

Dynamic Element of Life

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Abstract

The mathematical game “Life” created only the illusion of understanding the mechanism of life, because itself was built on the initial assumption of the existence of initially living cells and described only the process of their rapid (not purely statistical) reproduction. The absence of a basic physical idea of Life leads to the fact that medical research of critical conditions of the human body is conducted blindly, by trial and error, and often in the wrong direction. As shown in the work, in the analysis of the life of an individual cell, it is fundamentally necessary to take into account the dynamic element, which is nothing more than a harmonic packet of polaritons disproportionate to the structure of the cell. Understanding this is of great practical importance when conducting electrophysical experiments on a separate living cell, as well as on individual organs, and on the person as a whole. And misunderstanding leads to the fact that often the techniques used to study/treat the brain are based on direct current, which is similar to fixing a computer by hitting it with a hammer.

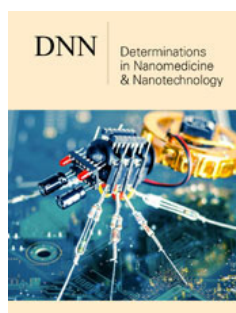
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Introduction

As a young scientist, I heard about legendary researchers who determined the wavelength of light by eye when calibrating spectrometers, which by touch determined the degree of secularity of the crystal surface, which by ear noticed malfunctions in devices and engines. And he himself sometimes found faults in the electronics on the scent, and he “felt” nerves if, when finishing the mirror surface of the crystal, a grain of 15 microns came across in a micron powder. Many of these skills are lost and transferred to instruments and tools. And I myself brought my optical technique to such a sensitivity that when I fingered the mirror surface of a crystal of cubic boron nitride (which is harder than diamond), I detected a change in the phonon attenuation on the surface. But it turns out that in the measuring field not everything human can be exceeded and replaced by the most sensitive of the created devices. And as will be shown, both devices and computers are still far from a comprehensive, human sensitivity to harmony, because for such sensitivity, they must first become alive (and only then try to become Intelligent). And, perhaps, astrophysicists, in search of brothers in their minds, should listen to the broadcast—they will suddenly hear music from some star. In general, astronomers who are divorced from reality and entangled between the “black holes” need to recruit people with perfect hearing.

A Brief Background to Life Analysis

Basic Scientific Concepts are built, naturally, by living people, and thereby naturally reflect Vision with the Life of Nature. And this subjective factor not only cannot be taken out of consideration, it must be taken into account how intuitively people took into account before introducing a quantitative (numerical) characteristic Logarithmic Relativity [1], and in the construction of Classical Physics, and in the construction of the Theory of Relativity, and in the construction of Quantum Mechanics. The Logical Formalism itself, the Basic Physical Models themselves, the Mathematics itself, which describes the processes in the form of formulas, were built on the basis of the Observer and the reaction of the object to the influence of the Researcher. Thus, it was built as a reflection in a living person, in his Sphere of Conscious Knowledge of Physical Reality. So the Polarity of Time is reflected in the Principle of Causality [2]. And that is why purely abstract Mathematics is important for Mathematics itself, that is, for perfecting the introspection of the Sphere of Conscious Knowledge [3]. But its application in Physics in isolation from Reality can easily lead to fiction, to non-existent ideas about Nature, false models, very far from physics. What we have in modern Cosmology and Elementary Particle Physics, which degenerated into an “elite golf club.” And in practical physics, such as



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Physics of Semiconductor Devices, such bare abstract theories are practically not used-they are used only for decoration to fool the average man. And the rejection of the Main Relativity-which does not have the center of Infinite Nature, relatively (logarithmically)

constructed by us by the Sphere of Conscious Knowledge, centered on our location in space and time and on our tangible scale, is a Characteristic mistake of purely speculative constructions (Figure 1).

