

# NEOCLASSICAL PHYSICS - CORPUSCULAR QUANTUM MECHANICS

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## Abstract

In the article the motion of a body on a circumference is updated and the hypothesis of originating of a gravidynamic field is stated at motion of gravitational charges.

## 1. ABOUT UNIVERSAL ENERGY of REPULSING

Let's untwist a small weight on cord. Thus the small weight has potential energy of attraction to center of rotation, but let's doubt that the small weight, moving on a circumference, has kinetic energy, and we shall consider of its potential repulsing. It seemed, that this problem of clean convention and has not principled importance, you see accommodating mathematics is capable in appropriate way to formalize and this idea. However in further we shall see, that it not so, that this idea coincides judgement of the Creator on this point. The problem about potential and kinetic energy of a body specially was not studied, since the orthodox science represents apparent always:

- The kinetic energy of a body is a measure of its mechanical motion and is measured by that work, which one can be made by this body at its braking before complete stop.

- The potential energy calls energy dependent only on a positional relationship of interacting mass points or bodies. (B.M. Yavorsky, A.A. Detlaf, "The reference Book on physics for the engineers and students of high schools", " Science ", M., 1964, page 58,59).

J. Orir in the book: "Popular physics" (page 132-134) gives following definitions kinetic and potential energy of bodies.

$$E_k = \frac{1}{2} Mv^2$$

Half of product of a body mass on a square of its speed is called as kinetic energy of this body. All work, made above a body, on change of value of its speed is exhibited as kinetic energy of a body.

The body acquires potential energy every time, when it is affected by force  $F_c$  (called conservative), dependent only from its position, but not dependent from paths. The most common definition of potential energy is given by expression:  $\Delta U = -F_c \cdot \Delta s \cdot \cos \theta$ , where  $\theta$  angle between a direction  $F_c$  and movement  $\Delta s$ .

At motion on a circumference the body fixed concerning center of rotation, therefore has only potential energy. By releasing a cord, we shall see a small weight, leaving from center, i.e. certain it other condition. Besides releasing a small weight on miscellaneous spacing interval from center of rotation (thus a moment of momentum), we shall be convinced, that the closer to center the small weight is gyrated, the stronger is repulsed from it. The mathematical design of energy of moving on orbit gravitational or diverse charge, as certain kind of potential energy of repulsing (numerically equal  $mV^2/2$ ) does not introduce ados.

In connection with numerous questions of the readers on generalpurpose potential energy of repulsing, I shall result in here plus articulatings. The official formulations kinetic and potential energy are unsufficiently correct. If in a system of interacting bodies spacing interval between them does not vary, the system has potential energy. If the body is gone uniformly and rectilinearly, it has kinetic energy. In all remaining cases a mixed condition at which one the kinetic energy passes in potential or on the contrary or they are present simultaneously and separately (the bead is wheels without friction on a horizontal surface). As is known, the force is of derivative energy on spacing interval. For example, uniformly

driving body has kinetic energy  $W_k = \frac{mV^2}{2}$ . As in this case  $V = const$ ,  $\frac{dW_k}{dr} = 0$ , i.e. resultant all forces is peer to zero point. At motion of a body on a circumference

generalpurpose potential energy of repulsing  $W_p = \frac{mV^2}{2}$ . To find a generalpurpose repulsive force (centrifugal) before to differentiate  $W_p$  on radius it is necessary to apply a law of conservation of angular momentum of a body  $S = mVr$ . If  $m$  does not vary, pursuant to this law  $Vr = \alpha = const$ . Then  $W_p = \frac{m\alpha^2}{2r^2}$ . Now it is possible to find centrifugal force  $\frac{dW_p}{dr} = -\frac{m\alpha^2}{r^3}$ . The angular momentum of a body, driving on a circumference, can be

changed arbitrary, therefore we shall finally have  $F = \frac{dW_p}{dr} = -\frac{mV^2}{r}$ . If the connection of a body with center of rotation will be interrupted, the potential energy of generalpurpose repulsing is transformed into kinetic energy of a body (spacing interval between bodies, which one interacted, has become to vary, and the body, leaving from center, is gone uniformly and rectilinearly).

