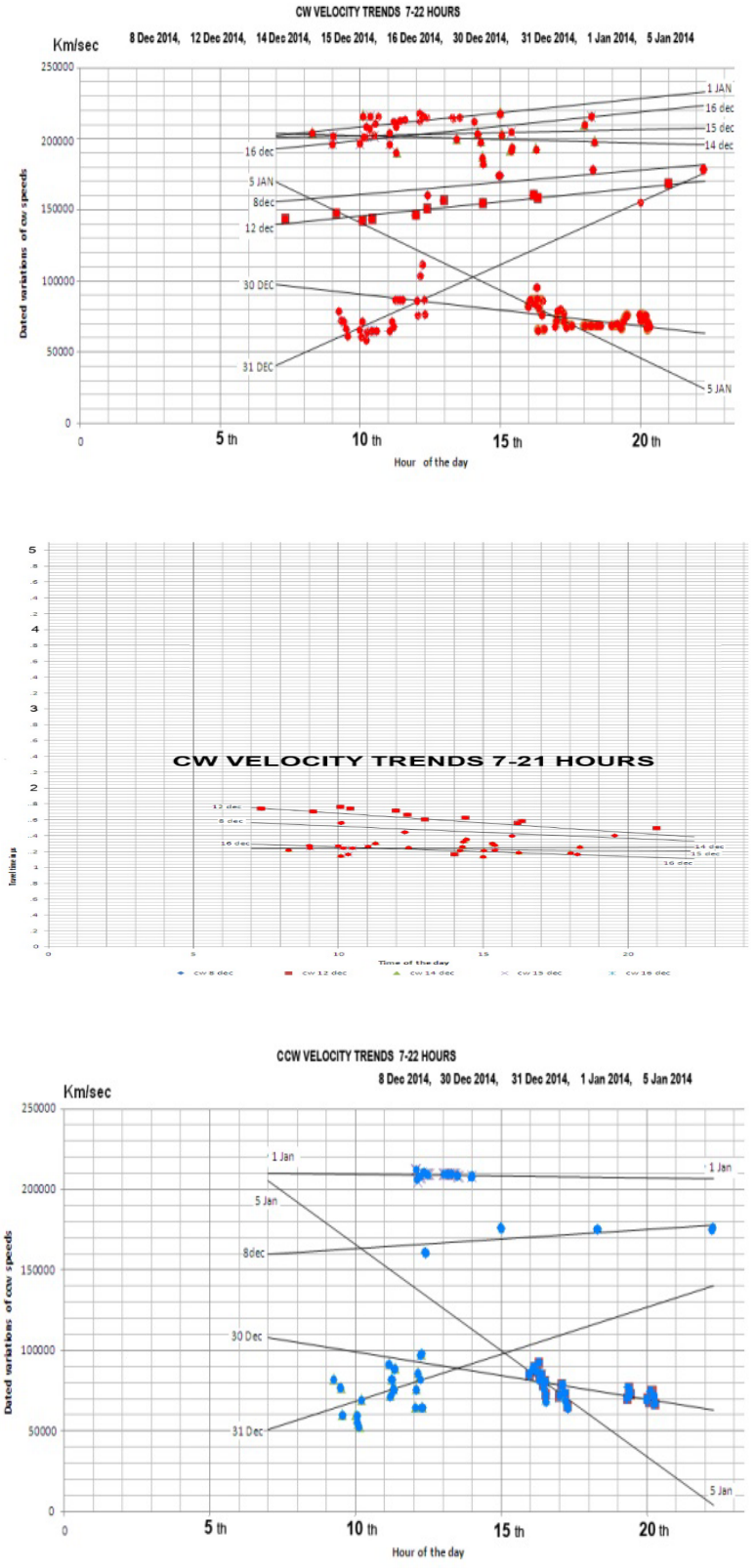

Figure 10: Comparative chart of cw velocities measurements with respect the time of the day and the date.

anisotropic wire propagation of cw and ccw velocities of the order ≅ (2/3)c of light.

These velocities also depend on the time of the day. It is confirmed that these velocities are slightly different and (but not always) and ccw>cw or cw>ccw: this difference depends on the time of the day and the particular date and the inequality reverses in groups.

