

Four-Dimensional Resonance

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Discontinuity of energy levels, particularly quantized atomic states, is studied in physics in detail. It is characterized by Planck's constant. This effect is considered herein as a particular case. Other examples demonstrating the general law of formation of matter particles and also elements of living matter, such as DNA, are shown.

Curvature

The linear curvature in mathematics is a value which is inversed to some radius and can be measured in reversed meters:

$$r = 1/R \text{ [1/m]} \quad (1)$$

Let's note: in physics, there is an equidimensional value of the same dimension (1/m) called a "wave number." It is reversed to wavelength value. The "wave number" is the number of waves in some resonator and is the integer value for the case of the resonance.

So, curvature of flatness is determined by two crossed lines. For example, for some sphere, we can use the following formula:

$$r = 1/R + 1/R = 2/R \quad (2)$$

It would be logical to develop this approach for three-dimensional space but we have to specify a radius' direction, *i.e.* radius of curvation of the three-dimensional space. Let's use an analog approach. A line can be curved in a direction which is "not included in it," as P.D. Ouspensky wrote.¹ The surface of the sphere is curved in the orthogonal direction to this surface. In both cases, space of line (one-dimensional) or space of surface (two-dimensional) can be self-closed, *i.e.* connected to itself, then any motion in such space becomes cyclic. A parameter appears, characterizing repetition of location (position data) of a point during its motion in the closed space. This parameter depends on motion speed and radius of the closed space. Actually, this is a period of time. Hence, the time has the physical sense only considering some process (motion) in the space of known curvature. Three-dimensional space, observed by us, is curved in the direction of the fourth dimension. It creates periodicity of all processes: from oscillation of a pendulum to the process of isotope decay (half-period of isotopes). We can suggest that space itself is created due to some global process of energy density changing and in such case it is necessary to introduce the notion of the space of some process. Dimensionality of this space is determined by the parameters of the process. It can be more than three dimensions but in this case it is possible to use the theory of smooth variation of dimension (from three to four).

Let's consider technical aspects. Using the "energy densi-

ty" term for one-dimensional space, it is easy to find its physical analog: current density. In two-dimensional space, energy density corresponds with a transverse electromagnetic wave. In its turn, changing of volumetrical energy density is a physical mechanism of creation of the three-dimensional space of process. Periodicity of the three-dimensional space's existence is characterized by its curvature:

$$r = 3/R \text{ [1/m]} \quad (3)$$

Technically, volumetrical energy density in space can be changing due to some modulation of density of any matter (including gas, steam or plasma) or density of electromagnetic energy. A number of electromagnetic methods of longitudinal wave formation in the aether environment also exist. It is related with the notion of "time" in three-dimensional space. Below we'll consider the longitudinal waves and technical aspects. But now let me present some examples of calculations of matter wave resonances in Nature.

Calculation Examples

1. Planet

Rotation period of our planet T is 31,557,600 seconds, which is equal to frequency of electromagnetic oscillation

$$f = 1/T = 3.16886 \cdot 10^{-8} \text{ [Hz]} \quad (4)$$

and wavelength

$$L = c/f = 9.46...10^{16} \text{ [m]} \quad (5)$$

So, the curvature of the corresponding resonator (a value reciprocal to wavelength) is the following:

$$r = 1/L = 1057.00 \cdot 10^{-20} \text{ [1/m]} \quad (6)$$

Let's note that it is an integer value (1057) with good accuracy. Due to the fact that a dimension of "1 meter" was introduced as 10^{-7} of a distance (a part of meridian) from the North Pole to the Equator of the planet, the integer value of curvature of the electromagnetic resonator of the planet, found by us, is predictable and accountable. Integer values of curvature for the case of matter particles and other natural

objects are interesting facts discovering mechanism of its formation as resonance four-dimensional processes in aether. Parameters of this process are determined by the planet process since the planet is the main mass object in our space-time. We will give some examples.