It is necessary again to return to this subject with plus explanations. For the readers the absence of kinetic energy for a body driving on a circumference is not stacked in any way in a head. We so have got used to consider, that the driving body can somebody knock. And time can knock - means has kinetic energy. For a determinancy, we shall consider behavior of a Earth satellite. It appears, that in a direction perpendicular orbit a satellite anybody to knock can not, therefore has not kinetic energy in this direction. If it will knock somebody in a direction of orbital motion or on it, for example, meteorite will knock in that a direction, the part of potential energy of generalpurpose repulsing will turn to kinetic energy in a direction perpendicular orbit and the satellite will take in outcome other orbit with new value of potential energy of generalpurpose repulsing and zero kinetic energy before following possible impact. Let's suspect, that in it the meteorite with counter motion has got. In this moment was destroyed the balance between attractive force to the Earth and centrifugal force. From this equilibrium the expression for the maiden solar escape velocity on steady

orbit is easily received:  $V = \sqrt{\frac{GM}{r}}$  (a). At the moment of shock the equality (a) was turn

intoed an inequality:  $V < \sqrt{\frac{GM}{r}}$  (b). The attractive force to the Earth becomes more centrifugal force, therefore to restore the status quo it is necessary to reduce radius of orbit

up to a new balance of forces:  $\frac{GMm}{r_1^2} = \frac{mV^2}{r_1}$ , that is equivalent to increase of potential

energy of generalpurpose repulsing ( $r_1 < r$ ). Thus potential energy of generalpurpose repulsing receives zero value only on perpetuity and is augmented at nearing orbit to a central body. In view of a principle of conservation of moment of momentum the potential energy of generalpurpose repulsing is inversely proportional to a square of spacing interval up to a central body, and the energy of a gravitational attraction is inversely proportional to spacing interval up to a central body in the maiden degree. As a result of addition, the course of change of potential energy depending on spacing interval up to a central body will be had a potential well about existence by which one by an official astronomy does not know. In outcome for it remains by a riddle, why orbits of planets have an observed osition, instead of any another.

One more evidence of absence of kinetic energy for a body driving on a circumference, consists in following. Is ideate to itself, that in weightlessness a body of mass  $m$  we have attached to a fixed axis of rotation on a lengthy thread, stretched slightly thread and have pushed a body in a direction a perpendicular thread with near-zero speed. Let's consider, that in the initial moment our system had zero kinetic and potential energy because of minor speed of an initial rotation about an axis. Step-by-step thread is wound on rotation axis, its length decreases, and the peripheral speed of motion of mass is augmented. What we shall watch at decreasing a radius of gyration, for example, in 2 times? Apparently, that the peripheral speed of rotated mass will become considerable and ad lib large at sufficient initial length of a thread. Apparently, that the energy of our system was increased up to

considerable value. Now it is necessary to find out, whence it has appeared and that it energy. Perpetuum mobile otherwise is easy to create, which one catches flying by subjects, untwists them and rejects with large kinetic energy. Rotated mass is under operating of two forces - force of pull of a thread and centrifugal effort. These forces are not balanced, since force of pull of a thread all time it is a little more centrifugal effort at the expense of that mass is step-by-step displaced to center of rotation. Thus, the work is effectuated by thread, overcoming centrifugal effort. Apparently, that the value of this work will be peer  $\frac{mV^2}{2}$ , where  $V$  - reached peripheral speed of mass. The obtained energy in any way cannot

be connected with kinetic energy of mass since in a direction to perpendicular motion any force work does not commit, and in a direction of peripheral speed any force does not act. The sanction of this paradox is, that at approach with rotation axis the potential energy of generalpurpose repulsing is augmented, and to what speed there is this approach has not value, that is characteristic just for potential energy. The situation is similar to that, at which one the crane lifts shipment, winding on a rope on a barrel.

