About some conventions in mechanics

Sergey V. Shevchenko[1] and Vladimir V. Tokarevsky[2]
[1]Institute of Physics of NAS of Ukraine, Pr. Nauki, 46, Kiev-28, Ukraine, Scientific explorer[*], ret.
[2]Professor ret., Pr. Nauki, 46, Kiev-28, Ukraine

Abstract In this paper the "conventions problem" in physics is considered, first of all in application to mechanics .

Key words: Space, Time, mechanics, Lorentz transformations, relativity theories, conventions

1 Introduction

The "convention problem" is fundamental in Science, since the using of conventions in Science, except the unique case below, is fundamentally inevitable by at least two reasons.

First of all that follows from the fact that any new information about the external to humans World [and in many cases about internal processes also] humans, or more correct, humans' consciousnesses, obtain only at practice, including in scientific experiments; every new information is principally empirical. However from any experiment by no means follows that an obtained information relates to some indeed objectively existent stable dependences, links, etc. in the External; from the fact that in N some experiments n practically identical outcomes was obtained by no means follows that in the $(N+1)$-th experiment the outcome will be the same. Thus any theory, which, basing on some sets of stably obtaining outcomes, only postulates, i.e. asserts without proof, some objective existence of corresponding systematization of some studied objects and detected links between them, which cannot be proven as be indeed adequate to the objective reality; eventually humans principally can only believe that it is true.

The second reason, which, though, follows from the reason above, relates first of all to the fact that Science has as the main subjects for study two fundamental for humans notions/ phenomena "Matter" and "Consciousness"; when, remaining in traditional framework of the two main philosophical doctrines "Materialism" and "Idealism", it turns to be incapable to answer on the question: what are these notions/phenomena? Both, Matter and Consciousness, are in the traditional philosophy some undefined transcendental omnipotent Essences that compose and control the Being.

So the scientists, when studying of the External, don't know what are their consciousnesses and Matter, and so don't know – what studies of what -? And, further, correspondingly: by what ground the first "what", creating a next theory or

[*] sshev2g@gmail.com

model, thinks that (s)/he indeed discovered some links, laws, etc. in the other "what", which, besides, again by some unbelievable [except a case in traditional philosophy and religions when some sentient Creator/ "Idea" created both "whats" and established some links, laws, etc.] reason, indeed exist there?

Thus it is quite natural that any science is formed eventually as some sets of conventions, which establish/fix some common interpretations of data about the external events, effects, etc.

For example in the mainstream/["official"] physics any scientist doesn't know – what are so called "particles", "bodies", etc., which exist and "move" in also indefinable "space" and "time"; what are "energy", "mass", "momentum", etc.; and their introduction and using in theories is the result of some conventions.

The rational, though, of course, till now incomplete, answers on the problems above are possible only in framework of the new philosophical "The Information as Absolute" conception [1] where it is rigorously proven that all, what exists, is/are some informational patterns/informational systems of the patterns that are elements of the absolutely fundamental and absolutely infinite "Information" Set.

That, i.e. **this unique rigorous proof that relates to the External, turns out to be possible only because of that the notion/phenomenon "Information" is absolutely fundamental**, in contrast to "simply fundamental" for humans notions/phenomena "Matter" and "Consciousness", which, as that is shown in the conception, are fundamentally different informational dynamical systems of informational objects, i.e., particles, bodies, etc. in Matter and at least humans' consciousnesses in Consciousness. Both exist and change as some sub-Sets.

Thus the question "what studies of what -?" obtains the answer: there is nothing surprising in that some self-aware informational system, which is capable to find some links and laws in obtained information about the external, indeed can correctly find such links, laws, etc. in the external Matter; if these links/laws/etc. indeed exist. That doesn't guarantee that every consciousness's inference is true, however such cases aren't principally prohibited.

The next utmost fundamental notions/phenomena that are necessary at elaborating of the "convention problems" in Science, first of all "Space", "Time", "Change" and "Energy", in the conception become be rationally defined also [1], that are absolutely fundamental Rules/Possibilities ["Space" and "Time"], absolutely fundamental "Action" ["Change"], and absolutely fundamental "Quantity" ["Energy"], which are members of the set of absolutely fundamental Rules/Possibilities/ Quantities/Actions… "Logos", in accordance with which [Logos' members] every information must be constructed, and which are necessary for any information could exist and change at all.