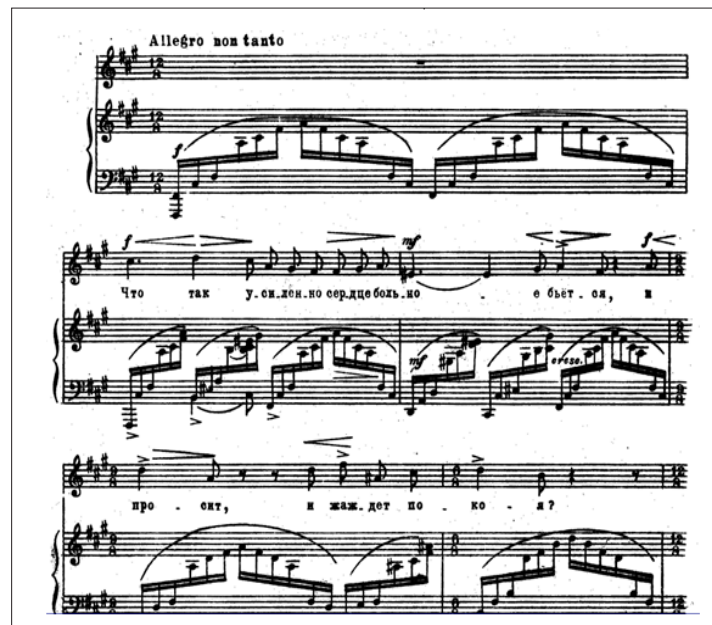


Figure 1:

And an additional curious paradox arises-a living person builds ideas about Life, that is, ultimately, about himself. In this, formally, there is no particular contradiction. But taking into account the Logarithmic Relativity, we can very well expect the same infinite depth of the question as about Nature itself. And, therefore, it is important to use the entirety of the Methodology of Science in order to prevent at least those mistakes that we have already made by comprehending the elementary nature-inanimate. And at a selected depth of reasoning, a self-agreed solution to the problem is required.

While heuristically throwing the “bridge” between the known fragments of the Sphere of Conscious Knowledge, researchers usually simplify-they use linear and, moreover, often unsaturated approximations of properties between two points. This simplifies the task of description, but sometimes, as with the same NANO, it leads to the exclusion from consideration of the essential features characteristic of the “simplified” scale. This fully applies to the definition of the concept of LIFE, the roots, the origin of which, by the way, at the present depth of understanding, also refer to the missed NANO-scale.

The physical definition of Life has not yet been given, and its physical analysis is “modestly” bypassed. Philosophers are “allowed” to talk about Life, zoologists and biologists say a lot. The assertion that physiology (from other Greek. Φύσις природа-nature and λόγος-the word) is a science about the essence of life, life in normal and pathological conditions, that is, about the laws of functioning and regulation of biological systems of different levels of organization, about the limits of the norm life processes

and painful deviations from it, is also not entirely correct, because also bypasses the essence of the physics of Life. Those most of the reasoning goes around and around the physics of Life itself, but refers only to its manifestations. The most deeply, but also in strictly defined frameworks, the special section of biology-cytology-discusses the executive functions of the element of life-a living cell. In this case, of course, both chemistry and physics are involved methodologically. But again, limited only by the narrow framework of the Manifestation of Life and its narrowly specific application. So at the 2003 Nobel Readings (“Science and the Progress of Humanity”, Russia, St. Petersburg, June 16-21, 2006) Professor A. Javer gave a lecture on technical applications! of a living cell: “The Electric Biosensor”, and Professor A. Higer, on the medical application of cell physics: “Gene Sensors: Recognition of Specific DNA Diseases”. The misfortune of our time was also manifested in the knowledge of Life: between the bare, abstract philosophizing about Life and fundamental Physics a “black” hole formed. Perhaps the main, but not the only one. And, in many ways, this is the “merit” of the business, which “improved” the bureaucratic science. And few even in the ranks of Nobel laureates dared to look into these “black” holes. It seems only the most worthy. That’s when Bob Laughlin made a report, “What comes first: Physics or Mathematics?” (instead of the report expected from him on the Hall quantum predicted by him), the Nobel Prize did not protect him from the skepticism of artisan-listeners. And when the Nobel laureate in medicine stated that mankind does not know what cancer is, since nobody actually deals with the cancer problem-they don’t allocate money for it, it just ran into the negative of innovators (a panacea medicine).

