Cosmic horizons or dead end of global civilization on Earth?

Boris M. Levin
Semenov Institute of Chemical Physics,
Russ. Acad. Sci., Moscow (1964-1987)
In cooperation with Konstantinov Institute of Nuclear Physics,
Russ. Acad. Sci.,
Gatchina (St. Petersburg) (1984-1987),
Ioffe Physical Technical Institute,
Russ. Acad. Sci., St. Petersburg (2005-2007).
E-mail: bormikhlev@yandex.ru

QFT (Standard Model/SM) excludes the observation of tachyons — a “particles” with a speed exceeding the speed of light. We substantiated this prohibition by the fact that the physical observer/PhO (a representative of the species Homo sapiens — his rational sphere that controls causal relationships) is “inside” the Light Cone.

Na-gaseous neon and two detected anomalies of β^+-positron/ β^+-positronium annihilation in gaseous neon (1956-USA/^{64}Cu; 1965/USA; 1967, 1987-Russia/^{22}Na; 1975-England, Canada/^{22}Na), as well as the excess of the rate of self-annihilation β^+-positronium (USA-1982-1990/^{22}Na, ^{68}Ga; **2003?**), established in precision measurements, in comparison with that calculated in quantum electrodynamics/QED — this cannot be understood without complementing the QFT paradigm by including physical space-time of the macroscopic, two-valued ($\pm$) region “outside” the Light Cone (topological quantum transition, “local” causality) in the presence β^+-positronium, as an analogue of the formalization of the status of physical observer/PhO.

dark energy/dark matter is presented. The mechanism of the interaction of dark matter with matter is clarified.

social and civilization ones, up to the development of near (solar system) and deep space (exoplanets).

topological quantum transition in the final state of β^+-decay (all decays of β^+-isotopes of the type $\Delta J^\pi = 1^\pi$) into a subject-close (“local” causality) due to the postulation of analog status PhO by β^+-positronium — through its oscillations in the looking glass (in the space-time a of macroscopic, two-valued atom of long-range action/ALRA with ALRA nucleus), where the irrational sphere of PhO (sub-consciousness, super- consciousness) is “localized”.

Oh, how much of wondrous discoveries

Enlightenment Spirit preparing for us

, the paradoxes’ friend,

And Case — the Got of all inventions.

polarization “West-East” and transform it into a paradigm of all-round cooperation between states and peoples.

the absence of visible traces of the activities of alien civilization that should have settled throughout the Universe over billions of years of its development.

pro et contra paradox, let us dwell on the idea that humanity and its SCIENCE have already reached a level that allows us to think about our own expansion into the distant Cosmos [1].

Miguel Alcubierre himself admitted in an interview that every day his skepticism about flights at FTL is growing. If it is possible, then not earlier than in a few centuries” (from the Internet).

GR and QFT, all models of superluminal motion in space-time are compared — “wormhole”, “Alcubierre bubble”, “Krasnikov tube”, etc.

the construction proposed by him contained tachyons. This made it somewhat meaningless...” [2].

$^{22}Na(3^+)\xrightarrow{\beta^+,\nu}{}^{22*}Ne(2^+)$-gaseous neon $\sim 9\%\,{}^{22}Ne(0^+)$ **was confirmed:** when comparing the time spectra of neon simple depleted in the ^{22}Ne isotope (from 8.86% in a simple of natural isotopic composition to 4.91%), “shoulder” and the intensity $\mathbf{I}_2$ of the orthopositronium component of the lifetime spectrum increases by almost **2 times (**$1{,}85 \pm 0{,}1$)% (Russia, **1987**).

β^+**-**positron/β^+-

positronium [4, item 5], **it is necessary to expand the modern** SM, **since according to the** SM **the isotope effect** [4, item 6] **is vanishingly small**: $\mathbf{10^{-7}\text{-}10^{-6}}$.

ALRA$^{(\pm)}$ instead of the counterproductive phenomenology “tachyon” [5].

ALRA$^{(\pm)}$-model of the new (additional) physics “outside” the Light Cone [5,6] and the “Alcubierre bubble”. In this case, it is assumed that both hypostases of ALRA$^{(\pm)}$ (dark energy/dark matter) are realized in warp-motion: the dynamics of warp-motion as a generalization of Huygens Principle (space-time realization of dark energy) and mentality of astronauts (dark matter, as a realization of rational and irrational spheres of Homo sapiens [7]).