2. Bohr's Atom

The radius of Bohr's atom (hydrogen) is $R = 0.52917$ [A]. The length is: $L = 6.28 \times 0.52917... = 33.2491846191$. According to Equation 3, we find that the corresponding curvature is:

$$r = 3/L = 1.00 \times 10^{-9} \text{ [1/m]} \quad (7)$$

It should be mentioned that it is a simplest atom, *i.e.* element of matter, and curvature of its space amounts to one. In other words, this is a process taking place in a similar four-dimensional resonator as our planet four-dimensional resonator, but of another mathematical order. So, the Universe is a fractal design.

3. Proton

Let's calculate the wavelength of a proton having mass equal to

$$m = 1.6726231 \times 10^{-27} \text{ [kg]} \quad (8)$$

The wavelength (not taking mathematical power into account) is:

$$L = h/mc = 0.75676739... \text{ [m]} \quad (9)$$

The curvature of the proton's space is an integer with fine precision too (not taking mathematical power into account):

$$r = 1/L = 132141.000 \text{ [1/m]} \quad (10)$$

Taking mathematical power into account is not important in this case, because this is just a matter of unit of length measuring, *i.e.* the scale aspect. It is important that we obtain the integer curvature values with high precision in this case also.

4. Resonance Parameters of a DNA Molecule

Parameters of a DNA helical spiral molecule are known: diameter is 20 A, jaw is 34 A, branch displacement is by 0.7 period. One turn length in a flatness measurement is 71.44117 A. The value reciprocal to this wavelength, *i.e.* curvature of one turn, is an integer with precision of the third sign after dot (not taking power into account):

$$r = 1/71.44117... = 13.997 = 14 \text{ [1/m]} \quad (11)$$

It should be taken into account that there are 10 nucleotides in a convolution of a DNA helix. Branches are counter-displaced by 0.7 convolutions. Length of this section is 50 A:

$$L = 0.7 \times 71.44117 = 50.00 \text{ [A]} \quad (12)$$

Correspondingly, curvature of this part of the DNA molecule is also an integer $r = 2.00$ [1/m], not taking mathematical power into account. Considering the fact that both DNA branches are "twisted" around a cylindrical surface, we can mentally superpose (join) them after linear displacement

along the cylinder's axle for a distance corresponding with a single curvature. We can make the conclusion that DNA structure is a reflection of a structure of some real energy-information field, which is not investigated yet. From this point of view, a DNA molecule can be considered a parametrical four-dimensional resonator generating receiving energy oscillations of the given field to receive or to emit its information signals. Below, we will describe which types of real physical fields can have such structure to be used for DNA molecule communication.

A similar method can be used for calculation of resonance parameters of processes corresponding to a codon (a part of the DNA molecule consisting of three nucleotides), the whole code-length (19.2 convolutions), information code-length (18.3 convolutions), and stop-codon-length (0.9 convolutions).

It is necessary to note that the molecule is twisted in proportions known in wireless engineering as optimal ratio of the length of one turn L and the jaw X for antennas of circular polarization

$$L/X = 2.1 \quad (13)$$

So, the DNA molecular is designed as an optimal antenna. Taking this fact into consideration, let's consider the physical basis of a method of transformation of energy and information signal peculiar to DNA. Understanding of this method will allow developing systems of managed wave influence on DNA molecules to biological objects in order to launch an organism's reconstruction (rejuvenation) and, thereby, preventing degradation of biological systems caused by changing of its genetic code.