And since the Basic Physical Concept of Life has not yet been formulated, experts from different branches of science only implying it (each in its own way) make definitions not in essence, but according to the attributes of Life, such as the words put in the epigraph. Those. Life is simply an attribute of inanimate Nature, and why, in fact, not any inanimate, but only living-the question remained open in principle. Or vice versa, recursively closed: Life is alive. Therefore, there are more than a hundred definitions of the concept of "Life", and many of them contradict each other. Life can be defined through such words as "system", "substance", "complexity (of information)", "(self-) reproduction", "evolution", etc. The minimum definition, consistent with 123 definitions, has to Physics the attitude is very distant: life is self-reproduction with change.

In the above-mentioned "black" hole of Life, a gleam appeared when prominent physicists took up the abstract Game of Life (Conway's Game of Life [4,5]). They took into account the purely physical problem-the thermal death of the Universe, which is associated with the improbability of not only life, but also with the improbability of the random formation of even one rather complex organic molecule (and, by and large, with the improbability of the existence and the most observable inhomogeneous Universe). And Nature created a lot of organic molecules, this is a fact. And the fact that Life arose, the very possibility of creating Life from dead matter, we constantly prove by our existence. Earlier, the argument of the vitalists in the 19th century did not take into account that information can also be stored in dead matter-the existence of a program that can change the world. The game "Life" initially allowed the existence of living cells and! received their relatively rapid (in finite times) reproduction/development. Although the Game, of course, did not raise the question of the first living cell, just as von Neumann did not raise the question of creating the first robot, which others will begin to collect. As befits the Game, its separation from Reality simplifies the description (thinking) process, but simplifies it with the loss of the "vital"! In this case, with the loss of the physical medium of the Program and the physical reasons for its occurrence.

Again, in the "Game of Life" only the physical and mathematical bases of the probability of occurrence of organic compounds and DNA were analyzed. Those. again, not the Physics of Life, but the Physics of Design-the emergence of a complex chemical compound. And the mathematical solution was found in the form of a cellular automaton constructed by John Horton Conway, which gave an increase in the probability of complex compound formation during the accumulation (and storage) of information in clusters that initially occurred randomly, in the so-called configurations and configuration classes (for example, for a two-dimensional plane-a glider or glider). And our colleague Viktor Kozeev in a publication on the NRA website showed that fullerene is such an element-the progenitor of biological compounds.

The creators of the "Life" Game believed that, thereby, the "gap" between Life and inanimate Nature is filled. But beyond the framework of the "Life" Game itself, there was also the initial

division of cells into living and dead, and the Main thing-Life was not physically determined. The ingenious John von Neumann [6] previously seemed to have immediately jumped over just the emergence of life-from dead matter to the immediate emergence of reason, and Conway took only a shorter jump-he began with the self-organization of cells. So, in fact, no physics of the living cell was built (and the preservation of this "mysticism" was considered necessary-it belonged to the prerogative of the Creator-God). But Science and the "gap" between the Mind and Life, and the "gap" between Life and the dead Nature, remained unfulfilled. The gap is not filled because from consideration, the most important Life Element-Dynamic! We analyzed the dynamics of the construction of cells, and not the dynamics of the element of Life-cells.

So, breaking away from reality, in fact, the Game of Life from a new methodological tool for describing Nature was again absolutized in a narrow circle of professional artisans and turned into a subjective Game of the Mind, a game for "chosen" minds. They began to try to use the Life game everywhere, even to describe the Universe-the Cellular Universe. But Artificial Intelligence has already shown that in any Game, tk. by definition, it certainly has limitations-artificial rules, AI surpasses human intelligence. And the time is not far off when the AI will configure, according to implicitly used rules, and not according to the Physical Laws, a lot of its "Cell Universes" and "Lives". Both the Picture of Nature and its History and the "chosen" minds and schoolchildren will be studied by AI "as more strictly than justified by people".

