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Quantum Gravity-The Starting Point of Natural Physics is Quantum Gravity

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Research Article

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ABSTRACT

The majority of scientists consider current physical theory to be only effective knowledge.

The need for a new physical theory is increasingly being felt. We have managed to develop a comprehensive, basic theory that supports current physics but also requires re-evaluation (we achieved this success after about 30 years of work). The presentation of the entire theory obviously requires a different forum. To understand the proof of the current dissertation, it is not necessary to know this 11-dimensional, Elementary-Natural-Physical-System Theory since here, we only raise and prove such basic questions regarding gravity that knowledge of the basic chapters of the theory of gravity is sufficient to understand it. Therefore, briefly and comprehensively present the theory of quantum gravity here. Additionally, regarding the Lorentz transformation, which is, after all, an important starting point for special relativity, Author will present some chapters requiring re-evaluation based on the operation of quantum gravity (derive this change from an astronomical and cosmological perspective).

Regarding the shortcomings of the theory thus far, for example, the hierarchy problem is of outstanding importance and appears at several levels, for example, in terms of the weakness of gravity (proportion difference of 10^{-17} orders of magnitude) or in the crisis caused by the small mass of the Higgs boson. This significant challenging problem, in quantum gravity theory, immediately disappears, and gravity, in accordance with its natural existence, becomes a potential produced by elementary oscillators.

However, we discovered and developed the elementary-natural-physical system of quantum gravity: In our physical model, this 11-dimensional, elementary-natural-physical system. According to our recognition, the hard and strict matter, the Earth and the universe, despite the existence of invariant mass, is only the extradimensional virtual-wave product of the gravitational states of the elementary oscillators.

In this theory, quantum gravity is the starting point, the basic element of physics, and current effective theories can be derived from this starting point, in a non-contradictory form; therefore, the fundamental problems of current quantum theory and the relativity disappear completely, e.g. there is no hierarchy problem.

Keywords: Standard model; Higgs boson; Potential eigenvalue; Frequency; Quantum gravity theory

INTRODUCTION

Author argued that the current interpretations of gravity and the problems associated with it, including the lack of a theory of quantum gravity, are the result of preconception based on historical interpretation.

If we eliminate this error and set things right, the problems of quantum theory will disappear, and quantum gravity will immediately become understandable (as a result of 30 years of research, managed to discover this and develop a comprehensive, new theory on the subject: The 11-dimensional, Elementary–Natural–Physical–System theory).

Note: In the following, indicated the gravity of the new theory, quantum gravity, in capital letter to distinguish it from the traditional concept of gravity, this will be Gravity [1].

The structure of the dissertation

- Summary abbreviated description: An overview of the entire thesis topic (prepared for quick familiarization).
- Detailed, longer description, including the necessary explanations (we will publish this chapter separately).
- Detailed description of the entire 11-dimensional, Natural-Elementary-Physical system, our universe: This description, due to its length, is not included in the thesis; it forms a separate derivation [2].

First, we would like to remind the reader of the unavoidable frameworks of observer measurements (these circumstances can even create systematic errors: Because physics limits our possibilities).

In physical research, it must also be taken into account that, according to measurement theory, the physical state cannot be known directly. Therefore, in the interpretation of objective information [3], the observer only receives information that can be derived from the states of the measuring instruments, so he does not perceive the original particle state (the observer evaluates this information, signal-subjectively: Added that this last remark is not a physical statement, so author must say that whatever this part of the statement means).

This paper provides a description of the basic parameters of Elementary–Natural–Physical systems theory.

Now is the introduction of a new physics chapter evaluating the natural-physical reality, the universe, in the way discovered; that is, from the point of view of physics, our known Universe is nothing more than an elementary-natural-physical system created according to the functioning of nature, which we have described in an 11-dimensional, extradimensional space-time model [4].

Author have developed the theory in approx 1000 pages of derivation: You do not need to know this in order to deduce the subject of the current thesis for you [5]. Nevertheless, author must present the basic knowledge to you, so the main components and characteristics of the system are as follows:

Zero-dimensional space (the past time-space sector): An element is a single r_n virtual measuring point as a virtual relative-location parameter. Abstractly, this is an x coordinate axis and in the series of x abstract axes, abstractly x and y dimensions can be taken [6]. Therefore, this parameter can be evaluated in a 2-dimensional way in an 11-dimensional system because a single virtual system-time parameter belongs to these two abstractly evaluated, virtual trajectory dimensions. The 2-dimensional evaluation can only be taken in a virtual trajectory; there is no such physical reality directly in space, because space is zero-dimensional [7].

Eigentime time-space sector: Through the τ_n eigentime–parameter, this directly ensures that the space is zero-dimensional. It creates one dimension, 1 eigentime parameter, for the space [8].

Future time-space (z: Abstract dimension connected to space):

- The gravity sector phase (a global variable that represents the z-dimension in a way connected to space) results in the gravity effect being connected to space, because only the gravity sector phase creates a space effect [9].
- **Preon-level sector phase (structural sector phase):** This phase has no dimension for the zero-dimensional space (only connected to the Gravity sector phase) [10].
- **Far-future sector-phase:** Has no dimension in space (only connected to the Preon level sector-phase).

Ancient past time-space (adds 6 time-space dimensions to space).

The entire time-space system is controlled by the external parameter time; in the time-space system, this is the Present: from the side of time-spaces, it is evaluable in 1 dimension, controlling the time- effect parameter [11].

MATERIALS AND METHODS

The direct elementary-physical structure is limited only by the Gravitational effect and space parameters. As expressed in current physical systems, this parameter is expressed at the Planck parameter level; this parameter ranges from 10^{-35} meters, 10^{-44} seconds. The zero-dimensional space consists of the r_n virtual measuring-point. This is point: An abstract point without extension and virtual metric=1 [12].

The sectors of the time-space system do not contain time; only geometric-dynamical virtual system-times and virtual eigen times, these imaginary system parameters can be taken instead of the time parameter [13].

Physical measurement is a super determined process in physical system that creates the basic steps of the existence of the universe at the level of elementary physics. For which there is a physical measurement, only that exists in a way that can be measured by the observer. Until physical measurement, we can assume the states of a superposition system in the future time space, exclusively for virtual trajectory analysis (see, in Feynman's path-integral definition of QED, where the theory was evaluated so that we cannot assume a realized physical state before the observer measurement) [14].

The result of the physical measurement in the gravitation sector phase is the potential of the virtual physical space point, which is the frequency modus of an elementary oscillator [15]. The potential, according to the spatial effect, appears in zero-dimensional space only as a frequency-modus eigenvalue, namely, in the case of the physical measurement (according to our physical model) [16].

Before the physical measurement, the elementary-physical relationships are written in a spatial manner:

$t_v * r_n / t_v = \hat{\mathfrak{f}}_n = \hat{\mathfrak{f}}_{n,e} = 1$ ($\hat{\mathfrak{f}}_{n,e}$ from the observer's point of view, abstractly: It can be a value of 0 or 1). Evaluated on virtual orbits, in an extradimensional sense, $\hat{\mathfrak{f}}_n$ can take on variable frequency modus, potentials [17].

In the case of physical measurement:

$r_n = f_{n,e} * c_{n,i}$ ($\hat{\mathfrak{f}}_{n,e} = 1$)

Therefore, in space, there is only an elementary potential eigenvalue; impulses, forces, velocities, or accelerations are not possible; and this is a stationary interval. The abstractions and interaction ideas developed thus far for momentum, impulses, and forces, the ideas connected to imaginary energies within the gravitational sector phase that do not appear in space, are not the direct object of physical measurement [18].

However, outside of elementary physics, these are correct parameters compared to their own boundary conditions. However, nature does not work like this: We have proven this, according to separate derivations [19].