Thus, I have answered problems the A. Poincare concerning potential energy, which one till now remained without the answer (G.M. Golin, C.R. Filonovich. Classics of physical science. M., 1989, page 492): «That to materialize energy it is necessary to localize, it; concerning kinetic energy it is simple, but not so the business with energy potential is. Where to localize potential energy called by attraction of two celestial bodies? In one of two? In both? In an interspace?».

One more problem, on which one is necessary to be stopped by consideration of motion of a body on a circumference, is a problem of existence of a centripetal acceleration not as mathematical abstraction, and as physical reality.

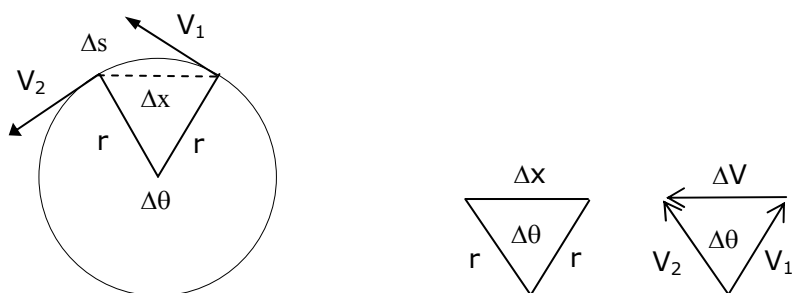
The man on equator is under operating of «centripetal acceleration», which one is piled with acceleration of gravity, therefore should weigh more, than on a pole. However actually all is on the contrary: the centrifugal force partially compensates force of weight. Therefore fictitious not centrifugal force is (as assert orthodoxes) and «centripetal acceleration».

The acceleration calls a vector quantity  $\mathbf{w}$ , describing a rate of change of speed of a driving point and equal first derivative from speed on time:  $w = \frac{dv}{dt}$ . The acceleration vector

lies in an adjoining plane passing through a main normal and tangent to a trajectory, and is directed to the side of a concavity of a trajectory (B.M. Yavorsky, A.A. Detlaf "The reference Book on physics for the engineers and students of high schools", "Science", M., 1964, page 20).

The concept of a centripetal acceleration is entered by a different image. We shall take advantage of the book: J. B. Marion "Physics and the Physical Universe", "World", M., 1975, page 126. Let's consider equable motion of a body on a circumference.

As the velocity vectors  $V_1$  and  $V_2$  are perpendicular to radiuses of a circle  $r$ , a triangle,



formed in two radiuses and chord  $\Delta x$ , is alike to a triangle formed  $V_1$ ,  $V_2$  and  $\Delta V$ . both triangles isosceles, and the angles between the equal legs for them are identical and are peer  $\Delta\theta$ . Thus, numerical value of an alteration speed:  $\Delta V = \frac{V \cdot \Delta x}{r}$ . The acceleration is

determined by expression:  $a_y = \lim_{\Delta t \rightarrow 0} \frac{\Delta V}{\Delta t}$ .

Substituting value  $\Delta V$  and taking out for the sign of a limit of constants, we shall receive:  $a_y = \frac{V}{r} \lim_{\Delta t \rightarrow 0} \frac{\Delta x}{\Delta t}$ . At decreasing  $\Delta t$  up to infinitesimal values the chord  $\Delta x$  becomes to an equal arc  $\Delta s$ , and the limit of ratio  $\Delta s/\Delta t$  is peer to peripheral speed  $V$ . Therefore:

$a_y = \frac{V^2}{r}$ . It is easy to see, that the acceleration vector conterminous on a direction with vector  $\Delta V$ , will be directed to center of a circumference if to esteem infinitesimal period.