Moreover, one of the prominent developers of the Life Game Stefan Wolfram actually already built the Wolfram Mathematica, which reduced the "selected physical" minds to ordinary developers of abstract primitive models (not translated beyond their applicability), but himself to merchants-head of Wolfram Research Corporation. And the monetary component for him was higher than the violation of his "Mathematical Mind" even the principles of mathematics. Why did our collaboration with him stop-after thanking me, they billed me for finding an error in Wolfram Mathematica's calculations and using it to demonstrate the error? Yes, and ideologically, breaking away from reality, Stefan from a partner moved into the category of my opponent [7]. And I don't spend time on programmers who, obsessing about one software find, even a very interesting one, "remake the whole World" for it (for the sake of money-the "Timer" button, when I showed how, using it and the Principle of Causality, you can test the computer itself, Stefan, made it a separate paid separate program).

And, as will be shown below, the paradox is that even from the abstract insults of Man, they were practically excluded. The fact that the brilliant, sensible Nature Thorem [8] could come up with and do without even thinking about the Principles (many of which have still not been formulated yet) is still not within the power of any computer. And the fact that the brilliant von Neumann felt the essential role of Reason in the formation of Life remains to be understood in the future (if it is possible to determine the Element! Reason), But for now it is necessary to understand, with the involvement, and not exception, of the Human Mind, the nature

of Life, Life that has come true-The life of a living cell.

Moreover, as will be shown in the first chapter of the book "Advanced Basic Scientific Views", "Advanced Basic Scientific Representations", the totality of ethical categories God is not included in the set (orthogonal benchmark) of Scientific Views. So the gap discovered in them needs to be filled with an additional, purely Scientific Representation (and the corresponding physical models). The absence of this led to the fact that the main thing was thrown out of the results of physical experiments on a living cell, as can be seen from the aforementioned Nobel lectures. And the business game of money in general led to a complete profanity of Science, which, with only references to authorities, and not to Principles, separates official science and official pseudoscience.

Element of Life Physics (cells)

The President of the Academy of Sciences of the USSR, Academician Aleksandrov, was apparently the last scientific head of our Academy-he did have an own scientific opinion about any section of Science (and about public life, which was considered by the highest leadership of the USSR, too). Therefore, he needed all sorts of commissions to combat pseudoscience only as a technical tool. He did not consider it necessary to admit the secret of some commission there to voicing or discrediting IDEAS (as academics are doing now). Therefore, in television debates about biofields, he took part himself. And the young (then) academician Ovchinnikov, who was carried away by biofields, put it on both shoulder blades with one phrase: "If a biofield is a field, then it can be measured!" But they still cannot measure objectively what is called a biofield. They cannot, because in a formalized Science they completely excluded from the Measurements such a perfect instrument of complex measurements as Man! And not only in biology. In the same medicine, only unique doctors such as Professor Shabalov LISTEN to the patient (including his speech) carefully and almost 100% likely to "fall into the disease" (after 15 minutes of studying my records of the child's condition during the half-year "treatment of the child" and 15 minutes his feelings). But formal involvement of the latest medical equipment cannot guarantee this (for that, it guarantees reporting).

However, medicine is trying to cure a person. He is even trying to treat his brain with psychiatry. But the benefits from this are very relative-basically there is a process of accumulating knowledge about new diseases and their empirical systematization (such as the catastrophic increase in the number of demented newborns after the restructuring in modern business Russia). And the reason is the same-there is no Basic Scientific Concept of Life, even of the Element of Life-cells. The lack of a Basic Idea of Life and for Aleksandrov prevented him from understanding himself what Ovchinnikov was trying to tell, and for Ovchinnikov himself, it prevented him from coherently explaining some attempts to obtain the results of primitive physical experiments.

And in general, the very existence of mysticism to some extent reflects our superficial understanding of Life. Moreover, the existence of hypnosis, the impact on a person of works of art

and music, provoking mass psychoses and orange revolutions. In all these spheres of human activity, there are their own "scientific" schools and their own methods, based not on a deep understanding of processes, but on knowledge of probable consequences. Healers, and "advanced" healers who use acoustic and electromagnetic vibrations and even music, follow him. The doctor of psychological sciences Anatoly Kashpirovsky also followed him. To some extent, the biolocation and all sorts of "dowsers", who tried to measure the elementary with primitive physical devices, were also referred to mysticism. Even the most advanced of the primitive physical methods could only "center" the infrasound negatively affecting a person-4.2Hz, but still did not give answers to the mechanism of its effect.