As well as the phenomenon "Information", though it is absolutely fundamental, isn't transcendent and can be rationally and effectively studied; besides the rational defining of the main, transcendental in the traditional philosophy and Science, notions/phenomena above allow to study Matter and Consciousness rationally also.
Thus the "level of the conventionalism" in science becomes be principally reduced from fundamental to routine, and some conventions appear in the theories, models, etc. practically only because of from experimental data usually a number of possible

scientific inferences/ interpretations follow. Correspondingly practically in any science there exist a few theories that are used at studying of External, which differs, first of all, on different conventions that relate to basic the theories' postulates.

Sometimes the conventions are rather strange, an example in mechanics we consider below; though at that we must, of course, to use some postulates that follow from experimental data and so cannot be proven and introduced here as some conventions.

2 Mechanics of bodies

From existent experimental data it seems rational (more see [4]) suggest/postulate a few assertions that are marked italic below.

Matter [and every material object, i.e. every particle, body, galaxy…] is rather simple logical system that *exists and changes basing on reversal*, and, as that seems as with rather large probability, *binary*, logic, which is controlled by *a rather small number of laws and links*. Besides, Matter and every its object exists, changes, and interacts by *using some true information exclusively*, when all changes of the objects, including changes of their states at interactions, happen/proceed as some logical transitions with using a few fundamentally universal for all Matter's objects constants.

Thus it seems as rather rational to suggest that in depth *every stable particle is some algorithm,* which is constantly, because of the energy conservation law, runs as sequential "flipping" of "*fundamental logical elements*" (FLE) [every particle is so called "cellular automaton"]. The FLEs aren't totally binary elements, they have also some "input/output logical gates" that are responsible for radiation/absorption of signals [which cause observable impacts] for every of known now four fundamental Nature forces: gravity, weak, EM and strong forces. However every interaction between the objects results eventually in changing of the objects main universal parameters: energy, and position in the Matter's spacetime.

More about the spacetime see below, here note only that from existent now experimental information seems as rather rational that *these constants are the main Planck units:* standard minimal step in 3D space at every simplest logical "spatial" transition is equal to the Planck length, l_P; standard minimal temporal interval at every, i.e. at changing of internal states of the "algorithms" and changes of their spatial positions, is the Planck time, t_P; standard minimal step in physical action and changes of energy, $\Delta E \Delta t$, is the Planck constant, $\hbar$. Thus the existing physical constants as, for example, the standard speed of light and the gravitational constant aren't fundamental in the sense that they are derived from the Planck units. Besides from this suggestion follows the "equal footing" at motion of the material objects in the space and the time.

A few remarks about the space, the time, and bodies motion

More about Space and Time see [2], [3], about the Matter's spacetime specifically see [4], here we touch only some necessary in this case points.

Both phenomena are, as that is pointed above, the absolutely fundamental Rules/ Possibilities that as the Possibilities provide a possibility for any information to be existent at all ["Space"], and to change, ["Time"], "Time" is a "space for changing states", if something changes; forming so for informational patterns/systems "spacetimes". All/every informational patterns, including all/every objects/systems in the systems "Matter" and "Consciousness", exist and change in corresponding spacetimes, which, in spite of the absolute fundamentality of these Rules/Possibilities are formed just by objects/systems. Including the number of dimensions of the spacetimes are determined, for example the number of the spatial dimensions, by that how many independent changes of spatial position exists in some system. For example to write a text is necessary to have 2D paper sheet, and this fact is determined by grammar rules in the system "a language + a writer". Since elements of the system "Consciousness" aren't material, the Matter's and Consciousness's spacetimes are, at least partially, different.

Thus, in certain sense, every spacetime of every changing pattern/system "emerges" from this pattern/system, when it "chooses and uses" necessary for itself spatial and temporal dimensions from the Set's spacetime, which has seems [absolutely?] infinite number of at least spatial dimensions. However for stable existence of some system of objects it is necessary for the objects, though they can be rather different, to use some universal possibilities for their changes, they be unable at that to impact on these possibilities/dimensions. By another words **in stable systems a system's spacetime is "absolute" for every element of these systems**.

The Matter's spacetime is absolute for every material object as well, and, as that is shown in the informational physical model [4], it is the [5]4D Euclidian "empty container" as the possibility to place somewhere the dynamical informational system "Matter", and the corresponding [5]4D Euclidian manifold in physical theories. It has two temporal dimensions: "the coordinate time" dimension, "τ", and the "true time" dimension, "t"; and 3 spatial dimensions.