Based on the above, the following descriptions are necessary for the derivations according to the purpose of the thesis [20].

Gravity is nothing more than a series of measurable and sometimes directly perceptible state changes that appear in nature, in the behavior of bodies (if we take into account the fact that space cannot be measured directly, only in a relational way) [21]. This concept is gravity, and therefore is very similar to the everyday, perceptible concept of time: Time manifests itself in a series of state changes (if we do not take the Einsteinian concept of time, but rather the quantum theory concept of time as our basis: Then time is not a measurable external parameter) [22].

Therefore, the first basic variable that people perceived since ancient times was gravity, although they did not know much about it theoretically: Therefore, they rather called the parameter that triggered the geometric-dynamical change time, based on naive perception.

Quantum theory establishes many new concepts and information (all effective theories until then, including classical relativity, are very significant within their framework conditions); however, what are the main conclusions in this regard?

In the development of physics, as paradigm theory grasped, continuity and developmental leaps alternately appeared. The new level of development in general did not at all make the physics of the continuous-precedence superfluous. Mechanics can still be applied within its own framework, just as the classical theory of relativity has not become superfluous, and could even remain a starting basic model in many areas. Another recognition is the thesis that appears in many articles that we do not need to and cannot directly produce the physical world from the small things in science: In many cases this is not the right method. Therefore, in terms of the natural foundations of physics, chapters of physical science dealing with more complex structures, e.g., the physics of condensed matter, can be described according to separate rules.

Based on the elementary physical theory, it is clear that separate rules describe the world that has been considered physical thus far:

- **Elementary physics and elementary physical laws:** The fundamental law is the law of least action, an elementary physical law discovered by us (Law of least action: Thus, starting with a capital letter, the law covering the entire 11-dimensional system, which appears directly in elementary physics as the law of least action, according to a separate derivation).
- **The creation and laws of complex structures and operations:** These structures and operations are not created by elementary physical laws, but by the rules of changes in complex objects and operations (these objects can be examined, basically, at the level of phenomena). These too are created by existing, real, objective laws: This part of the world, however, is not built up in an elementary physical way and is not directly of an elementary-quantum structure. Because these laws, dealing with populations, are, in an abstract sense, statistical laws (they are currently linked to the physical, chemical, and biological chapters in the division of science).

Based on elementary physics, in an 11-dimensional physical system, quasi first, large complex objects are created in complex law systems (according to a time control); then, through the Gravitational effect, elementary physical states are formed. However, complex structures, in the physical system, only have an "information structure" (they are not made of elementary physical potentials).

The foundations of quantum mechanics and quantum theory change if we apply the elementary-natural-physical system model (which includes the discovered CPT symmetry breaking *i.e.*, the violation of the 4 pulse invariance and its explanation) and the abstraction is strictly tied to the new elementary-physical conditions.

We have also proven this theorem in the framework of the 11-dimensional physical system description; experimentally, we present this theorem in detail in the CPT symmetry breaking chapter.

The development of quantum theory was a great leap, although initially and in many respects even now, this model was also attached to physical antecedents, even in areas that limited discoveries. We cannot forget that the antecedents were also, for example, the initial quantum picture: It was formed on the basis of direct human world views-perception and, on this basis became a novelty abstraction attached to the antecedents.

However, what, then, can we consider as knowledge belonging to the real–natural–basic level of physics? Even at the current level of science, many fundamental questions remain unanswered, and it is worth starting the analysis again, starting from the starting points: That is, it is worth examining the possibility of "reconstructing quantum theory".

Regarding the shortcomings of the theory thus far, for example, the hierarchy problem is of outstanding importance and appears at several levels, for example, in terms of the weakness of gravity (proportion difference of 10^{-17} orders of magnitude) or in the crisis caused by the small mass of the Higgs boson.

This significant challenging problem, in quantum gravity theory, immediately disappears and Gravity, in accordance with its natural existence, becomes a potential produced by elementary oscillators. Or, based on the effect on space, it becomes a unit-frequency modus eigenvalue in space (potential eigenvalue).

For example, the hierarchy problem is of outstanding importance and appears on several levels, e.g., as in the case of gravity, in terms of its relative weakness, or in the crisis caused by the small mass of the Higgs boson.

Due to the familiarity of the above starting topic, Author will only provide references here at a summary level (in the very large and specialized scope of the original basic works, the main lines of the problems do not appear directly). Basic references for this section:

https://hu.wikipedia.org/wiki/Kvantumgravit%C3%A1ci%C3%B3

https://www.space.com/quantum-gravity.html

Based on the above, the particles connected to the stable particles of the past time-space in the gravitational sector phase of the Future time-space, already without invariant mass, charge and spin, appear in the global variable, the virtual gravity-wave (in a way that can be interpreted on a geodesic virtual orbit), only as quasi energy, in potential packets, in the form of frequency moduses. Therefore, these are also only potential momentum variables of the stable particles of the past time-space; these are strong-effect bosons (therefore, in elementary physics, these are neutrinos in all cases). These strong-effect bosons, in the space effect, are created by the elementary oscillator of the virtual physical space point.

In the spatial effect (according to our physical model), in a way that can also be interpreted on a virtual trajectory, in the zero-dimensional space of the past-time space, in a way that belongs to a physical measurement recorded on the virtual trajectory, the physical parameter and dimensionless potential eigen value-appear.

Only that potential, frequency modus can be a phenomenon-base in our universe, *i.e.,* the phenomenon observed in the observer measurement (the latter measurement is subject to measurement theory), which has undergone physical measurement.

Since there is no measurement without measurement, the universe of observers can only be formed in this way; therefore, the observer concept cannot be a direct elementary-physical concept (this is physical reality: Do not deal with other aspects, since only deal with physics and, in an extended sense, with the 11-dimensional, elementary-natural-physical system in a way related to elementary-physics).

However, we cannot expect Newton and Einstein to recognize the elementary-natural- physical framework of the world in that era. However, we discovered and developed the elementary-natural-physical system of quantum gravity: In our physical model, this 11-dimensional, elementary-natural-physical system. According to our recognition, the hard and strict matter, the Earth and the universe, despite the existence of invariant mass, is only the extradimensional virtual-wave product of the gravitational states of the elementary oscillators.

This product, *i.e.,* the universe in Gravity, is completely recreated every 10^{-44} seconds, again and again, and enters the current geometric-static state of the virtual time-quantum (and after that, outside the given geometric-dynamic-interval). This state quasi disappears: We cannot add any temporal relation or geometric-dynamics to this process, because the existence of the world is limited only to existence, there is no attribute of nonexistence.

We have proven in detail and exhaustively that the world, at the elementary particle level, consists of nothing but super determined unit-energy moduses created in physical measurements of gravitational virtual trajectories. In the zero-dimensional space, the unit-energy modus is nothing more than a potential eigenvalue interpreted at an effect point r: Because space is then zero-dimensional, there are no basis parameters for it from physical parameters: $r_n=M_n*1/1=f_n$ (there is no mass and s/meter and t/sec physical parameter possibility in space, which is, in a zero-dimensional way, a scalar mathematical-point).

$r_n=\hat{f}_{n,e}*c_{n,i}=M=@_n$ (in the case of elementary particles of matter M=m: m-the measure of the invariant mass in zero-dimensional space).

r_n: The virtual measurement point of zero-dimensional space (the point of action of the gravitational virtual trajectory: r).

$\hat{f}_{n,e}$: Spatial eigenvalue belonging to the frequency-unit operator (in physical measurement its value is 1).