The great physicist Albert Einstein, although he "distorted" our space-time is unknown in what way (in order to rectify the logarithmic relativity to linear), he sought answers, however, in reality [9]. Searched in her for harmony hidden from his already "twisted" eyes. That's why he turned to the alternative Genius-Thermen, who learned "mechanically" to create LIVE music (until now it was not known how he "replaced" the pianist-composer with an analog device, while even with the help of computers a miserable resemblance of the living one is obtained-"correct" music). He asked to voice elementary geometric figures. Thermen did not support the idea (primitive!) Of Einstein. Although Einstein was on the right track-he intuitively turned to the "creator of Life in Sound"-music, he was far from what had to be truly voiced.

I repeat, Albert Einstein was a great physicist and just a wise man. But perhaps it was his wisdom that slowed down the search for Harmony of the Universe. He said simple and clear, human words about life: "An individual's life makes sense only to the extent that it helps make other people's lives more beautiful and nobler. Life is sacred; it is, so to speak, the supreme value to which all other values are subordinate". But they show that he did not consider it appropriate to give/search the physical definition of Life-he considered it the prerogative of God.

Theremin, talking to him and then, listening to his speech [8], I was the first thing I thought, "Is he a robot"?! So, Theremin Einstein's wisdom (in his own way) instantly felt, understood. He understood as a Physicist, as a person "understanding what he is doing." And expressed it with the phrase: "Einstein was a good person, but as a physicist he is weak." And only now, the fact that this request of Einstein was far from ELEMENTARY became obvious. Modern computer programs allow you to easily perform a primitive harmonic analysis, and the vector video editor Corel draw and the music editor Sound Forge have a compatible dat-extension, which makes it easy to transform graphics into music and vice versa. This allows the Einstein problem to be easily solved. But from elementary single geometric figures, we get only furious sounds (such as the clatter of the step engine turning the diffraction grating, which I singled out from measurements of the precision IR spectra of crystal). And the human ear is "tuned" precisely to music. Especially absolute, which easily distinguishes the falsity of computer fake from Mozart, Rachmaninov and Mussorgsky.

The key to understanding that the elementary (that is, broadcast) is not primitive and in the problem of understanding Life gave the Nobel Prize, given “not for that.” “For that” give “shy.” The prize was given for the studies of the response of a living cell to various influences mentioned in the Nobel readings above. But in addition to the observed and well-analyzed long-term (about 10 hours) electrical responses of the cell to mechanical and electrical influences (shocks), a certain electrical NOISE was constantly observed that could not be mathematically analyzed. And then one of the participants in the experiment suggested listening to the recording of this noise through the headphones (Figure 2). And the lecturer included this record for us-listeners of the mentioned Nobel readings. And a quiet adagio poured into the hall to us. For myself, I immediately identified these sounds as harmonic vibrations continuously changing without disturbing harmony. But the lecturer “went further.” He let his friend listen to this recording to a professional pianist, and he recorded this music in notes. The musical record of this MUSIC of the Living cell was presented to us by the lecturer and presented on the screen.

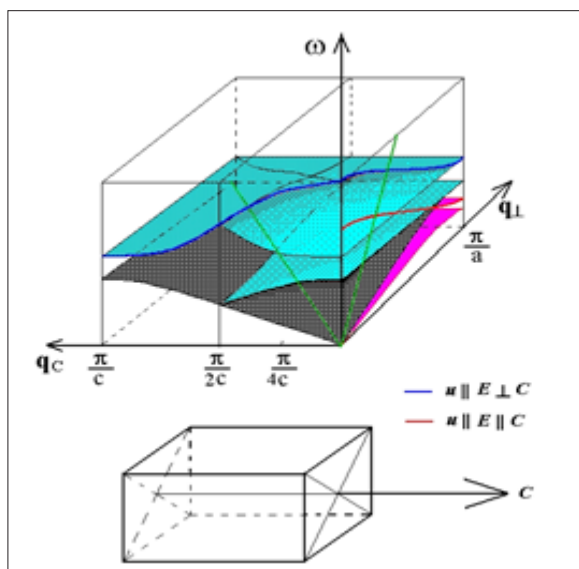


Figure 2: A model for the appearance of transverse and longitudinal optical phonons on an acoustic branch (and, accordingly, polaritons) with an increase in the size of the transmitted element along one axis C.