General Relativity/GR [1] is discussed, but also the possibility of getting out of the stagnation of the SM (since the mid-1970s) on the basis of experiments and phenomenology, i.e. the possibility of a breakthrough in PHYSICS to a unified description of QFT and gravity (to the Theory of Everything).

universal expansion is CULTURE:

Until now, there has never been a rational self-study of human culture on our planet, just as before the time of Galileo there was no natural science objective in our sense. <...>

, the situation of humanity is now more dangerous than it has ever been in the past. But potentially the thinking acquired by our culture **thanks to its natural science** (emphasized — B.L.) gives it the opportunity to avoid the death that befell all the high cultures of the past. This is happening for the first time in world history”.

self-study of human culture” is also indicated: to overcome the “**Eight deadly sins of civilized mankind**” — **Overpopulation**; **Devastation of living space**; **Running a race with yourself**; **Heat death of feeling**; **Genetic degeneration**; **Break with tradition**; **Indoctrination**; **Nuclear weapon**.

SM, special attention needs to be paid is indoctrination.

is understood as the purposeful and conscious instillation of certain values, political ideas, symbols, norms of behavior, etc groups of people, that is indoctrination is suggestibility, susceptibility to fashion, stereotypes.

never before have manipulators possessed such a developed advertising technique, built on scientific experiments, never before have they had such ‘a lucky mass media’” [9, p.51]. <...>

... in the natural sciences. It would be a great mistake to think that professional scientists are not affected by the cultural diseases that are the subject of this work. <...> “Big Science” is by no means a science about the greatest and highest things on this planet, not a science about the human soul and human spirit, it is primarily and exclusively that which brings a lot of money or a lot of energy, or that which gives great power ... <...> The particular danger of fashionable

indoctrination in the field of science is that it leads away the desire for knowledge of too many, although, fortunately, not all modern naturalists are in the direction directly opposite to the true goal of mankind, namely the better self-knowledge of man" [9, p.53].

Resolution of the Orthopositronium-Lifetime Puzzle" (2003), in which it disavowed the results of its previous precision measurements (1982-1990), which came into conflict with the theory (quantum electrodynamics), and thus "closed" the problem for the scientific community.

new (additional) physics "outside" the Light Cone [5-8] have not yet reached the experts.

the truth does not depend on voting. Truth is not a democrat" [10].

, **and there not be any reasonable judgment that excludes** "**quiet physics**" **from the search for ideas that will lead fundamental physics out of stagnation**, since on the basis of phenomenology [5-8] even a substantiation of the program of increasing the energy of the proton-proton collider to 100 TeV [8].

ALRA$^{(\pm)}$ ($U^{\pm}$), as the phenomenology of a new (additional) physics "outside" the Light Cone in the "resonance conditions" of the final state of β^+-decay, is exactly what is being discussed as the "Alcubierre bubble" with commensurate correspondence between the vacuum-like matter (U^+) and exotic matter (U^-).

exoplanets program has been implemented in the observations of astrophysicists, and at the beginning of the third millennium, the Poincaré hypothesis (the Poincaré-Perelman theorem) was proved.

Science is not a democrat:

[5-8].

Alcubierre M. The warp drive hyper-fast travel within general relativity. Classical and Quantum Gravity, v.11(5), p. L73, 1994; http://arXiv.org/abs/gr-qc/0009013

Krasnikov S.V. SPACE-TIMES WITH NON-STANDARD CAUSAL PROPERTIES. Abstract of dissertation by Doctor of Physics and Mathematics Sci., St. Petersburg, 2014. In Russian.

Levin B.M., Kochenda L.M., Markov A.A., and Shantarovich V.P. Lifetime spectra of positron (^{22}Na) annihilation in gaseous neon of different isotope composition. Sov. J. Nucl. Phys., v.45(6), p.1119, 1987.

Levin B.M. A summary of the phenomenology of new (additional) $G\hbar/ck$ -physics “outside” the Light Cone. EURASIAN SCIENTIFIC JOURNAL, № 3, 2021, p.16. In Russian, www.JournalPro.ru

Levin B.M. Atom of Long-Range Action Instead of Counter-Productive Tachyon Phenomenology. Decisive Experiment of the New (Additional) Phenomenology Outside of the Light Cone. Progress in Physics, v.13(1), p.11, 2017.

Levin B.M. The path to the star: unrealizable mathematics of general relativity or future space technologies of new physics? In Russian.

http://science.snauka.ru/2015/06/10147

NEW ASPECT/, “LISS”, St. Petersburg, 2002. In Russian.

Will the collider of the future be the only tool for confirming supersymmetry and extending the Standard Model? On supersymmetric β^+-positronium as an analog formalization of the status of a physical observer. EURASIAN SCIENTIFIC JOURNAL, № 2, p.39. In Russian. www.JournalPro.ru