$c_{n,i}$: Frequency-modus generating multiplier (scalar multiplier: The modus unit, the frequency unit multiplier, generates a quasi-Higgs boson modus)

M: Is the frequency unit-modus, and is also the potential, and thus the measure of the rest mass. Within this, m: Is the designation of the invariant mass consisting of integer-potential units. However, an integer-modus invariant mass is possible only in the case of material-particles. In the case of photons, the invariant mass will be only a single fractional potential unit, which is therefore only an imaginary mass. However, in the case of photons, there is also a frequency-modus, quasi impulse-potential modus. If we use the designation M-it includes both.

$@_n$: The abstract measuring point, which is only to be interpreted in physical measurement.

Physical measurement: A series of elementary natural physical steps, an extradimensional process that allows a quantum to become physically real in an extradimensional way.

Observer measurements can only be made on the basis of elementary physical measurements. Thus, from the multitude of elementary physical measurements, from this objective physical basis, the universe serving as the basis of perception is physically realized for observers.

Based on our theoretical and experimental results, we developed a physical model for direct elementary, natural physical structure and operation, the physical system that cannot be further decomposed, and applied a mathematical description. At this level, due to the reductionist approach, the basic components of the theory are greatly simplified, and the basic problems of the previous theory are automatically solved (however, this has added many new areas to the entire system).

In this theory, quantum gravity is naturally part of the theory; there is no hierarchy problem and the theory is two-level.

On the one hand, in elementary physics, the theory is directly quantum description. According to the discoveries, the state attached to spatial quanta is a frequency unit modus, the potential. Moreover, there is no direct particle duality in space; the theory is based on the unity of local and nonlocal behavior, and the theory is relativistic but has a super deterministic output.

The fundamental part of the theory is the definition and description of black matter and black energy; this is also necessary; otherwise, the universe would not be as we know it.

On the other hand, the theory also covers the laws of structures, complex objects and object systems in an 11-dimensional, extradimensional system. The currently known, mathematically-based, computational theories address the derivation of the effect of the laws that shape these within a mathematical framework. Basically engaged in the research and development of elementary physics, the new physics chapter.

The foundations of quantum mechanics and quantum theory change if we apply the elementary-natural-physical-system model (which includes the discovered CPT symmetry breaking *i.e.,* the violation of the 4 pulse invariance and its explanation) and the abstraction is strictly tied to the new elementary-physical conditions.

RESULTS AND DISCUSSION

We further explain the extradimensional, time and time-space universe of the 11-dimensional, elemental-natural-physical system.

According to the physical foundations given in the new description:

- Based on the current Big Bang model, we can conclude that the universe is realized in the extradimensional physical structure we have discovered. Namely, in an 11-dimensional, extradimensional, time-space system (the mention of time-space is not a mistake, but a change required by the natural structure). Therefore, the traditional space-time-continuum model does not give a complete understanding of the physical foundations of nature, so the space-time model is only a narrow abstraction, therefore space-time cannot be a closed system. Within the 11-dimensional framework, the effective space-time model is only an open, externally controlled, physical system model that must be transformed according to the natural foundations.
- In this case, the realization of the universe, in this quantum mechanical external space (this is the traditionally taken 3-dimensional space of the physical universe, or space time if you like), is a process of generating matter and energy.

  This happens again and again continuously, but this is only the quasi-Big Bang.

  This process takes place in relation to the entire universe according to the rules of the 11-dimensional physical system: Every 10^{-44} seconds, that is, in every $t_v=1$ virtual time quantum.

Therefore, for our known, traditionally understood universe, physical nature provides energy, produces energy and creates matter in an 11-dimensional system; however, for example, it continuously violates the laws of energy conservation and 4-pulse invariance. After all, in this new structure, the three-dimensional space is an open system, within the 11-dimensional continuum; that is, in the 11-dimensional physical system, energy conservation is not violated.

This is the high-energy domain, the Planck domain; however, this level is not a space, but rather a time-space domain. Therefore, we will continue, in an abbreviated description, the presentation of the basics of natural physical functioning: This is the 11-dimensional, elementary–natural–physical system.

The observer does not directly perceive the physical universe (and is not in it: Whatever this statement is based on physics but not physical means; it can be said that there is no observer possibility in elementary physics).

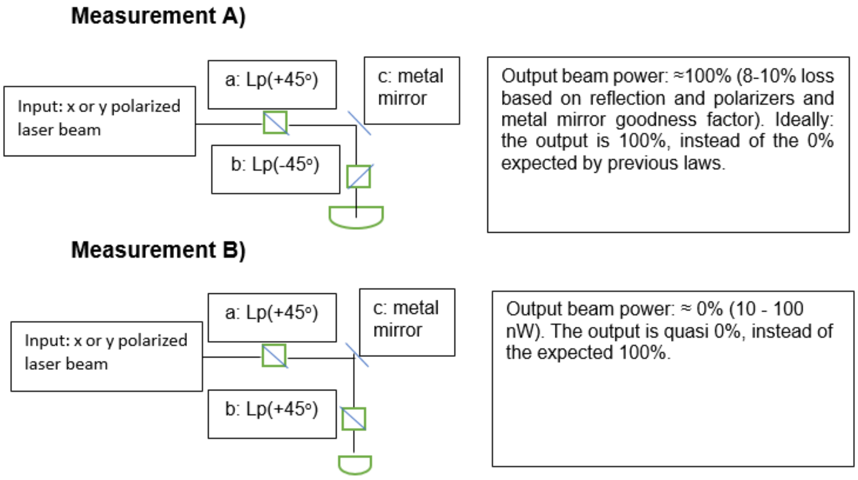
However, we must also say based on the examples that we have to separate fundamental physics from the world of the observer's sensory perceptions. This is especially true in the case of gravity: Current physics does not describe the gravitational structure or operation of nature, because it takes place entirely in a quantum gravitational way.

Based on such measurable differences, according to experimental measurements, we can directly prove that the current theory does not describe physics in a complete and exhaustive way. Namely, the CPT symmetry breaking that discovered, performed experimentally and derived in the proof, also proves this: because this measurement overturns a fundamental physical statement. Namely, the continuous symmetries of nature, the law of 4-pulse invariance, cannot be valid in the 4-dimensional physical framework that has been generally applied thus far.

CPT symmetry breaking

Measurement description: A polarized beam (λ=532 nm) was introduced into the following laser optical experimental setup and the output was measured (Figure 1).

Figure 1. Sketch of the measurement set-up.



If the linear polarizers (L_p) are placed in a straight line (without a mirror) in a cross-polarized position, we always obtain the usual zero (near-zero) output power. For any other polarized direction (not I+45°> or I-45°>), with the appropriate cross-polarizer inserted (with or without a mirror), the output equals zero (expressed in the ideal case). In the experiment:

I+45°>+I-45°>: Emphasize that this linear-superposition state does not exist in the experiment.

Because < a I b >=0, since the input was set to one polarization (excluding the other)

By placing a metal mirror between the crossed polarizers and creating an input state of I+45°>=1, the output is I+45°>=I-45°>=1. Based on the current space-time theory (commonly used: 4-dimensional space-time, closed system case), symmetry preservation and energy conservation, the above result assumes the entry of a particle or free field, e.g.,

I+45°>=1, → 1-1=0 és 0+1=1 → I-45°>=1: Quasi excess energy enters

I-1I+I1I=2 → 200%

This is an anti-unitary event.

Emphasize that my discovery is not the measurement of the phenomenon but rather the evaluation of CPT symmetry breaking and the derivation of the corresponding proof based on the measurements.

