New Cartesian interpretation of quantum mechanics

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New Cartesian physics does a principle of uncertainty Heisenberg by a principle of definiteness of points of space-matter (Principle of physical irrationality) from which in the natural image the likelihood way of the description of events in the quantum mechanics follows. New Cartesian physics connects probability of event in the quantum mechanics with Lorentz's factor of the special theory of relativity.

In the Cartesian identity «space ≡ matter» points of geometrical space become material and consequently capable to movement. Unlike its geometrical space it is necessary to name physical. The principle of uncertainty Heisenberg in physical space passes in the contrast i.e. becomes a principle of definiteness of these points. To show it necessary to take the most known attitude of uncertainty Heisenberg - between coordinate and an impulse of a particle in space:

$$\Delta x_i \Delta p_i \geq \frac{\hbar}{2}$$

Where « $\hbar$ » is Planck's constant (h) divided on 2π.

Note that here on the right and at the left we have expression of the moment of an impulse and consequently $\Delta x_i = x_i - x_i^0$ define an increment radius-vector of rotation, where x_i^0 also x_i coordinates of the ends of a site rotating radius-vector in the Cartesian identity «space ≡ matter». The principle of uncertainty Heisenberg between coordinate and an impulse of a particle it is possible then to write down so:

$$\Delta p_i \geq \frac{\hbar}{2(x_i - x_i^0)}$$

Where « $\hbar$ » is Planck's constant (h) divided on 2π.

From this formula we see, when current coordinates x_i go to x_i^0, the increment of an impulse becomes infinite:

$$\lim_{x_i \to x_i^0} \Delta p_i \geq \lim_{x_i \to x_i^0} \frac{\hbar}{2(x_i - x_i^0)} = \infty$$

This inequality show, that reduction of the interval containing points with coordinates $x_i^0 \leq x \leq x_i$, there is an increase in an increment of the impulse necessary for allocation of these points of space-matter from its other points. In the infinitesimal interval containing a point, this increment should be infinite greater. For this reason to allocate this point as independent object it is impossible. Thus, the principle of uncertainty Heisenberg in New Cartesian physics becomes a principle of physical irrationality of points of space-matter.

In the mathematician irrational number, for example number π, it is possible to show with a various degree of accuracy in the form of intervals:

3<π<4;

 3,1<π<3,2;

3,14<π<3,15 , etc.

Similarly, rational coordinates x_i и x_i^0 defining an interval localizations of an impulse p, define an irrational point x located between them $x_i^0 \leq x \leq x_i$. The irrational point in the Cartesian identity «space ≡ matter» will be expressed in the form of a following interval:

$$(x_i - \frac{\hbar}{2\Delta p_x}) \angle x \angle (x_0 + \frac{\hbar}{2\Delta p_x})$$

Where h - Planck's constant;

p_x - a projection of the impulse forcing points into rotary motion;
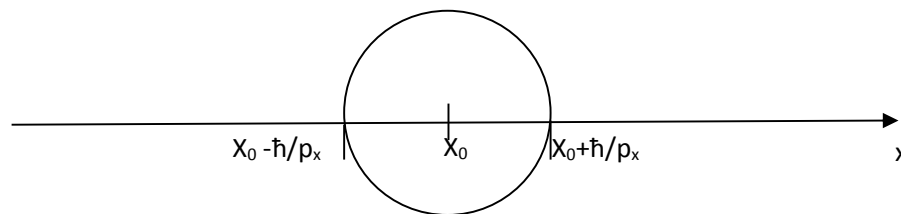
x_0 and x_i the rational Coordinate $x_i \leq x_i^0$

x – the irrational points.

According to this expression, localization of a point in the Cartesian identity «space ≡ matter» can be made as an interval with any accuracy. Physically to reduce

an interval up to zero it is necessary to increase technically an impulse infinitely i.e. to allocate one point from other points, infinitely big impulse is necessary. Thus, physical objects are not rational points of space-matter which in geometry are defined as objects without length and width, it irrational points - intervals which always have both length and width.

Thus, the irrational point in the Cartesian identity «space ≡ matter» is its infinitesimal interval which remains last inaccessible point of real life. Irrational points in the Cartesian identity « space a matter » participate in formation not only spaces, but also corpuscles of substance.

The attitude of uncertainty Heisenberg - between coordinate and an impulse of a particle limits the law of preservation of the moment of an impulse existing in the mechanic:

$$\begin{cases} mvR = const \\ \Delta(mv)\Delta R \geq \dfrac{\hbar}{2} \end{cases}$$

The law of preservation of the moment of an impulse is formulated for material points possessing by the mass. According to this law, for a material point (body) with mass *m* which moves in a rotation in various orbits, equality will be carried out

$$mv_1R_1 = mv_2R_2$$

Reducing in this expression mass *m*, we shall receive expression

$$v_1R_1 = v_2R_2$$

This is Kepler's first law and shows that movement of points of space-matter in a rotation does not depend on mass and concerns to its any point. If the point of space-matter rotating on a circle radius-vector $_{R1}$, washes the area $_{vR1}$ at reduction of radius of rotation up to value $_{R0}$ speed of rotation will increase and becomes equal $_{v=v1 \ (R1/R0)}$. In

this case speed becomes infinitely big at $R_{0=0}$. However, there is revealed Lorentz's by formulas a restriction of speed by value of speed of light. It is obvious, that this restriction is connected with restriction of the moment of an impulse by value of a constant of Planck. The attitude of these two constants forms quantum size:

$$\Delta m \Delta R = \frac{\hbar}{c}$$

This formula shows that there is no quantum of mass, and there is only a quantum of product $\Delta m \Delta R$.