Also a confirmation of the previously found superluminal signal velocities is done here. The 1st major new finding is: The average velocity of 30000 ∓ 425 m/s

This average velocity-discovery of our experiments does not seem to be of kinematical origin of the motion Earth. It does correlate at all with the monotonic rotational velocity of the Earth, about 0.5 Km/s, for which the SE, M-G Exp. and M-M Exp. were designed. See also Appendix B. It correlates with the monotonic orbital velocity of the Earth, about 30 Km/s. Also, the monotonic proposed Galatian velocity of about 260 Km/s of our solar system.

The average case of velocity of propagation is about (2/3) × c. The energy of the signal is increased about 34/%=1/(1-(2/3c/c)^2)$^{1/2}$, due to its velocity increase, according to Special Relativity, (via the Lorentz Transformations of Energy, similar to Mass increase). This presumed increase was never observed here or reported by anybody. It was never considered or suspected. Thus, the theory of Special Relativity is doubly falsified here, both theoretically and experimentally.

The 2nd. Discovery is: These velocities change with the epoch of the year. In particularly, as we said above, the velocities vary with the time of the day, with a minimum early in the morning or even earlier, towards the small hours, after midnight.

Therefore, we have in the morning a minimum, and in the early night or even later (close to midnight) a maximum. As the maxima avoid the daylight and the presence of the Sun. Probably, the velocities change with each year (Never checked this). Because, we had not long enough time, (comparable to several years), to test this last aspect.

Theoretical Consideration

According to Einstein, the speed of light and the speed of a signal in a wire, cannot be measured independently of the convention of "how to synchronize the clocks at the source and the detector". However, this is what we do on the contrary here, is to measure experimentally the one way trip speed of a cw on closed loop wire, without any convention.

Albert Einstein had chosen a synchronization convention (see Einstein synchronization) that he made the one-way speed equal to the two-way average speed, i.e., cw v.=ccw v.=(cw v+ccw v.)/2, which we know that ccw and cw are different. This wrong constancy of the one-way speed in any given frame, inertial or non inertial, is the basis of Einstein's Special Theory of Relativity. However, this constancy is 100% here disproved. Thus, the Special Relativity is disproved, too.

All the previous phenomena referred here, do not seem to correlate with each particular season of the year. They do not match any science.

The Central Core of this Conclusion is the Speed of 3000 ∓ 425 m/s

There are at least two preferred-privileged velocities 30000 ∓ 425, negating the statement of Einstein "there are no preferred velocities in our Universe". The natural utopia of the equivalence of inertial frames-Principle of Relativity, as we referred above, is not only kinematical, i.e., not due to the frame's curved state of motion, which is always so. This makes the frames always to accelerate. However the privileged velocities do exist.

Therefore making the inertial frames a double non-existing utopia, and realistically specifying them-non-inertial, and thus S. Relativity is unverified on the noninertial frame of the Earth.

The Associated different phenomena of the assumed inertial frames seem to be specialized to each particular frame, i.e., to be individualized to each one frame.

This way excludes the Einstein's Principle of Relativity "all laws of physics should be the same for all "equivalent" inertial frames", we better use the words"different inertial (actually in practice non-inertial) frames" instead of "equivalent inertial frames."

These phenomena are completely new, and together with the super luminous velocities; they hit the very core (a coup de grace) of Special Relativity. Privileged velocities need much longer time of observation and investigation, up to probably several years or more, with the probable collaboration of many other scientists, in revealing too, the puzzling exsistence of these velocities, as well probably discovering even more. Finally, on the basis of these preferred-privileged velocities, considerations and discussions of an aether, may be raised with respect to which, these velocities may be defined, probably. As far as Special Relativity, we reached its end after about 100 misleading years.