Longitudinal Waves

A longitudinal wave is a wave where changing of energy density occurs in the direction of wave distribution. An acoustic longitudinal wave is known which is an alternation of compression and decompression of gas (air). Since Tesla and Hertz, a discussion about the existence of longitudinal electromagnetic waves in aether continues. Today, progressive scientists study methods of generation and detecting such waves, while official theoretical science denies this opportunity. Why? The reason is that the longitudinal wave can exist only in some medium, *i.e.* in a physical matter permitting compression and decompression (changes of energy density). To acknowledge existence of such matter, *i.e.* a global aether, is to acknowledge existence of an absolute reference frame, which practically means existence of God. Actually, this is discussed by theoretical scientists while the practicing ones use experimental facts. In 1932, Tesla wrote that the universal medium is a gaseous body, where only a longitudinal wave can be spreading, creating alternating compression and decompression similar to those generated by sound waves in air. Thus, a wireless transmitter does not generate Hertz waves, which are a myth, but generates sound waves in aether. Their behavior is similar to the behavior of sound waves in air, apart from the fact that their speed is equal to the speed of light due to huge elasticity and very small density of this environment.² Now, it is possible to say that creation of longitudinal waves in aether is an easy technical task and, practically, is indirectly used in special telecommunication systems. Some researchers purposefully

study generation of aether currents by dividing a flow of electrically charged particles and a flow of aether particles using special technical devices (Tesla invented a magnetic breaker of electric arc for this purpose).

Then, let's study an analogy with another famous theory, which will help understand connection between longitudinal waves and the idea of "time." Russian scientist Nikolay A. Kozyrev created a theory of "active properties of time"³ and showed experimentally that any irreversible process in a material object (*i.e.* the changing of entropy) generates "a wave of time density." Methods of detecting these waves show that they are longitudinal waves. Detectors based on quartz resonators, used in the experiments of Kozyrev, showed changing of oscillation frequency by some orders while, under usual conditions, quartz resonators have stable oscillation frequency. In fact, this wave is a compression-decompression of the space itself, *i.e.* comparing space parameters of the compression area with parameters of the depressed area, some relative difference of object's sizes and speed of processes can be found. These changes in matter of the detector's sensors led to changing of their indications, for example, electrical resistance of resistors or oscillation frequency of quartz changes. It is possible to say that aether density determines space parameters and speed of process of existing for any material object, *i.e.* speed of time. Moreover, Kozyrev showed that changing of aether density leads to entropy or syntropy changes in matter. On the other hand, these changes create waves of "time density," *i.e.* waves of aether density, which can be considered "waves of space dimension."

Coming through air, a longitude wave in aether also creates a sound wave, which can be easily detected. Due to this, many people mistakenly think that it is enough to generate usual sound waves although the method of sound generation plays an important role. For example, one of the methods to generate volumetrical vibrations of matter is magnetostriction effect creating sound waves, among others. Nevertheless, if in the case of magnetostriction the oscillator is placed in vacuum, it will produce aether vibrations only, such as the waves of energy density we have discussed above.

The research of P.P. Gariajev⁴ showed that a biological genetic system can transfer information using electromagnetic and sound waves. The author discovered in experiments the above-mentioned indirect effects of the longitudinal wave in aether since such waves have sound and electromagnetic components. An interesting practical question appears: how can this wave be generated or perceived by DNA molecules?

Technically generation of electromagnetic waves with a longitudinal component is possible using spiral antennas (analogy between such antennas and DNA structure was discussed above), and also in the case of volumetrical matter density changes or surface charge density changes. Special characteristics of longitudinal waves generated by changing of plasma density were investigated in detail by Alexander V. Chernetskii⁵ when he developed research on the so-called "self-generating discharge." We should note that, using the half-period of "negative electrical conductivity" when an electric field vector is directed towards current displacement vector, according to the theory of Chernetskii, "conditions are created for energy transmission from the environment to

the wave." Due to this, the longitudinal waves can exist without external power source and without transmission of the wave for a long time. Actually, this is aether life forms. Interference of longitudinal waves generated by any irreversible process, including biological ones, creates a permanent (self-maintaining) holographic picture of the universal information field of the planet, the so-called "noosphere." Studying the mechanism of DNA molecules information exchange will allow creating new telecommunications methods. In connection with this, experiments of Akimov and Shipov⁶ in this field show considerable promises. Also the research on DNA molecule irradiation by non-Hertz (longitudinal) electromagnetic waves⁷ shows that there is an analogy between methods of creation and reproduction of holographic information and methods of creation and reproduction of genetic information. But we have to note that in this case it is a four-dimensional hologram. Let's consider this idea in detail.