Based on our experiment, we started from the classical plane wave approach in the proof.

$$\vec{E}(z,t) = \begin{matrix} ex \\ ey \\ ez=0 \end{matrix} \quad e^{i2\pi(z/\Lambda n)-t/T)} = \vec{E}(z,t) = \begin{matrix} ex \\ ey \\ ez=0 \end{matrix} \quad e^{i(kz-\omega t)} \rightarrow e^{i(kz-\omega t)} \text{ let it be } e^{\phi}.$$

$$\vec{E}(z,t) = \begin{matrix} ex=[1,0]*c1 \\ ey=[0,1]*c2 \\ ez=[0,0]*c3 \end{matrix} \; *e^{\phi} \qquad c_i=c_1,c_2,c_3 \; i=1,2,3.$$

The linear coefficient c_i is the scalar multiplier belonging to the stationary action point r_n(r_n: Zero-dimensional, virtual measurement point) and is referred to later by an identical first index: $r_n \rightarrow c_{n,i}$.

We extend this initial content to the complete solution: We perform quantization, introduce the associated uncertainty relation, and implement the transition to the relativistic solution: We assume our physical model according to the first axiom of quantum mechanics and the state function Ψ (we also take into account the other axioms). We introduce the dynamics connected to QED. Considering the previous physical theory, we start from scratch (in the so-called high-energy range of physics, the Planck range); thus, we leave the previous framework.

This approach is necessary because the current theory cannot interpret the given experimental result or quantum gravity in a relevant way. Therefore, we must first examine the possibilities and reasons.

Author also considered the general solution applied to spins; thus, for the elementary-physical, physical measurements, he took the unit eigenvalues and the frequency modus

$r_n=\hat{f}_n=\hat{f}_{n,e}*c_{n,i}=f_n$ spatially interpreted (but depending on the purpose of the investigation, in the observer abstraction, $\hat{f}_{n,e}=1$ or 0 can also be related to the examined particle; then fn is also considered zero related to the given examined particle, however, in an elementary physical way, a zero value is not possible in physical measurement).

$\hat{f}_{n,e}$: Spatial, scalar, frequency unit-operator, for characterizing the states up to the physical measurement (before the physical measurement: the operator of the nonspatial potential state, $\hat{f}_n \neq f_n$ and in space then $\hat{f}_n=\hat{f}_{n,e}$).

In our case, the linear coefficient $c_{n,i}$ is a positive integer eigenvalue multiplier in the physical measurement. We will introduce the "description of the wave property" separately through the interpretation of the wavelength in elementary physics; for this purpose, we will also use a superposition scalar characterization, which gives the extent of the time-space reaction range (in space, at the elementary level, the wavelength cannot be interpreted directly, but based on the virtual metric, it is quasi always=1).

Introduction to the basics of mathematical abstraction and mathematical structure related to the physical model.

- The model of the elementary-natural-physics system is implemented in 11 dimensions (related to the physical operating conditions of nature): The dimensions are grouped in physical sectors, in some cases, according to our physical model, sector phases can also be found in these sectors. Of these, the direct elementary-physical sector phase: Is the gravitational sector phase and the zero-dimensional space of elementary physics is also an elementary physics phase.

  Our abstraction follows the structural and functional structure of nature. The system is built similarly to supersymmetric theories, but based on natural physics, we have developed them in a structure and dynamics that are significantly different from them, so that we can follow the natural framework.
- The classical, semiclassical gravity and quantum theories thus far are based on space time as a starting point; it is impossible to follow this structure at the physical model level, because the direct geometric solution (Einstein tensor or equations), according to our proof, cannot be an elementary–natural–physical model directly.

- Based on our theoretical foundation, we connect the structure of the elementary-physically based universe to the zero-dimensional space, the fundamental factor of physical measurement (in the universe, physical measurement is a case of realization and there is no possibility of measurement without measurement in this either). The 11-dimensional system can do anything, but the observer can only perceive the universe through the statistics of physical measurements, based on the observer's measurements. Time, even according to current quantum theory, is an unmeasurable, external parameter: because there is no time at all in the 11-dimensional system. Only the time effect reaches time-spaces, the time effect is a controlling parameter (but it does not reach space directly).

  In the 11-dimensional system, the time effect controls the time-space sectors: Their operation does not take place according to time but according to geometro dynamic parameters (we often take these within the framework of virtual system time or virtual eigen time).

  Time, according to its own internal relations, from the side of space and the physical system, is an uninfluenceable, internal quantum mechanical degree of freedom. Time, internally, is not a physical sector, not a mathematical sector and thus not something systemic; *i.e.,* externally it cannot be a sector either.
- Time directly affects time spaces, but it is impossible to provide physical feedback to time (time does not directly affect the gravitational sector phase and thus space). The time, the external time factor of the universe, is connected to our universe; we call this the present. The present, from the Newtonian present, is distinguished by the capitalization, this present, the own-time of our own universe.

  The present affects the future time space, but only indirectly affects its gravitational sector phase, which is considered 1 physical dimension to the space (this is the dimension of gravitational potential). The present (we have named the time parameter of our own universe, arbitrarily; this is the present parameter, our own time), exerts a time effect also the 6-dimensional time space (also known as this ancient past time space: If we group the time spaces according to the quasi-geometro dynamic order of the time spaces (but only the gravitational sector phase has an effect on zero-dimensional space). The time-space sectors are in a geometro dynamic relationship with each other, realizing a quasi-time-based physical separation: Ancient-past → Future past time-space connection. However, this quasi connection does not express a process connection from the side of the present, since the present continuously affects all of them. Therefore, this sequence of naming timelines does not express cause-and-effect connections either (compared to the Present, quasi everything happens at the same time, the conditions of which can be fulfilled based on completely separate, virtual, geometro dynamic system times).

Based on the elementary-natural-physical system, according to our new physics-physical model, all the characteristics and definitions had to be renewed. For example, the concept of measurement (observer measurement) must also be defined as an objective, physical-measurement concept. In zero-dimensional space, due to its zero-dimensional nature here is no interaction. The interaction abstraction of traditional models no longer works here, there is no such abstraction option. However, for observer measurement, only physical measurement can ensure physical reality (physical measurement, a detailed description of which is not given here). We also know that measurement without measurement does not exist. Therefore, in observer measurement, physical reality can only appear based on the detection of particle multitudes realized in physical measurements.

According to our model, the space-like result of the physical measurement will be the eigenvalue of an extradimensional, global Gravitational change that does not occur directly in space. In physical measurement, on a virtual trajectory, individual points of abstractly interpreted space come into contact with each other through time dilation (later derivation).