The rule/possibility "true time" is absolutely fundamental and universal rule/possibility, which controls and provides the space for all changes in all dynamical objects/systems in the Set, including of all material objects and of the system "Matter" as a whole. In accordance with this rule every change of an object/system of objects is necessarily accompanied by some non-zero true time interval, Δt, thus every changing object/system at every change moves in the true time dimension on the temporal distance Δt. The true time's dimension in the informational model above is the 5-th dimension of the Matter's spacetime

The rule/possibility "coordinate time" provides the space for the reversible sequences of the changes [what is illogical to some extent for unidirectional "true time"], and controls them only at changing of internal states of the fundamental fermions, and further, correspondingly, of the systems of the fermions, i.e. elementary "T-particles" and "T-bodies" [4]; which are created by impacts/ non-zero coordinate time components of 4D momentums and so always move along the coordinate time axis, though can also move in the 3D space. It is the zero dimension in the [absolute also, of course] Matter's 4D sub-spacetime, which contains, besides the coordinate time, 3 spatial dimensions. In accordance with this rule every fermions' internal change is accompanied necessarily by some non-zero coordinate time interval, $\Delta\tau$, thus every changing T-object/system at every such change moves

in the coordinate time dimension on the temporal distance $\Delta\tau$, however, in contrast to unidirectional the true time intervals, these intervals have different signs for direct and reverse changes. Thus, by convention, the fundamental fermions, and particles, bodies, etc. that are created from these fermions, change their internal states in the "positive" direction, so these changes are accompanied by positive $\Delta\tau$, and so changing particles move in the positive coordinate time direction. Correspondingly the changes of the internal states of antifermions and systems, which exist and change as reverse aversions of corresponding fermions, are reverse, and thus they move in the reverse, i.e., negative coordinate time direction.

Because of the "equal footing" at motion of particles and bodies in the spacetime, the motion description becomes be simpler, if intervals in the coordinate and true times dimensions are used as "$c\tau$" and "ct", where "c" is the standard speed of light.

Provided the metrics above, *all/every material objects*, *after Matter obtained a large portion of energy at Beginning and because of the energy conservation law, further uninterruptedly*

[though the term "uninterruptedly" isn't completely correct, in certain sense. On fundamental depth every material objects moves "step by step", when inside the steps their positions in the space and both times are uncertain because of the quantum limitation ($\hbar$) on the physical action above; however this fact is inessential here, since we consider motions and interactions of macro-objects at energies, when possible impacts of quantum mechanical effects are negligible],

move always in the 4D sub-spacetime with 4D speeds that have identical absolute values be equal to the speed of light.

"S-objects", which are created by the momentums having non-zero 3D spatial components, and just only by these components, for example the S-particles "photons", though also are changing uninterruptedly their internal states in the 4D sub-spacetime, on macro-level, i.e. as "whole objects" move with the speed of light in the 3D space only. S-objects cannot move in the coordinate time, when attempts to transmit to them some momentums that are directed along the coordinate time axis result in appearance of new T-particles; if the particle is a photon, then, for example, electron + positron pairs appear.

The motion of T-objects when they are at 3D spatial rest and S-particles "photons" is shown on Fig.1.

If a T-object is impacted with transmission to it some non-zero spatial momentum, it moves in the 3D space also. An example, when the particles and the rods that are shown on Fig.1 above are moving in the space with speeds be equal to half of the speed of light, is shown on Fig.2.

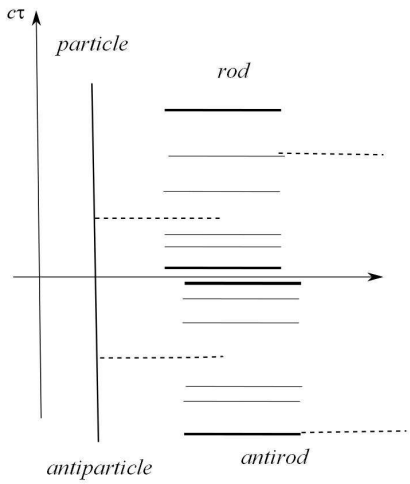

Fig. 1.[Uninterrupted but non-continuous] motion of material objects in (X, c τ) plain of the Matter's 4D sub-spacetime. The T- objects, here a particle, an antiparticle, a rod , and a "antirod" having the lengths L are at 3D spatial rest. S-particles, i.e. photons [marked as "--------"], which are time to time radiated by the particles and the rods, move in the 3D space only and don't move in the coordinate time.