References

1. Doug Marett (2010) The Michelson-Gale Experiment. The search for Physics
2. https://en.wikipedia.org/wiki/Digital_storage_oscilloscope
3. Barbero APL, Hern´andez-Figueroa HE, Recami E (2000) "On the propagation speed of evanescent MODES." Physical Review E62: 8628-8635.
4. American Museum of Natural History. Cosmic speed limit.
5. Special Relativity/Faster than light signals, causality and Special Relativity, Wiki books.
6. Pappas PT, Obolensky AG (1988) 36 nanoseconds faster than light. Electr. & Wireless World 94: 1162-11655.
7. Http://en.wikipedia.org/wiki/Sagnac_effect.
8. http://en.wikipedia.org/wiki/Velocity_factor.
9. https://en.wikipedia.org/wiki/Velocity_factor
10. Pappas PT (1989) Superluminal Propagation Velocity of Signals. Electronics and Wireless World, p: 132.
11. Pappas PT (1989) Superluminal Propagation Velocity of Signals. Electronics and Wireless World, p: 144.
12. Pappas PT (1989) Superluminal Propagation Velocity of Signals. Letters to Electronics and Wireless World, p: 299.
13. Pappas PT (1989) Superluminal Propagation Velocity of Signals. New Scientist p: 35.
14. Pappas PT (1989) A Kladouchou, Periscopio tis Epistimis, 114/20.
15. Pappas PT (1989) A Kladouchou, Periscopio tis Epistimis, 118/68.
16. Pappas PT (1989) N. Argyropoulou, Davlos. 86: 4894.
17. Jackson JD (1975) Classical Electrodynamics. 2nded., Wileyonline publishers, Newyork.
18. Pappas PT, Pappas LP, Pappas TP (2014) Ampère cardinal forces-electrodynamics—Proof and prediction of empirical Faraday induction. Physics Essays 27: 570-579.
19. http://ericpdollard.com/wp-content/uploads/2014/06/electromagneticinductionanditspropagation.pdf
20. http://en.wikipedia.org/wiki/Foucault_pendulum.

21. http://www.cleonis.nl/physics/phys256/foucault_pendulum.php

22. Francis W Sears (1969) An introduction to thermodynamics, the kinetic theory of gases, and statistical mechanics. Am J Phys 37: 1126

23. Weltner K (1979) A new model of the Foucault pendulum. Am. J Phys 47: 365.

24. http://en.wikipedia.org/wiki/Tide.

25. http://www.buzz-noisele.com/articles/what-causes-tides.html.

26. http://www.einstein-online.info/spotlights/equivalence_principle.

27. Silvertooth EW(1986) Special Relativity. Nature 322: 590

28. Miller D(1929) Ether Drift Experiments in 1929 and Other Evidence of Solar Motion. J Royal Ast Soc 24: 82-84.

29. Miller D(1922)The Ether-Drift Experiments at Mount Wilson Solar Observatory. Physical Review 19: 407-408.

30. Miller D (1925) Ether-Drift Experiments at Mount Wilson. Proceedings Nat Acad Sciences 11: 306-314.

31. Miller D(1926) Significance of the Ether-Drift Experiments of 1925 at Mount Wilson. Science 63: 433-443.

32. Miller D(1934) The Ether-Drift Experiment and the Determination of the Absolute Motion of the Earth. Nature 133: 16-27.

33. Hentschel K(1992) Einstein's Attitude Towards Experiments: Testing Relativity Theory 1907-192. Studies in History and Philosophy of Science 23: 593-624.

34. Miller D (1933) The Ether-Drift Experiment and the Determination of the Absolute Motion of the Earth. Reviews of Modern Physics 5: 203-242.

35. http://en.wikipedia.org/wiki/Luminiferous_aether

36. https://en.wikipedia.org/wiki/Michelson%E2%80%93Gale%E2%80%93Pearson_experiment

37. Hafele JC, Keating RE (1972) Around the world atomic clocks: predicted relativistic time gains. American Association for the Advancement of Science.

38. Silvertooth EW, Whitney CK (1992) A new Michelson-Morley Experiment. Physics Essays 7: 5.

39. Silvertooth EW (1992) Experimental detection of the ether. Physics Essays 5: 82-89.

40. http://en.wikipedia.org/wiki/One-way_speed_of_light

41. Einstein A (1905) Fundamental ideas and problems of the theory of relativity. Lecture delivered to the Nordic Assembly of Naturalists at Gothenburg

42. http://en.wikipedia.org/wiki/Michelson%E2%80%93Morley_experiment

43. https://en.wikipedia.org/wiki/Faster-than-light_neutrino_anomaly,

44. Reich ES (2011) Neutrino experiment replicates faster-than-light finding. Nature news

45. Pappas PT (2017) Theory of everything, dark matter, dark energy explanation, beyond einstein's wrong upper universal velocity c, and special relativity. Article in press, physics essays.

46. Pappas PT, Pappas LP, Pappas TP (2016) Special relativity is untested in an inertial frame. Physics Essays 29: 222-224.