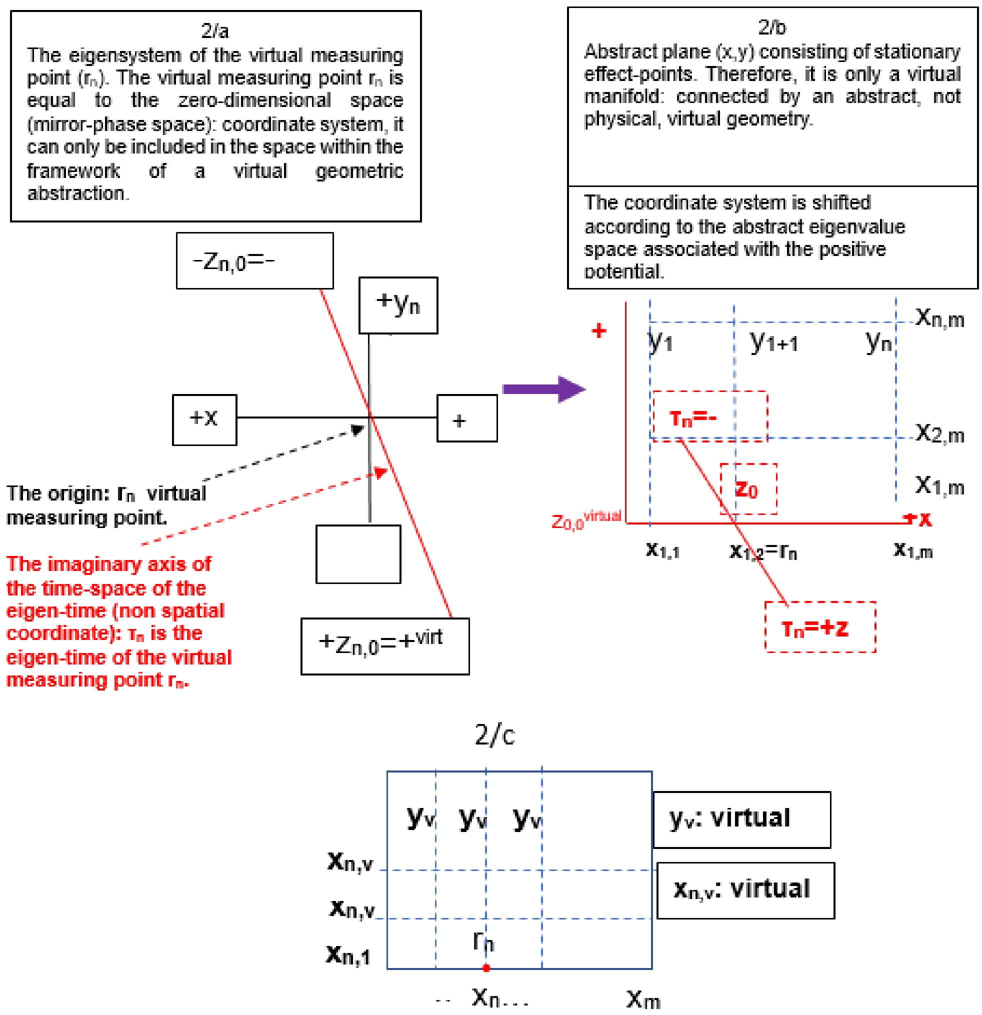
Nature created the potential change associated with physical measurement in the gravitational sector phase (in the elementary-natural-physical system, physical measurement provides a physically interpretable measurement concept). Therefore, physical measurement is a natural physical process that is carried out by a physical natural system: This action can be distinguished according to well-defined parameters.

Physical measurements always provide physical information that can also be used for observer measurement, because inherent to physical measurements, the eigenvalue of the r_n virtual measurement point in our model becomes super determined, from the previous superposition system state (for which the system state has no direct parameters in space, it only appears in the extra dimensions) then, quasi, the extradimensional wave function collapses.

Outside of space, in time spaces, there is a system of super positions (linear and nonlinear super positions) that do not give a super determined eigenvalue that can be interpreted for space (although, according to their own order, they also have an extradimensional, super determined output, which, however, is not realized in space). These superposition states, can be used in our description to characterize the states before physical measurement. Without physical measurement, there is no measurable phenomenon: That is, there is no observer measurement event.

The mathematical structure and coordinates that directly fit elementary-natural physics are created at a basic level according to Figure 2.

Figure 2. The mathematical basis selection, abstract geometric structure and parameters that directly fit elementary-natural-physics.



Planck physical point=Planck dimensions (and parameters).

r_n virtual measurement point=0 extension, but in metric, only the virtual metric=1 (so that s=1 is the virtual metric associated with the elementary path).

$t=1=t_v$ virtual time-quantum;

h=1 effect quantum,

h/t_v=stationary unit potential.

The eigen-time τ_n (in time-space of the eigentime): The geometrodynamic variables of the eigen-time-timespace are located on the virtual axis imaginary to the space in the time-space. The virtual origin belonging to the x-axis, among which is the current present-point variable z_0 (which is only a virtual space-time variable). The basic geometrodynamic variables are as follows: $z_{n,0}=+z_{n,0}*-z_{n,0}$. This relation gives a nonlinear, time-space superposition and the corresponding geometric variables.

The $x_{n,v}$:x abstract, *i.e.,* virtual coordinate axes and y_v: y virtual axes.

r_n=virtual measurement-point, n=1,2,...m, ($0<n,m<\infty$ and $0<r_n<\infty$).

When aligned to the zero-dimensional virtual measurement point (r_n), thex-axes do not need to be distinguished during a stationary state. $tv*r_n/t_v$: A single stationary eigenvalue point through which all rotations are aligned to the x coordinate axis in the elementary stationary state. The rotation cannot be directly interpreted on the plane of Figure 2/b, because then we are in a stationary interval and the space cannot change during the stationary state. And the zero-dimensional space always exists only in the geometro-static interval (in the existence interval of a t_v virtual-time quantum). For the rotation, a t_v virtual time quantum change is required: Therefore, the rotation cannot be interpreted in an elementary physical, but in a relational, complex process.

The eigenstime parameter τ_n: This parameter is a nonspatial, extradimensional eigentime parameter of the r_n virtual measuring point.

The space-related expression of τ_n, a virtual geometrodynamic parameter based on a conventional z-coordinate, the ${}^{virt}z_n$:

$\tau_n \rightarrow {}^{virt}z_n = (+z_{n,0};\ z_0;\ -z_{n,0})$ and $I\tau_n>=z_{n,0}=+z_{n,0}*-z_{n,0}$.

Later, in this coordinate system, we will also use a potential-superposition abstract axis because, when abstracting the x coordinate, the concept of place quasi appears in the abstraction. It is then appropriate that the potential (potential–eigenvalue) is given a separate coordinate, which is the x_0 axis.

The virtual measurement point r_n contains both features, because $r_n=x_n$=potential eigenvalue, which until the physical measurement occurs is equal to $t_v*r_n/t_v=\hat{\mathfrak{f}}_{n,e}$: This is the unit eigenvalue operator, and we apply it with the parameters [1,0].

The frequency operators $\hat{\mathfrak{f}}_{n,e}$ and $\hat{\mathfrak{f}}_{n,e}$, in virtual trajectory analysis, can be abstractly connected to the superposition states in an extradimensional superposition system.

We have already introduced the basic characteristics of the 11-dimensional elementary-natural-physical system and shown you the right path to quantum gravity. We would like to show you some of the fundamental changes that this new knowledge will cause, even in astronomy and cosmology. These significant changes occur when we consider the elementary physical findings and quantum gravity theory.

Lorentz transformation (covariance and invariance)

In the next chapter, we apply the discoveries of elementary physics and the 11-dimensional elementary-natural-physical system: We would like to present some fundamental changes that must be taken into account in the case of physical processes analysed on other bases thus far.

In the next, skippable chapter, share some important information with those interested to develop a new physical system and a new physical worldview (but the full theory would require a much larger scope).

The Lorentz transformation, a formalized mathematical abstraction (geometric abstraction) expressed in a classical image, can be described on the basis of elementary physics; however, there are no real physical considerations associated with this process.

Therefore, the mathematical derivation is obviously always a good solution within its own framework, but knowing further results from theoretical physics, we must ask the question of what the physical content of this derivation can be and what this calculation can be used for.

This description is one of the pillars of classical theory (the classical assumptions, however, cannot be directly applied to quantum mechanics either); therefore, this derivation must also be connected to the elementary-natural-physical system described in the 11-dimensional model: Because we can determine what direct physical reality we can attach to it.

Since the 11-dimensional system is the basic physical-based operating scheme of nature, based on its discovery, we can no longer maintain Lorentzian conclusions, e.g., the classical idea of time dilation and space contraction, and the basic assumption of v=v', which cannot be true due to the changing gravitational environment. Traditional time, which is only equal to the geometrodynamic rate of change, cannot be interpreted as the gravitational effect. We have proven that gravity alone creates physical reality in space, through physical measurements that can be interpreted on a virtual trajectory (however, covariance is necessary, and this condition, based on the new law, the rules of physical measurement, continues to be fulfilled).