Simultaneously, all, i.e. T- and S-objects move in the 5-th, i.e., the true time, dimension with 1D speed of light, as that shown on Fig.3.

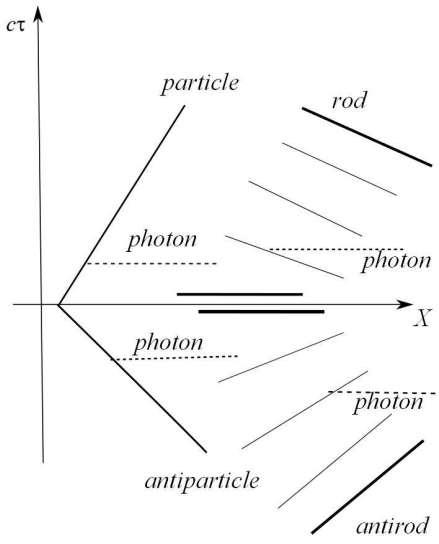

Fig.2. The particles and rods on Fig.1 move in the sub-spacetime with a spatial speed V near half of the speed of light. Since every object moves in the 4D sub-spacetime only with the speed of light, spatial impacts change, first of all 4D directions of their motions. The rods are rotated additionally in the (X,cτ) plain (see below); the spatial projection of the rods, L_s is equal $L_s = L(1-V^2/c^2)^{1/2}$

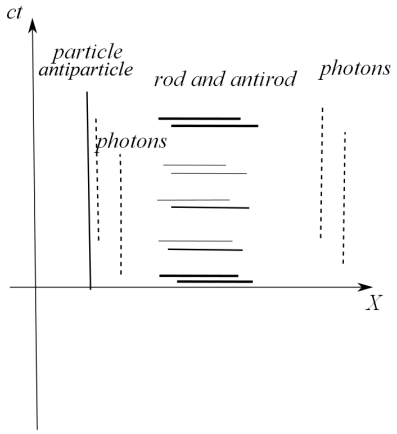

Fig.3 The particles and rods on Fig. 2 move along the true time dimension /axis as being always on the [4D] hyperplains $ct_i = ct_0 + k(\Delta ct_i); k = 1, 2.....$ Note that the moving rods' spatial lengths are "contracted" as that is on Fig.2

Thus, if an absolute frame [i.e. a frame that is composed from an observer, clocks, and rules that are at absolute 3D rest] contains some clocks, which are usually T-bodies, the clocks move along $c\tau$ coordinate axis with maximal speed, i.e. with the 1D speed of light; when the changing of internal processes in such clocks proceeds with maximal rate, and, since clocks are instruments that show how their internal state changes, they tick with maximal rate also.

Correspondingly, since any clocks show how just their coordinate time intervals change [i.e. how they move along the zero axis of the 4D sub-spacetime], clocks that are at rest in the absolute frame show the coordinate time intervals, $\Delta\tau_i$, that are equal to the true time intervals, Δt_i

[Both time intervals for every T-objects always constantly increase, though differently. All the objects that have non-zero spatial 3D speeds have the speeds along the coordinate time, in accordance with the Pythagoras theorem, lesser then the speed of light. Objects that have zero rest mass, for example photons, don't move in the coordinate time and so move only in the 3D space with the speed of light; and, simultaneously, with the speed of light in the true time]

Thus, if a material T-point moves along *X*-axis in an absolute frame with a speed *V,* and if this point started the motion in the point (0,0), its real position in the 4D sub-spacetime is:

- its spatial position is $x_p = Vt$;
- its position in the coordinate time, in accordance with the Pythagoras theorem, is $c\tau_p = ct(1 - V^2 / c^2)^{1/2}$;
- .

When **a non-pointlike rigid T-body** moves, its motion is more complex. Since every particle is some close-loop always running algorithm, it is some 4D gyroscope, which is always oriented in the 4D sub-spacetime, there are a lot of reasons to suggest *that gyroscope's 4D rotation rate is directed always along [±] the particle's*

motion 4D direction and so its direction is different at different particle's spatial speeds. For the pointlike particles this fact isn't essential (see Figs. 1, 2), however that is important for non-pointlike macro-bodies that are constituted from the particles. If a body is rigid enough, the **body as a whole also is always oriented relatively to the body's 4D motion direction**, and at changing of its speed changes its orientation. Correspondingly the **additional motion** appears – the body turns on some angle in the $(X,c\tau)$ plain; in accordance with the Pythagoras theorem the cosines of this angle is equal $(1-V^2/c^2)^{1/2}$.