If to consider, that the body, driving on a circumference, has potential energy of repulsing, on a problem on existence of a centripetal acceleration we at once receive uniquely negative answer. When the official science states, that acceleration - the vector quantity having a direction, conterminous with a direction of change of velocity vector in course of time, and results the applicable formula and scheme of definition of a difference of vectors, it puts a cart ahead of the horse in the sense that causes physics adequately to mirror to mathematics, rather the reverse. From the physical point of view the main criterion of even movement of a body on a circumference extreme is simple: the peripheral speed of its motion remains to a constant  $V = const$ . Let's try to translate this outgiving to the language of mathematics. Apparently, that, in this case, it is necessary to consider speed not vectorial, and scalar value. Otherwise translation will become unidentical and will gain opposite physical sense  $V \neq const$ , since identical the vectors with an equal module and only parallel each other are considered. As mathematics can not give more that in it is originally enclosed, it and gives us acceleration, which one does not exist. It is one of examples that we were not learned yet correctly to translate into the language of mathematics even simple physical notions, it concerns and to return translation. For the incorrigible fans to juggle with vectors, it is possible in general to refuse speed with arrow and to exchange by its ratio of length of orbit to a period of rotation. Such ratio at all desire is impossible to present as vector, since numerator and denominator of its scalar value.

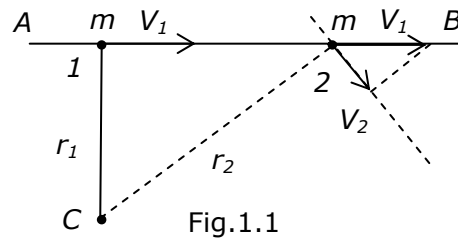
There is a simple experimental capability to reduce to zero point attractive force to center of rotation and at the same time to leave without change a repulsive force from center. For this purpose it is necessary to be inside the capsule, the walls are hardly connected which one to center of rotation. Inside this capsule we shall completely legibly fix change of a repulsive force depending on a radius of gyration at the same mechanical moment of system not only simple physical experiments, but also own feels. Let's try to lower a bead on a floor of this rotated capsule. It trundles with acceleration instituted second Newton's law, under operating of force of universal repulsing, but not to rotation axis, and in the counter side, also will stay only then, when the force of universal repulsing which is operational on a bead, will be balance by reaction of the capsule wall, which one also acts on a bead.

One more weighty argument that acceleration at motion on a circumference misses consists in following. The energy conservation law regulates radiation of photons only at negative acceleration of electric charge (bremsstrahlung), at positive acceleration the energy is occluded from an environment and the radiation is impossible. "Acceleration", bound only with a veering of velocity vector has not neither positive, nor negative sign. On the language of mathematics it means zero point, and on the language of physics - absence of acceleration. Synchrotron emission, which one result, ostensibly, direct evidence of radiation at even movement of electric charge on a circumference, will be reviewed in the theory of atom (see also chapter 11.5); it has completely other nature.

In a considered case a centripetal force (it is better to tell - attractive force) is perpendicular to velocity vector, therefore, work does not commit also acceleration does not cause. On this basis the introducing of concept of a centripetal acceleration has inflicted an apparent harm to physics (especially to physics of a microcosmos), though and it is understandable, as aspiration "to keep" the second Newton's law. Below we shall see that in case of motion of a body on a circumference the second Newton's law is fair, but for other reasons.

The even movement of a body on a circumference is full analogy of even movement of a bead on a horizontal surface. Thus the attractive force of a bead to the Earth applied on a bead, is equilibrated by forces of reaction of an abutment surface also applied on a bead, therefore bead rest in a direction of operating of these forces (as is in a potential well). Thus nothing hinders it uniformly to move in a perpendicular direction, not committing work.

Precisely that takes place and at motion of a body on a circumference, where the attractive force can be of any genesis, and the repulsive force from center of rotation is universal for any bodies. These two forces are counterbalanced, and the motion in a direction, perpendicular operating of forces, takes place without accomplishment work.