The Lorentz transformation starts from the conclusion that there is an extended local-inertial system, the inertial reference frame. On cosmic scales, for example, based on the assumed Big Bang process, the existence of this phenomenon can be assumed through the abstraction of objects moving away in a quasi-inertial manner from the starting point. These objects, according to the classical assumption, move away without any force, according to Newton's 1st axiom; however, we have proven that there is no such physical reality in nature. That is, Lorentz assumes that an extended inertial reference frame exists and that inertia, this classical abstraction, moves the cosmic structure of the universe. However, in elementary physics, we have proven that this abstraction in nature is obviously impossible (it is just an abstract conclusion at the level of phenomena).

After all, we have proven in the elementary-physical environment that every geometrodynamic state, which, from a relational perspective, is created by a series of geometrodynamic changes, can be the result of only a gravitational effect; that is, it requires an extradimensional, gravitational energy investment according to the laws of the 11-dimensional physical system. The momentum is only a surface, phenomenon-level, quasi visual abstraction (see the inertial mass=the gravitating mass, but only the gravitational mass exists at the physical-base level).

In the classical frame, according to the Lorentz transformation, all observers in inertial frames measure the same physical parameters (this is the Lorentz covariance theorem).

According to our proof, all spatial changes are the result of the gravitational effect, realized through the effect of extra dimensionality-gravitational energy; therefore, before physical measurements (see virtual orbits and their analysis), the Lorentz conditions cannot be fulfilled. There is no extended inertial system: Only in the physical measurement, at the elementary level, is the covariance fulfilled at the local-measurement point.

In physical measurements, as a result of the gravitational effect, the super determined eigenvalue exists at the r_n virtual measurement point (interpreted in a virtual trajectory), and this eigenvalue is the zero-dimensional space itself. Therefore, in contrast to the inertial frame in the traditional sense, only the r_n virtual measurement point can be a reference frame, and only in the case of physical measurement. Expansion or contraction of the r_n virtual measurement point, or the zero-dimensional space, under real physical conditions is not possible.

However, the concept of distance between points in space viewed in an abstract relational way can be interpreted through a metric (in space, this is only a virtual metric); therefore, we can assume virtual speeds through this approach: $s=v*t$ on the virtual trajectory (but this is only an abstraction, because in zero-dimensional space, it has no physical reality).

Then, s_e is a unit metric, $s_e=c*t \rightarrow r_n=c*t_v=1$, which is an elementary physics metric based on elementary geometrodynamics (since the observer's comparison option can be based only on measurable geometrodynamic changes and because they only become measurable through physical measurement).

Note: c-the speed of light, is not realistic in space because of its elementary nature; therefore, this parameter can only be the virtual speed of space change (interpreted on an elementary imaginary-virtual path). Moreover, an observer, based on his own relational database, can obtain a variety of information that a physical measurement does not provide (but as we know, the processing of information either succeeds or fails: This is how effective models are created). However, since, according to the above, c is not a parameter of space-like virtual trajectories, we must introduce the c-operator in the observer's relation to characterize apparent velocities; in general, the c-operator is not equal to c ($\hat{c}\neq c$).

Therefore, for example, the speed of a distant object, which is only a virtual speed, due to the constant path parameter (s: cannot change because $s=k*s_e$), is purely a function of a virtual time factor. Because, due to the eigentime time-space, the abstract space points are isolated, we have to include some kind of continuous, geometrodynamic-time factor in the

abstraction, instead of the t_v virtual time quantum. Therefore, the change in gravity, in this simplified analysis, will be taken up purely with an imaginary virtual-time factor in the elementary-physics-based examination of the Lorentzian case. Related to the Lorentzian case, a change in gravity at the level of the phenomenon, can change an abstract t-time factor, which is actually not time but rather a geometrodynamic parameter (e.g. a virtual system time in the model). Since we have turned to the big universe in the investigation, within the framework of the given abstraction, we must also consider an imaginary x_n, y_n, and z_n extended domain as an elementary gravitational domain with the same parameters (e.g., a distant light spot can be treated in this way, which may actually be a galaxy or a galaxy cluster).
Therefore, for this analysis, a new, abstract, imaginary time factor must be introduced in our model. This new time factor will be the virtual, gravitational system time-operator: ${}^{virt}\hat{t}_{sys}$ (${}^{virt}\hat{t}_{sys}\neq t_{grav}\neq t_v$ with virtual system-time.

Based on the above, we need to show that the global sector phase of gravity has an internal structure:

- The integer-unit potential moduses, the normal potential-moduses, appear directly in the spatial effect.
- **Basis potential:** fractional potential virtual-moduses that cannot be directly quantified; therefore, they do not appear directly in the field effect and cannot be taken into account in the physical measurement. This is because physical measurements always occur at the basis potential of the measuring point; in this case, no basis potential deviation can occur, and the fractional potential units cannot be included in the space eigenvalue.

The direct analysis of the Lorentzian transformation is as follows:
The analysis concerns the relationship between two objects (A, B). In this abstraction, the two objects can be two particles, but they can also be, for example, two distant galaxies or clusters of galaxies: We take these abstract points as compact gravitational objects. The variables used here can be interpreted only for this derivation.
Our gravitational, abstract, geometrodynamic time-like variables are as follows:
${}^{virt}\hat{t}_{sys,n}(\Psi)={}^{virt}\tau_n(\Psi)$: Because of the n index, these virtual system-times will be virtual eigentime-operators.
${}^{virt}\hat{t}_{sys,n}$: This is the virtual eigentime operator applied to a system, for the analysis of the Lorentz relation, that is, to anabstract version of the virtual measurement point r_n. In addition, in a way connected to x_n, this will be a virtual eigentime $\rightarrow$ ${}^{virt}\tau_n$.
A: ${}^{virt}\hat{t}_{sys,A}={}^{virt}\tau_A$ and B: ${}^{virt}\hat{t}_{sys,B}={}^{virt}\tau_B$ $\rightarrow$ A: x_A and B: x_B abstract points that can also be indications of extended abstract objects.
Therefore, based on our previous findings, in the Lorentz transformation, the relation v=v', which is interpreted in an extended space, cannot be valid: Because the abstract velocity of every measured object depends on its own, different, gravity-dependent, virtual-eigentime.
Importantly, as we indicated above, in this calculation, in the gravitational sector phase, based on natural physics, we must also take into account the basic-potential differences evaluated in the abstract virtual trajectory: The basic potential is equal to the entropic fractional potential modus evaluated in the gravitational sector phase, interpreted individually for the abstract points taken A, B.
That is, the number of fractional moduses also matters, which we also take into account, in the following way: Fractional-potential amount * 1Higgs$_e$ $\rightarrow$ $\Sigma k_A * h_e$ and $\Sigma k_B * h_e$ will be the sum of the fractional potentials. Therefore, we connected both the normal potential and the basic potential to the abstract x_n points.
During abstraction, we can take into account the basic mechanical formulas, based on the Lorentz model.
Here, in the traditional evaluation, the potential $E_{grav}=m(M)*s^2/t^2$ will be (M=m: But the invariant mass, only in the case of

material–neutrinos will it be an integer potential–unit mode: For the sake of simplicity, the original notation, the letter m–can also be used) and thus $t^2=m*s^2/E_{grav}$. E_{grav}: Gravity is calculated in a quasi-traditional way; however, in this case, in elementary physics, the formula has already been modified, e.g., the Newtonian gravitational force is equal to Fg/G (G: gravity constant).

$E_{grav,n}= M_{n,\Sigma}* \hat{\nu}_n$ és $\hat{\nu}_n = \hat{c}_n^2$

$\hat{\nu}_n= E_{grav,n}/M_{n,\Sigma}$

That is, in the given environment, compared to the quasi velocity of space change c, the $\hat{c}_n^2$ applicable in space is the $\hat{\nu}_n$ applied here.