Thus the body's points positions in the $(X,c\tau)$ plain become be placed so, that, their real spatial coordinates depend from these points' position in the coordinate time and on the contrary – the body's points' temporal coordinate depends on the points' spatial positions. Correspondingly, in the standard case when a body is a rigid, having a rest mass and a length, L, rod, which moves along an absolute frame's X-axis, when the rod's axis is along the X-axis, the dependent on each other equations of the real rod's points motion in the 4D sub-spacetime and so in coordinates of the absolute reference frame are:

$$\begin{aligned} &x_b(z) = Vt + z(1-V^2/c^2)^{1/2} \\ &c\tau_b(z) = ct(1-V^2/c^2)^{1/2} \mp \frac{Vz}{c} \\ &z \in (0, L) \end{aligned} \qquad (1)$$

where in "$\mp$" the sign "-" is used for motion of particles and "+" for antiparticles and z is some variable that changes from 0 to L.

It is evident that **the equations of the rod's points motion (1) are Lorentz transformations** equations if we replace $z \to x'$, $x_b \to x$, and $c\tau_b \to ct'$ in the case when the positions of the reference points of corresponding absolute and moving frames are (0,0,0,0).

$$\begin{aligned} x' &= \frac{x - Vt}{(1-V^2/c^2)^{1/2}} \\ ct &= \frac{ct' \pm \frac{V}{c}x'}{(1-V^2/c^2)^{1/2}} \end{aligned} \qquad (1a)$$

however, the equations are true only for the rod's points, which have **real** coordinates in the 4D sub-spacetime as:

$$\begin{aligned} &x_b \in [Vt, Vt + L(1-V^2/c^2)^{1/2}] \\ &c\tau_b \in [ct(1-V^2/c^2)^{1/2} \mp \frac{VL}{c}, ct(1-V^2/c^2)^{1/2}] \end{aligned}.$$

That is quite analogous to the Galileo transformations

$$\begin{aligned} &x = Vt + x'; \\ &t = t' \end{aligned} \qquad (2)$$

which **really** are valid for x' inside "Galileo's cabin", where "flies fly and forks and cutlets don't fly just as in a beach tavern" only [of course in whole ship], outside the cabin there cannot be some moving x' [and, say, rules for the coordinate measurement]; and so Galileo transformations are also the equations of motion of the points inside cabin, when x' and x relate to the one x-coordinate of the one point in the absolute 3D space.

However, because of the high symmetry of laws [and so of a validity of the "relativity principle"] of the [not only mechanical] dynamics, both systems of equations Eqs.(1) and Eqs.(2) are seemed as can be used in physical theories as the transformations between relatively moving in the 3D space inertial reference frames, where the sizes of "the cabins", can be, on first sight, arbitrary; and so the axes of the reference frames coordinate systems can be are arbitrary, including infinite, also.

That is principally true for the Galileo transformations, since Eqs.(2) are totally symmetrical at changing $x' \to x, V \to -V$ and reverse; thus in this case there is no reasons to choose some preferred motion and corresponding frame. Seems that was the main reason for Poincaré to state yet in 1902 [5] that it is impossible to detect some "absolute motion", though yet in this book he write about, for example, that in the reality relatively moving frames aren't totally identical and so simultaneous events in one frame aren't simultaneous in a relatively moving other one.

At that from the fact of the equivalence of the frames at Galileo transformations nobody in those times suggested that there is no absolute "Newtonian" space, such inference doesn't, of course, follow from the fact that it cannot be detected by instruments. As well as when the problems, which raised because of the Michelson and Morley experiment result and of the fact that Maxwell equations aren't invariant at these transformations, were solved in the Lorentz theory [6], [7] by discovering of the Lorentz transformations; again, nobody, including Lorentz (which believed that the absolute Euclidian spacetime exists always, till 1928 [8]), didn't suggest the absence of the absolute space and time. It seems that just therefore Poincaré didn't exclude that the absolute space can be detected in some day [5]. Correspondingly Lorentz the temporal variable in the transformations understood as some "local time", which isn't the same as the absolute "ontological" time.