On the one hand, “dry cell calculations” of the “Life” game provide a whole set of time-varying cell growth fragments (figures, categories), including oscillatory ones. But, these categories obtained in the framework of the “Life” Game are not for a single cell, but for its “reproduction”. And life in a separate cell, say the brain, stops in the absence of oxygen for 3 minutes. Oxygen “fuel” is consumed by the cell, mainly for its external functions, as well as for its growth and division, but these processes are much slower, moreover, they are associated with changes in cell mass. Actually, Cell Life is supported by oxygen fuel with virtually no change in mass and also fades away, and much faster than building processes. And such massless processes are the detected “musical noises”. And this is nothing but electro-mechanical vibrations-slow, “acoustic”

polaritons corresponding to a nano-scale object. But polaritons are not just at a fixed frequency, but with complex, but again harmonic deviation.

Polaritons are usually associated with phonon branches, called optical [10]. So they are named because their energies for objects and periods of translation of the order of interatomic distances in the crystal correspond to their exciting visible and IR photons. But for nano-scale objects, these optical phonon branches also produce polaritons of the acoustic frequency range. Strictly speaking, for a complex broadcast object, packets of polaritons appear as shown in Figure 3, in different frequency ranges. And using an analog or computer local oscillator, all these packages can be viewed as a color scheme, or listen to as a musical scheme.

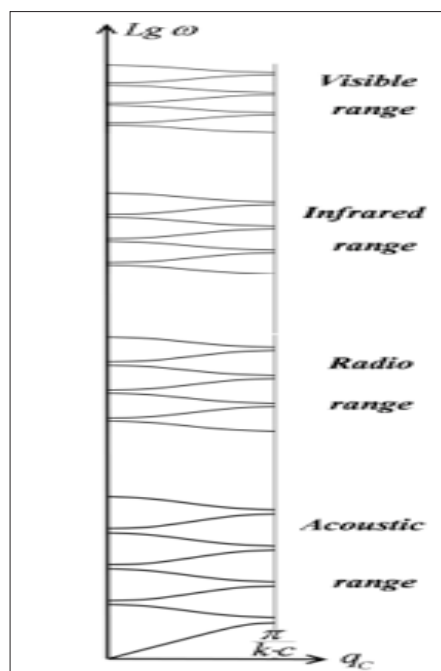


Figure 3: Schematic representation of polariton branches of different frequency ranges.

From the diagram shown in Figure 3, it became clear that the conventional wisdom that Theren made simply touch panel (simply-it’s just used for free and thoughtlessly in modern computers). And my “wild” initial assumption that he imitated Life in the theremin is also mistaken. Theremin did not need to create Life. Everything ingenious is simple-he created a device that the life of a “performer” person feels. And theremin felt not only the approach of Lenin’s fingers to the “keys”, and not just the body of the dancer-Theremin’s wife to the dance floor he had made. And theremin felt there in a wide range of frequencies, and apparently not only in the acoustic “music” of the fingers and body.

This is why the pathetic attempts to make therevox without Theren were unsuccessful. It is possible that computers through the touch panel (in fact, the Theremin panel) feel much more than is required by the primitive consciousness of most users. This is also indicated by attempts to mentally control computers. And this “feeling” of our fingers with a touch panel is possible (hopefully) and compensates for the poor education of computers by most

users-their finger biorhythms are more “smart” than their socially damaged consciousness. Perhaps the computer trained by “bad people” could easily do away with Gary Kasparov, because cheated-read Gary’s primitive ideas from his fingers during the moves.