$E_{grav,n}$: The total energy, in this abstraction, also includes the energy of the basic potential (while $M_{n,\Sigma}$ only includes the energy of the quasi-invariant mass):

$E_{grav,n}= ((M_{n,\Sigma}* s^2)^{\text{without basic-potential}}+(M_{n,\text{basic-potential},\Sigma}* s^2)^{\text{basic-potential}}))/ {}^{virt}\hat{t}_{sys,n}{}^2$

The formula $E=m*c^2$ is changed to m*1 in elementary physics because velocity is not possible in the spatial sense (v cannot be interpreted in elementary physics, and so is c). In our hypothetical case, we measure for a very short period of time at a time, e.g., compared to the astronomical environment (based on the above framework conditions, we assume that no gravitational changes occur during the observer measurement). Then, we can repeat the measurement to determine the velocities: under these conditions, we can take the measured result as a potential energy, *i.e.,* constant potential (see also the quantum Zeno principle).

According to our derivation, based on elementary physics, the s-parameters, as the length of the virtual trajectory path, cannot change either: At the elementary physics level, the abstract unit distance, the virtual metric, is always 1; this cannot change. The operation of nature does not allow this, not even in a macro-analysis environment, if we stay on a physical basis (but in this case, s=k*1 unit in abstraction). In addition, based on elementary physics, space cannot be curved; as we deduced, the elementary space can never be, for example parabolic or hyperbolic because it has no geometry at all (the two reference points, even in the abstract set interpretation, can only be on the elementary x-axis, during the current, quasi-virtual time quantum; so during the observer's measurement).

Therefore, for the evaluation of the abstract speed of objects A and B, we can add a constant multiplier, which is not equal in the case of A and B, for different -Gravitations: $\hat{\nu}_{A\to B}=K_A*1$ and $\hat{\nu}_{B\to A}=K_B*1$ (both objects, their own abstract speed is listed as $v_n=0$, when measuring the other:): ${}^{virt}\hat{t}_{sys,n}={}^{virt}T_n$). K_A/K_B: Represents the virtual eigentime ratio.

Therefore, the greater the gravitational difference between the objects; and thus, the greater the virtual eigentime difference, the greater the difference between also the velocities calculated for the other object.

From one object, the measurement of the other object, an example of this case:

A→B, B→A: ${}^{virt}T_A\neq {}^{virt}T_B$ and ($\hat{\nu}_n= s_2/{}^{virt}T_n{}^2$, $v=s/{}^{virt}T_n$). $v_{A\to B}=s/{}^{virt}T_A$ és $v_{B\to A}=s/{}^{virt}T_B$

For example: ${}^{virt}T_A=1$ ${}^{virt}T_B=10$, and $s_A=s_B=1$, $v_{A\to B}=s/1=1$ and $v_{B\to A}=s/10=1/10$.

And $E_{gravA}> E_{gravB}$

Therefore, the virtual eigenntime of object A is smaller than that of object B (virtual time dilation, between virtual eigen times). Therefore, if A's virtual eigentime is quasi elongated, based on the quas velocity factor of the gravitational effect, then for 1 step to occur in space A, 10 unit steps already occur in space B. Therefore, object A is evaluated as relatively slow by object B compared to itself. At the same time, the internal speeds, in the analysis linked to physical measurements, may even remain the same (if all processes are slow or fast in the same proportion, then the speed picture does not change: if, quasi, the clock also runs slower, then the geometrodynamic speed seems unchanged).

In this special simulation, we did not take into account that there is a difference in the observer's measurements, even though this difference was the basis of the LT: This difference is caused by the limited speed of light, the fact that c=a finite value. This causes a systematic measurement error: This is the basis of the perceived appearance, which, in physics thus far, has been attributed to the effect of the electromagnetic wave (which the Lorentz transformation, ignoring all physical characteristics, is attributed to a physical difference, also in the case of objects A and B in our example). This means that based on a good calculation result, an incorrect conclusion was drawn regarding the physical properties. The problem was that observers judge physical properties based on subjective appearance.

Astronomy and cosmology

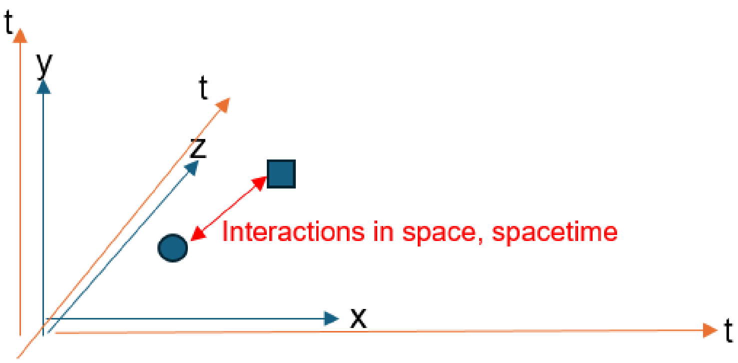
In the case of the two distant cosmic objects previously examined, what will be the true energy ratio? Measurement and correction.

In connection with the elementary physics-based analysis of the Lorentz calculation, we can perform further analysis.

We have deduced that, when evaluated from an observer relational perspective, complex structures move on the phenomenon level on different geometrodynamic trajectories. However, at the elementary physical level, there is no movement, and the space is in a stationary state for all physical measurements. Therefore, the Lorentz inertial reference frame case can be realized only in elementary physics and physical measurements and only then will the result be covariant (based on this, we can also obtain covariant results in the observer measurement). In the case of very distant cosmic objects, when we study, for example, through a distant point of light, the Lorentzian-like characteristics of the given galaxy or extra galaxy can be determined based on the photons entering our nearby locality. By setting up the analysis in an abstract way, physical conclusions can be drawn, e.g., about the internal gravitational characteristics of various distant objects, *i.e.,* about the total-energy ratios. As mentioned in the previous chapter, based on elementary physics, we must re-evaluate certain physical characteristics, and then apply corrections when developing good results.

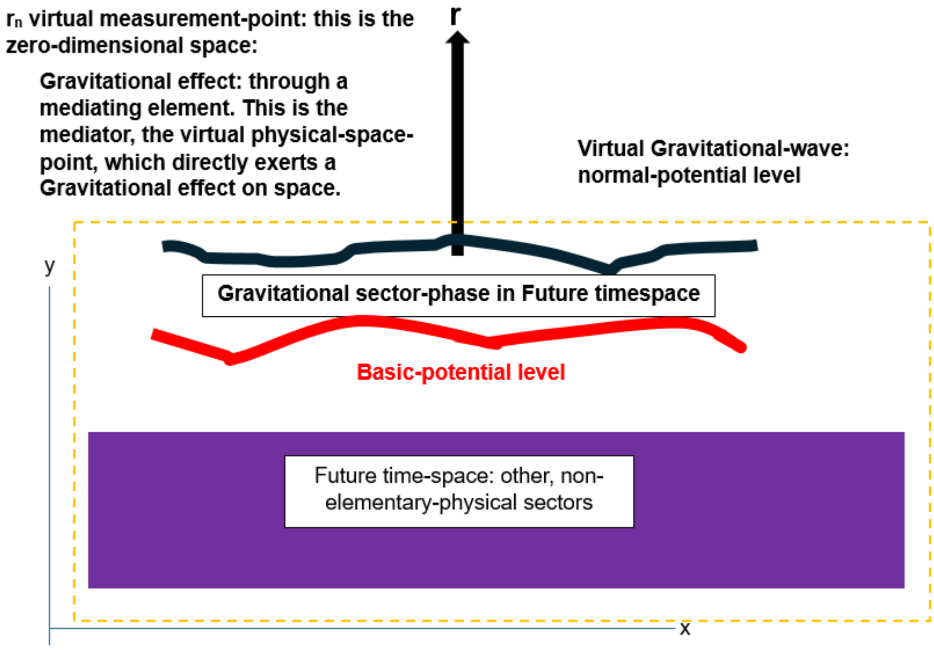
The starting point of effective physical theories thus far is the universe, the space of interactions taken up in abstraction-basically space-time-starting from the level of classical theory. The theory is based on the invariance of the 4 pulse which we have depicted in a simplified way for our purposes, in the following Figure 3.