Let's consider equality of the moment of an impulse in an orbit with a speed v and the moment of an impulse in an orbit with speed of light *with*:

$$v_0 R_0 = c R_2$$

Let's lead some transformations, we shall receive:

$$\frac{R_2}{R_0} = \frac{v_0}{c}$$

$$\left(\frac{R_2}{R_0}\right)^2 = \left(\frac{v_0}{c}\right)^2$$

$$1 - \left(\frac{R_2}{R_0}\right)^2 = 1 - \left(\frac{v_0}{c}\right)^2$$

$$\frac{R_0^2 - R_2^2}{R_0^2} = 1 - \left(\frac{v_0}{c}\right)^2$$

Let's designate $R_0^2 - R_2^2$ as R_1^2, we shall receive in a final kind:

$$R_1 = R_0 \sqrt{1 - \frac{v_0^2}{c^2}}$$

This formula is similar to the formula of transformation of Lorentz; it shows reduction of radius at aspiration of speed of rotation to speed of light. Multiplication on 2π the formula is led to a kind: $\frac{S_1}{S_0} = 1 - \frac{v_0^2}{c^2}$ where the attitude $\frac{S_1}{S_0}$ shows probability of that the particle on the area S_0 will appear in S_1

If to take function of a wave which consider in the quantum mechanics
$$\Psi = Ae^{-(i/\hbar)(Et-px)}$$
It can be written down in the form of the attitude:

$$\Psi = \frac{A_1 e^{i\frac{px}{\hbar}}}{A_2 e^{i\frac{Et}{\hbar}}}$$

Here A, A_1 and A_2 - modules of complex numbers in which geometrical representation they are radius-vectors. In the quantum mechanics the square of the module of wave function is probability of event of a finding of a particle in a time interval $t + \Delta t$ in the field of with coordinates $x + \Delta x$.

$$|\Psi|^2 = |A|^2 = \frac{|A_1|^2}{|A_2|^2}$$

Multiplication of numerator and denominator of fraction to 2π formulas is led to a kind:

$$|\Psi|^2 = |A|^2 = \frac{2\pi|A_1|^2}{2\pi|A_2|^2} = \frac{S_1}{S_2}$$

Where the attitude $\frac{S_1}{S_2}$ shows probability of that the particle on the area S_2 will appear in S_1. Thus, identity of probability of event in the quantum mechanics with the formula of transformation of Lorentz is found out.

$$|\Psi|^2 = \sqrt{1 - \frac{v_0^2}{c^2}}$$

According to this expression the probability of detection of a particle of physical space depends on its speed. If it is based in some system of readout the probability of its detection is equal it 1 if it moves concerning some system of readout with a speed close by the speed of light the probability of its detection decreases that to equivalently under pressure of physical space. At movement of space-matter with speed of light, it appears on the verge of disappearance and formation on its place so-

called « a black hole ». At movement of an electromagnetic wave formation of black holes is prevented by mobility of space-matter which has time to fill them with speed of light. At creation of conditions interfering their filling, for example at vortices movement of physical space, independent physical objects which can be named material particles are formed.

In Cartesian physics movement of physical space, in general affirms, that, is vortices. Thus rectilinear movement is represented movement on a circle of infinitely big diameter or movement on an infinitesimal site of a curvilinear trajectory, i.e. is a component of vortices movement. The contradictions arising at application of formulas of Lorentz to rectilinear movement expressed in reduction of lengths of pieces and time intervals in various inertial systems of readout force to concern to existence of absolutely rectilinear movement critically. New Cartesian physics approves, that movement of physical space should occur so that the paradoxes arising at application of formulas of Lorentz, were not observed. Thus parameters of paradoxes pass in characteristics of real processes.

The attitude of uncertainty Heisenberg transformed in неокартезианской the physicist in a principle of definiteness of irrational points of space-matter, shows, that in any point of a space-matter moving a whirlwind to an infinitesimal increment of area around of it there corresponds infinitely big increment of an impulse, i.e. it possesses property of indissolubility and a continuity that there corresponds Descartes' to ideas about identity « space a matter ». In the best way this property of space-matter characterizes product of two existing restrictions of the moment of an impulse and speed ch a dimensional square of a charge and a stream of forces being by value through the closed surface. Hence, new Cartesian physics is based on one law which approves, that in space-matter as in the environment there is a force, which stream it automatically the movement does to constants.

$$\iint\limits_{\sigma} F_n(P)d\sigma = ch$$

Where h - a constant of Planck,

c - speed of light in vacuum.

The stream of forces space-matter on each irrational point, equal ch is an analogue of atmospheric pressure for the physical vacuum, causing its quantum properties. To come to movement a point of space-matter should overcome this stream of force directed on it. Then the absolute stream of forces will be equal

$$\iint F_n(P)d\sigma = ch \pm \Delta\Phi$$

Here $\Delta\Phi$ a deviation from a constancy of the stream, causing movement of space-matter. For electric area is a stream from an electric charge $q1q2/\varepsilon0$, for a gravitational field of gravitation, this stream is equal γMм, where and m. - weights of particles.

Thus, any local deviation of size of a stream of forces from average value *ch* causes movement of space-matter as a result of which the constancy of a stream of forces is restored. Except for natural fields of an attraction existence of this stream of forces proves to be true Casimir effect at which formula there is a product *ch* and in which force of an attraction results from shielding of this stream by cyclic movements of space-matter in atoms.