Negating existence of a centripetal acceleration, we simultaneously negate also first Newton's law for motion of a body, putting in completely equivalent conditions even movement of a body on a circumference and even rectilinear motion. Running forward, it is possible to tell, that any free bodies, starting from microparticles and finishing space objects simultaneously will realize these two rights in an equal measure, moving on a screw line with equal translational and tangential velocity. Further we shall see, that for comprehension of motion of microparticles and space objects it is necessary to sacrifice not only first, but also third Newton's law and this victim appears justified. After such statement the author is sure, that the adherents of doctrines in science is abandoned a reader's auditorium, therefore addresses to stay with the request to be patience, which one will be compensated.

For the greater clearness of this problem we shall consider, at first blush, indisputable case, in which one the driving electric charge does not beam photons - even and rectilinear motion it (figure 1.1).

The electric charge of mass  $m$  uniformly moves on a straight line  $AB$  from perpetuity  $A$  in perpetuity  $B$ . We shall take an arbitrary point  $C$  with which one a charge does not interact in any way. Let's consider motion of a charge comparatively this point. In a point  $1$  shortest distance from  $C$  up to  $AB$  a moment of momentum of a charge comparatively  $C$ :  $S = mV_1r_1$ . For any arbitrary point  $2$  on a straight line  $AB$  it is possible to find a projection  $V_1$  on tangent to a circumference of radius  $r_2$ , which one we shall designate  $V_2$ . From a similarity of two triangles is discovered, that  $mV_1r_1 = mV_2r_2$ .

All reasoning will not change, if the body  $m$  was gyrated around of a point  $C$ , and in a point  $1$  connection has broken. Thus, at even and rectilinear motion of a body its angular momentum of concerning any point of space remains to a constant and explains inertia of bodies. **The inertia is a demonstration of a law of conservation of angular momentum of a body.** Any attempts to change speed of a body or direction of this speed are connected to energy consumption on change of angular momentum of a body.

This outcome is possible to interpret, as rotation of a charge of mass  $m$  around of a point  $C$  in full conformity with a principle of conservation of moment of momentum  $S$ . Thus the charge "is attracted" to a point  $C$ , reducing a radius of gyration and, accordingly, augment speed rotations, and then "is repulsed" from it, augmenting a radius of gyration and decreasing speed rotations. The truth, in all this process at motion of a charge from  $A$  in  $B$  is committed of all half-revolution around of a point  $C$ , but the heart of the matter from it does not vary. The electric charge does not beam energy, not only moving on a fixed circular orbit, but also on orbit of any form, under condition of preservation of a total energy, or if it is in a potential well (see theory of atom). Thus it can participate and in other motions, thus a condition. Who disagrees with this conclusion, insists that the capability of radiation depends on selection of a reference system, that obvious nonsense. And how to be with conclusions of an electrodynamics, you ask, which one uniquely indicate that the charge, driving on a circumference, should lose energy through electromagnetic radiation? Here official physics will use for a fraud of the reader a following method. The theory of radiation of an electric dipole applies to motion of electric charge on a circumference. If one spectator sees along a plane of rotation oscillating electric charge and this motion could be compared to a dipole, let's put the second spectator on the angle  $90^\circ$

comparatively first spectator. One spectator will assert that the radiation should be outspread to it, and to the partner of radiation is not present. Precisely same conclusion will be made also by the second spectator. The radiation simultaneously is, and it is not present, that indicates incompetence comparison of motion electric charge on a circumference with an electric dipole. The comparison of orbital motion of an electron with an oscillating dipole is erratic also that for one vibration period of a dipole the positive acceleration doubly for period is replaced by negative acceleration, and centripetal (new physics negates its existence) acceleration of an electron permanently. Nevertheless, official physics widely will use not adequate comparisons. In conditions monopolism on true there is nobody to indicate errors. Further we shall see that we is called as an electromagnetic wave has completely other physical nature, and the Maxwell equations have appeared on that to a simple reason, that for him under an arm it was not simple more anything applicable, to explanation self-propagation of light in space.

The denying of existence of a centripetal acceleration automatically removes a problem on energy loss by an electron driving around of a nucleus, as it is gone without acceleration. The quantum mechanics recognizes existence of an electron angular momentum in atom, therefore, should recognize the fact of motion of a *S*-electron around of a nucleus and to explain stability of atom. In this respect first postulate of the Bohr is more correct, though it and does not explain a reason absence of radiation.