Figure 3. Spacetime theory based on the invariance of 4 pulse, its basic structural and geometric characteristics.



However, the zero-dimensional space of the 11-dimensional, elementary-natural-physical-system, in a way connected to the above, requires a completely different, abstract representation from the above (in the current, simplified form for the purpose of analysis) Figure 4.

Figure 4. In contrast to Figure 3; the zero-dimensional space of the 11-dimensional, elementary-natural-physical-system can be characterized in the following abstract relation (we give this comparative figure in a simplified form for the current purpose of analysis).



The laws of the 11-dimensional, elementary-natural-physical system modify the evaluation of astronomical results. Here, through a new example, we present modifying factors, namely, with regard to the correct evaluation of the energy ratios between individual objects.

As a result of what has already been said, and as we have deduced, Gravity also performs rate-of-change regulation (it is not gravity but rather the structural sector phase that establishes this rate, through preon-level operations), which changes the speed of the process steps according to the mass and frequency (the imaginary invariant mass of photon-neutrinos is related to the speed of light value c).

That is, the elementary-physical photon-neutrinos (photons) with only imaginary invariant masses, in the vacuum case, at every t_v virtual time-quantum-change, can take a step on the gravitational-virtual trajectory (spatial interpretation): But the space change can be interpreted only in the analysis of a virtual trajectory because it cannot be a real physical process in zero-dimensional space. Therefore, in the direct effect, gravity gives the quasi-location of the particle on the virtual orbits. In the abstract, however, we can assume that gravity, instead of always moving forward to the next location, moves the particle quasi-backwards to its original location as a function of mass and frequency. This backward movement occurs until all the preon unit potentials at the preon level have moved to the next quasi-location.

Thus, an abstract velocity interpretable on a trajectory that is also influenced by black matter and black energy is created in the relational and complex thoughts of the observer (thought is not a physical concept: So must add that whatever this word means, "thought"). Therefore, at the preon level, in the structural sector phase, the concept of speed is interpreted according to the number of geometrodynamic, virtual step units, e.g., k*1 (at the phenomenon level: This will be a traditional speed, in observer measurement).

The two distant objects A and B: In this analysis, the virtual eigen times will be the t_a and t_b. Here, we do not rely on objective physical measurements but this is a phenomenon-level observer measurements according to the Lorentz example; e.g., we can then measure even a distant galaxy-traveling faster than the speed of light (as astronomers have done according to publications). Therefore, in the example, objects A and B are considered compact stationary points (abstraction based on elementary physics), for a short observer measurement time. Thus, the following relations will be valid in our example, because we have set up relations evaluated on a mechanical level, based on the Lorentz transformation, in a traditional way. Therefore, let the distant star or galaxy, for example, be just an inertial point of light in the distance, in a series of short measurement moments:

In the example, the energy (for a given stationary, virtual-eigentime interval), compared to the Lorentz case, is taken classically: $E_a=m*s^2/t_a^2$ és $E_b=m*s^2/t_b^2$ and $E_a=m*\hat{c}_a^2$ és $E_b=m*\hat{c}_b^2$

In this case, $\hat{c}$: The apparent velocity measured for the given gravitational object. Then, according to the previous chapter, instead of Lorentz v=v', according to the given conditions, $\hat{c}_a^2 \neq \hat{c}_b^2$.

Thus, the data conclusions formed by photons before physical measurement are made based only on objective appearances interpreted according to the Lorentz transformation. Therefore, these data do not directly reflect the real gravitational conditions of distant objects (the corresponding measurement results are formed locally, in the phase space of the measuring device here).

In the previous chapter, m_n was the mass of the object (the summed frequency modus): This would only be a covariant value in an elementary physical measurement. In the example, the distant object is considered to be a homogeneous, nonextensive point, but in the given example, m_n is also a variable if we measure it from another gravitational environment: instead of $E=m*c^2$, the applicable formula is $E=m*E/\hat{c}^2$ and $m=E/\hat{c}^2$.

Based on the above, the particle frequency is an elementary physical eigenvalue and an applied linear coefficient. The frequency, therefore, also at the virtual, physical space-point, is only a multiplication factor-a value that does not have physical parameters and that forms the potential modus from the unit-potential: It has nothing to do with time.

$E_a=m_a*s^2/t_a^2$, $E_b=m_b*s^2/t_b^2$ and pl. s=1, $t_a=1$ and $t_b=0{,}1$ (the velocity operator is $\hat{c}=s^2/t_n^2$ and s is always evaluated only for the quasi position of the distant object; thus, it is always a scalar numerical value).

This means that in sector B the time factor, the time dilation traditionally taken, has stretched (this is just a quasi-time-dilation for the geometrodynamic time-like factor), but only imaginary time dilation has occurred. In the example, $E_a=1*1/1=1$ ($m_a=1$, $s_a=1$, $t_a=1$) and $E_b=10*1/0.01=1000$ ($m_b=10$, $s_b=1$, $t_b=0.1$). As already deduced, according to the changes related to the LT, the need for correction between sectors also arises here: $E_b \rightarrow E_a=1*1/0.01=100$. As measured from sector A, the value of the energy of sector B will be smaller than the true value: $E_a \rightarrow E_b=10*1/1=10$.

That is, in the sector with higher gravity, the apparently high-speed but actually lower-energy A-sector can be seen as having higher energy (e.g., based on the incoming photon intensity: Since, due to the quasi time dilation t_n, an aggregate value is generated) in an assessment based on relational speed. For example, in the A and B systems, the energy value without a base potential is $E_n=1$ és $m_n=1$ és $s_n=1$: $E_a=1*1/1=1$. $E_b=1*1/0{,}01=100$.

Gravity, even if the measurable frequencies are the same, can be different in sectors A and B, namely, due to the difference in basic potentials, and this will create differences in virtual eigen times, e.g., in the case of $m_a=f_a=f_b=m_b$ (this difference is therefore created due to possible differences in basic potential, *i.e.,* black matter and black energy). After all, the basic potential also affects (according to the differences in black matter and energy we derive) the differences in virtual trajectories. As was established in astronomy with the discovery of black matter and black energy. In this example, the time difference, *i.e.,* that t_b is the local virtual-eigentime, will be smaller than t_a: This difference is possible only if the gravity of system B is correspondingly greater. Then, $t_a=1$ and $t_b=0.1$: $t_a>t_b$. We can say, but this is not a realistic assumption in physical terms, that the time of system B suffered Lorentzian time dilation. The coordinated speed of geometrodynamic changes decreased based on gravitational deviation. With respect to observer measurements, we can obtain results based only on the law of least action and according to the cases of physical measurement ((Law: The capitalization refers to the newly discovered, expanded, and modified variation principle).

Ultimately, all that we have briefly described, the 11-dimensional, elementary-natural-physical system, is nothing more than our universe, which is formed and functions based on the controlling effect of time, this external, controlling parameter, on time spaces (we called the time of our universe the Present in the physical model).

CONCLUSION

Contrary to previous ideas (see relativity is a good model, but only an effective model): According to elementary physics, the fundamental way of nature, only the effect of the gravitational sector-phase on space can be considered a physical change: abstract geometry does not directly change space, so the image according to geometric appearance does not cause physical changes, e.g. in the physics of a distant system. The Lorentz transformation, based on the constant speed of light, only analyses the image seen from a distance (it includes the analysis of the apparent image); therefore, in this case, there is an objective measurement deviation from the real physical conditions.

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