On another hand this problem was inessential for the conventionalist Poincaré, who knew that practically all Science is based on some conventions and so a next one practically doesn't change this situation.

However the transformations Egs.(1) and Eqs.(2) are principally different. First of all in Lorentz transformation some dependence between temporal and spatial variables appears. Besides the instruments in relatively moving frames are really different also, the rules in moving frame are really "contracted" and the clocks tick really slower, comparing with the absolute frame. Thus the frames are really, physically, different. And additionally, what is much more important, from the postulate that all inertial reference frames are totally and completely equivalent immediately directly and unambiguously follow any number of evidently nonsensical consequences, including for the case above, if, e.g., there are two relatively moving frames, then from this equivalence postulate unambiguously follows that, e.g., every rule in every frame is simultaneously contracted and non-contracted; and every clock ticks simultaneously slower and quicker [the well known "Dingle problem" in the

special relativity], what is evident nonsense; a number of other senseless consequences that follow from the postulate above are given in [9].

Nonetheless in 1905 the well-known Einstein's paper [10] appeared, where the equivalence of the frames above, and, correspondingly, the absence of the absolute space and absolute frames were postulated.

Further Minkowski [11] completed the formulation of the recently existent version of the "special relativity theory", where all variables in the Lorentz transformations were claimed as real points of real spacetimes and the formal mutual dependence of space and time was claimed as real also. That "solved" the Dingle problem, since in this case it is asserted, in fact, that every inertial reference frame have its own spacetime, and so there is nothing illogical in simultaneous existence of clocks, rules and observers which exist simultaneously in, in the case of two frames above, two different states, though this solution seems rather evidently questionable also: the Lorentz transformations in the SRT are valid in whole Matter's spacetime, so it seems as rather strange that there exist so spacetimes [and so differently transformed Matter] how many of reference frames exists.

Besides the other important incorrect postulate in the SRT that real Matter's spacetime is the imaginary, in fact, 4D Minkowski space, note also, that presentation of the Lorentz transformations as some rotations in the spacetime [as that in certain sense is applied in Eqs.(1) after formal replacing $z \to x', c\tau_b \to ct'$] is principally incorrect. In the reality can be any rotations in the 3D space, however any rotations of the temporal axis are principally impossible, in any cases all obtained coordinate systems must have the same $c\tau$ coordinate axis. That follows from that though the Rules/Possibilities "Space" and "Time" are rather similar, they are fundamentally different. Thus, for example, in a 2D space+1D time spacetime there are "purely spatial points" "t=0" on the (X,Y) plain and "purely temporal points" "x=y=0" on the t-axis. At any rotation of the system around the t-axis nothing changes, but at a rotation around some spatial; axis, the points of the (X,Y) plain.

From the senseless inferences above by proof by contradiction immediately follows the incorrectness of the postulate about the equivalence isn't and corresponding existence of the absolute spacetime and the absolute frames. As well as it is shown that the detection of the absolute motion, in contrast to the Galileo transformation, is possible and can be made already now [12].

3 Returning to the "conventions problem"

Returning to the using of convention, note additionally a few points, when conventions relate to the notions "real", "unreal", and "adequacy".
The x_b and $c\tau_b$ values in Eqs.(1) are real; and the results of measurements of these [and of energy, momentums, etc. as well] values by using clocks and rules of an absolute frame are real also; and so are totally adequate to the reality.

But in any other, i.e. moving with some non-zero absolute spatial speed, inertial reference frame the measured values of the physical parameters differ from the real, i.e. that are measured in an absolute frame, values. So they are unreal and all are used in physics only by a convention.

However, because of that Matter's laws are highly symmetrical, and so the relativity principle works well, the Lorentz transformation form a group [relating to the frames speeds], and so any physical situation always can be reduced to the case, when it is considered in an absolute frame, where the equations of motion and values of adequate parameters' values are obligatorily real and adequate,

the equations of motion and physical parameters, which are measured/used at solving of physical problems in non-absolute frames, turn out to be, though being unreal, again adequate; so that using measured unreal speeds', energies', etc. values allow, at elaborating of physical interactions, to obtain real and adequate to the reality results.

But, again**,** that is true only if the studied interactions happen in rigid systems of bodies. If a moving system consist of free bodies, a spatial acceleration of the system isn't accompanied by rotation of whole system in the $(X,c\tau)$ plain and Eqs.(1) for points of the system's objects aren't valid; all, what remains, is decreasing of the objects' coordinate time speeds and corresponding slowing down of their internal processes.