The first postulate of the Bohr: the electrons can move in atom only on definite orbits, being on which one, they, despite of presence for them of acceleration (is selected by me - V.K.), do not beam. These orbits correspond to stationary states of electrons in atom and are determined by a condition:  $m_e v_n r_n = \frac{nh}{2\pi}$ , where  $r_n$  - radius  $n$ -th of orbit,  $m_e \cdot v_n \cdot r_n$  - moment of momentum of an electron on this orbit,  $h$  - constant of the Planck,  $n$  - integer ( $n > 0$ ). B.M. Yavorsky, A.A. Detlaf "The reference Book on physics for the engineers and students of high schools", " Science ", M., 1964, page 670-671.

From further it will be visible, that  $mV^2/2$  is universal potential energy of repulsing of any interacting systems, starting from galaxies and finishing the constituents of "elementary" particles. The repulsing of like electric charges and like magnetic poles, as we shall see, has not crucial importance in comparison with  $mV^2/2$  specially for systems affected in this work.

To open this universal potential energy of repulsing in an obvious kind depending on radius of orbit of a driving gravitational charge (some mass) or electric charge (too possessing simultaneously and gravitational charge), that is completely necessary for applying the mathematical apparatus, we shall decide a of equations set:

$$E_{rep} = \frac{mV^2}{2} \quad (1.1),$$

$$S = mVr \quad (1.2),$$

$$m = \frac{m_0}{\sqrt{1 - \frac{V^2}{C^2}}} \quad (1.3).$$

By the formula (1.3) we shall take advantage for the lack of anything best for connection of mass of a body with speed of its motion (see chapter about "elementary" particles, where the physical sense of this formula is uncovered).

The solution of equations set:

$$E_{rep} = \frac{S^2 C}{2r \sqrt{m_0^2 r^2 C^2 + S^2}} \quad (1.4).$$

At  $r$  large (this case overlaps range of the sizes from radius of atom up to radiuses of galaxies and corresponds to absence of noticeable relativistic increase of mass,  $m_0^2 r^2 C^2$  considerably exceeds  $S^2$ ), from (1.4):

$$E_{rep} = \frac{S^2}{2r^2 m_0} \quad (1.5).$$

At  $r$  small (this case concerns to "elementary" particles and their internal parts and corresponds to considerable relativistic increase of mass, when  $V \approx C$ ,  $m_0^2 r^2 C^2$  is significant less  $S^2$ ), from (1.4):

$$E_{rep} = \frac{SC}{2r} \quad (1.6).$$

Substituting  $S = m_0 V r$  in (1.5) and  $S = m C r$  in (1.6), it is easy to be convinced that we shall receive in first case  $\frac{m_0 V^2}{2}$ , and in second  $\frac{m C^2}{2}$ .

Experimental (1901-1909) relation of electronic mass to speed of its motion (point). The

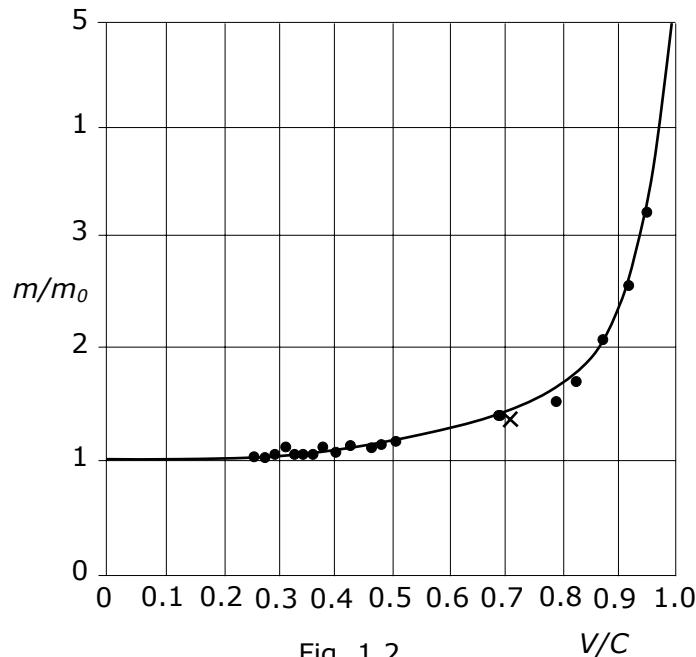


Fig. 1.2

curve corresponds to the formula (1.3) is shown on a figure 1.2.