So the cellular theories of the Game of Life missed the main thing-the occurrence and accumulation of nonrandom movement, in a rough approximation-the oscillator, “remembering” the dynamics-“Songs of DNA”! The DNA Song polaritons are low-frequency and by physical standards-30 seconds it is very weakly damped, even in brain cells, where the “Song” is the most complex, for 30 seconds they have a range of tens of kilometers, and for “Time of Life” (an amazing coincidence of the technical term, characterizing the attenuation of a harmonic oscillator, is not it) 3 minutes-hundreds of kilometers! The singing “string” is very well “fixed”. But without oxygen fuel, this electro-acoustic “mechanism” does not work. And, again, in a rough approximation, a cell that is without oxygen can live much longer if it has the desired electro-mechanical effect.

A pendulum and a simple mechanical alarm clock, at which the factory has run out, will swing if shaken, and a boy shaking a seriously wounded friend in a war can prolong his life. And in general, the fact that we, as they say, feel the music with every cell is not far from the truth: even at a reflex level it is said that “the legs themselves go to the dance” to certain music, and young people on the dance floors, with the addition of light intensity vibrations, beat in convulsions. The musical accompaniment in the films sets the desired mood / perception, and, as is well shown in the series “Zechka”, a few perfect notes of a well-set voice can make even the Zone (prison area) freeze for a while.

The fact that music helps to think Geniuses-non-professional Musicians is also known, and Genius Theremin, being a professional pianist, can be said to have given birth to Theremin, generating Live Music (or rather reading). So the analysis of the impact of harmony elements from Live Music is simply necessary for the harmonious functioning of the individual’s organism [11].

But a packet of polaritons with a small attenuation, compensated by oxygen replenishment, which ensures their unlimited existence (life), is not Life itself. Such a harmonic set of polaritons simply strictly corresponds to the geometrical structure of the cell. So its existence is only a necessary but not sufficient condition for the existence of Life. And this harmonic package can also be obtained in the framework of the Game of Life, with its modification: in the space of wave vectors as shown in Figure 2, and not in geometric space, “cells” of frequencies can also be obtained. It can simply be used to explain the reaction of a cell to exposure, and the solitons formed by this packet of polaritons easily describe the transmission of nerve impulses. In principle, even a computer can be assembled on these harmonic packets of polaritons as on qubits.

But this is not life yet. The living adagio indicates that the set of polaritons of Life, i.e. both the frequencies and the forms (structures) of the cell change cyclically-continuously (as long as there is oxygen nutrition). This, in accordance with the sine-Gordon

equation, shows that the polariton wave circulating in a spatial cell is somewhat incommensurable to the cell [12]. But this is life inside the cell, which breaks out (divides) when a sufficiently large phase difference accumulates-achieving a critical phase difference leads to a change in the location (to transfer) of charges in the spatial cell, and then to its phase transition to a new state .

The conducted dynamic analysis of the Element (package of polaritons) of Life expands our understanding of inanimate Nature. He revealed another significant aspect of Logarithmic Relativity. As noted above, the algorithm of the Game of Life is also applicable for calculating deviation if the “cells” are built not in a geometric space, but in the space of wave vectors or in the space of velocities. Those. it is possible to translate the algorithm into the space of first derivatives and so on. And this, in fact, is the justification of the basic assumption of Quantum Mechanics-about the physical possibility of replacing the measured physical parameters with operators and/or, as Einstein said: “Some equations of classical physics can be rewritten in the operator form.” Now it’s clear why and what equations allow this rewriting. Moreover, it is clear how to translate classical equations into spaces of higher derivatives. Thus, the Expansion of the Sphere of Conscious Knowledge is also possible in this “dimension” to the degree of derivatives.

Conclusion

Elementary harmonic analysis involves the decomposition of complex vibrations into individual frequencies. But, as you know, a person is able to subtly feel the harmony of complex excitations, both acoustic and optical. Based on the logarithmic relativity, in principle, it is possible that there is a more complex than a separate wave, fluctuations present in both music and painting, and in architecture. It is no coincidence that Architectural Music was presented at the Messian Piano Competition in Paris, in particular the musical work Notre Dame de Paris, which fortunately did not burn out. But, most importantly, it seems to find the harmony of human relations. In it is the Life of the Society of People, and without it, Death. I attach to the article sounds/songs written and performed by my son Daniil Ordin, a participant in the International Paris Pianists Competition named after Messiah.

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