Any real non-absolute reference frame [and in this point such frames differ from absolute frames, any of which is valid in whole 4D sub-spacetime], is limited by corresponding rigid system. From what follows, for example, that the SR's formalism, where the Lorentz transformations are totally equally valid in any/every inertial reference frames and in whole Matter's spacetime isn't adequate to the reality.

Note, besides, that the notion "a rigid system" above isn't completely correct, it is too strong. All the above is true also for systems of bodies, if interactions between the bodies are strong enough and so at changes of the systems' speeds by some [correspondingly] small impacts so, the systems rotate in the 4D sub-spacetime as a whole as that the unique body above makes.

An example of such system is the system of GPS satellites, which, even if didn't compose with Earth, because of the gravity, a rigid system at launching, after arriving the work points on the orbit can be, and are in the reality, set forcibly in "correct" 4D sub-spacetime points by corresponding synchronization their clocks with the clocks on Earth in accordance with the Lorentz transformations. Impacts on the clocks on their work orbits are weak enough comparing with the gravity force, and this force rather effectively rotates the system "Earth – GPS satellites", when Earth moves along rather complex trajectory [around Sun, with Sun around the Milky way center, with Milky way somewhere in the absolute 3D space], in the absolute $(\vec{R}, c\tau)$ plain so that this system can be really considered as some "system at rest" and, correspondingly, the GPS systems are now very effective systems at objects positioning on Earth.

Thus Minkowski formalism, in spite of that it based on evidently incorrect postulates, in practice turns out to be very effective tool at elaborating of many physical problems. The informational model, which is used here, in such [practical] cases changes practically nothing; at least till now. However the model, first of all, removes from physics rather strange situation, when in this science there exist a theory, which is based on rather strange postulates, and from which illogical and

senseless consequences follow, including the “relativistic effects”, and determinate the limits of applicability of this formalism.

Besides the proof that Matter’s spacetime is the absolute and Euclidian, in contrast to used now unlimitedly in physics unreal Minkowski and pseudo Riemannian spaces, seems is rather important since limits applications of corresponding formalisms; and seems as rather predictable that when instead of studying of some transformations of the spacetime physicists will study the really existent four fundamental Nature force “Gravity”, what will result in more adequate to the reality scientific inferences about the external World.

References

[1]“The information as Absolute” https://zenodo.org/record/268904/files/Shevchenko_Abs_15_ar_both_1-17.pdf DOI 10.5281/zenodo.268904 2011-2017

[2] Space and Time http://arxiv.org/abs/1110.0003 Apr 2013

[3] “The Information as Absolute” conception: space and time http://viXra.org/abs/1711.0238 **DOI:** 10.13140/RG.2.2.12789.06887/1

[4] The Informational Conception and Basic Physics http://viXra.org/abs/1503.0077 2015 DOI 10.5281/zenodo.16494

[5] H. Poincaré Science and Hypothesis (1902) (New York: the Walter Scott publ.,1905 p. 171)

[6] Lorentz H. Electromagnetic phenomena in a system moving with any velocity smaller theh that of light. Proc. Acad. Sci., Amsterdam, 1904, v 6 p.809

[7] H. Poincaré (June 5, 1905) “Sur la dynamique del’électron” Comptes Rendues , 1905, V 140, p1504

[8] Keswani G. H. Arising of the theory of relativity. The British journal for the philosiohy of science, v XY No 60 p. 286-306, v XY No 61 p. 19-32. 1965 In: Принцип относительности Москва, Атомиздат 1973 p.244 –270

[9] “The notion “speed” and the Lorentz transformations” http://vixra.org/abs/1705.0366 DOI:10.5281/zenodo.802365 2017

[10]Einstein, A. (1905), Zur Elektrodynamik bewegter Körper. Ann. Phys., 322: 891–921. doi:10.1002/andp.19053221004 received 30 of June 1905

[11] Minkowski H 1952 Space and Time. Lorentz, Hendrik A., Albert Einstein, Hermann Minkowski, and Hermann Weyl, The Principle of Relativity: A Collection of Original Memoirs on the Special and General Theory of Relativity (Dover, New York 1952)

[12] “Measurement of the absolute speed is possible?” http://viXra.org/abs/1311.0190 DOI 10.5281/zenodo.48709 2013-2016