Four-Dimensional Hologram

This idea of a four-dimensional hologram is an original term introduced here. In typical holography, information is saved in the depth of a photo-emulsion plate in the form of interference layers created by light waves incoming from different points of the object while it is scanned by a laser ray during the holograms creation. In four-dimensional holography, information is saved on a time interval, which cannot have a size less than the minimal one. This minimal size of the time interval is connected with Planck's constant.

Then, during reproduction of the three-dimensional hologram, every point of the plate (surface) gives a whole image of the object because the ray of light (usually the laser beam) penetrates in the emulsion's depth and is reflected in every part of the interference picture with a different angle. The plate, where the three-dimensional hologram is saved, can be broken to pieces but each piece will give a whole picture of the object in case a surface's part is big enough for the ray of light to come in its depth at a certain angle. It is analogous to some minimum period of time for the four-dimensional case or with Planck's constant for the quantum world.

Accordingly, in order to save and reproduce the four-dimensional hologram, one point of the three-dimensional space is enough but the minimal time interval is necessary. On this time interval a pattern of Universal history (all irreversible processes) is saved as in an emulsion's depth of three-dimensional hologram. It is clear that technical methods for the case of a four-dimensional hologram differ from the ones designed for the three-dimensional hologram. Instead of an image of the object showing its three-dimensional form in space, we will reproduce events or processes as a reflection of energy density changing in time (a four-dimensional image). The suggested concept also allows obtaining some information about future events, *i.e.* about future irreversible processes in the material objects, which actually exist now.

Conclusions

The conclusions are obvious: material particles of each planet are resonance vortex aether processes and characteristics of these processes depend on space-time parameters of this

planet. Other planets determine other parameters. This idea is not new, but the calculating method is discussed here for the first time. Searching for facts confirming the concept led us to this discovery, which lies in finding connections between the value of space curvature of natural objects—for example, proton or any matter particle—and the planet's space curvature. It is discovered that curvature of the given objects (with high precision) is an integer, when we use an SI system and decimal numeration. These results can be explained by the fact that the measuring system uses a concept of "meter" introduced into practice in 1795 as a one ten-millionth sector of the Earth meridian from the North Pole to the Equator. The practical sense of the new approach is that it allows calculation of resonance conditions of creation of the material elements (both organic and other matter) for each planet. It is particularly important for space projects and experiments on changing of aether density, time and gravitation control. Moreover, development of the four-dimensional curvature concept allows understanding the physical meaning of time and developing a theory of four-dimensional resonators, which create special conditions for vortex aether processes and, therefore, generate stable matter particles or isotopes. Studying four-dimensional resonators clears the way to practical research on teleportation of matter, radioactivity control and synthesis or controlled transformation (transmutation) of matter particles for energy generation.

Thus, we can ground quantifying action by Planck as a particular case and understand the physical meaning of the discovered rule of integer curvature values of the space of natural processes. Obviously, there is the minimal time interval (period) determined by energy parameters of every process creating a space, for example, the space of the planet, space of some atom or DNA molecule. Integer value of curvature in the macro-world (the planet) and in the micro-world (Bohr's atom) proves the fractal structure of the Universe.

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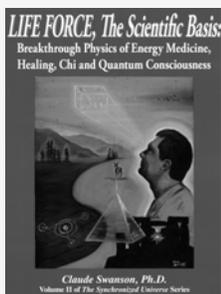


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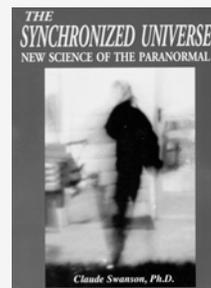
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