The graph is borrowed from the book: J.B. Marion "Physics and physical world", "World", M., 1975, page 30. The dagger on the graph is put by the author and the sense it will be uncovered at the description of an electron (see also chapter 5.2).

The so universal potential energy of attraction, apparently, does not exist, for example, the attraction of space objects is determined by gravitational forces, electrons to a nucleus of atom - electrostatic, and nucleones in a nucleus - nuclear. All the same, running forward, it is possible to tell, that all parameters of space systems, atoms and "elementary" particles, at the end, are determined by universal potential energy of attraction, the kind of a function by which one depends on concrete circumstances, and which one conditionally we shall call as gravidynamic attraction. The gravitational charges, rotated about the axis and migrating in space are necessary for its development. As all in the Nature is anyhow gyrated, and even rectilinear motion only abstraction, which one is not present conformity in a substantial world (that with all evidence will be shown below), the developments of gravidynamic interplay are easy for watching both in space scales, and in a microcosmos, and starting from nuclei of atoms and finishing the constituents of "elementary" particles, the gravidynamic attraction is exhibited practically in the pure state. Here it is necessary at once to be stipulated, that in the book there are no declarative applications. Early or late validity of each expression will be show. For example, will be shown, that all free bodies moving on a screw line, and the first Newton's law is fair to an axis of this line, but not to the body.

**Comments of the author:**

**One more evidence of existence of a repulsing potential field at motion on a circumference.**

Here I shall result in mathematical reasons for the benefit of universal potential energy of repulsing at motion of a body on a circumference.

As though we did not trice a body to center of a circumference (sharply or step-by-step) or did not release, that remove from center, the common energy will be peer to zero point, if we shall return to initial point on that spacing interval from center, (in any point of a circumference on this spacing interval we shall get without energy consumption). Let's presume, in initial position to a body  $m$  on a circumference with peripheral speed  $V_0$  and having «kinetic» energy  $E$  we have imparted plus energy  $W$ , then, apparently,

that:  $E = \frac{mV_0^2}{2} + W = \frac{mV^2}{2}$  (1), where  $V$  - new (current) peripheral speed. From

(1):  $W = \frac{m}{2}(V^2 - V_0^2)$  (2). Let's record angular momentum of a body on a

circumference:  $L = mVR$  (3), where  $R$  - radius of gyration. Let's erect (3) in a square and we shall record a square of speed:  $V^2 = \frac{L^2}{m^2R^2}$  (4). Let's substitute (4) in

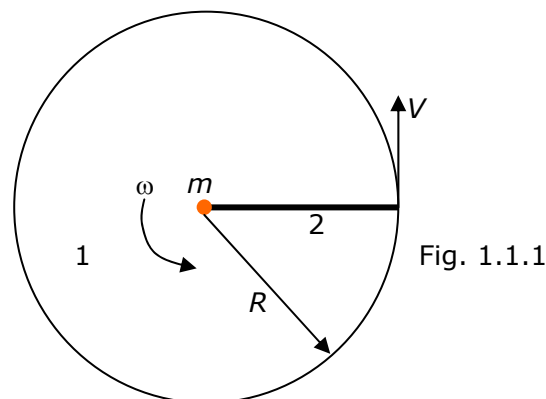
(2):  $W = \frac{L^2}{2m} \left( \frac{1}{R^2} - \frac{1}{R_0^2} \right)$  (5). Let's substitute in (5) expressions of angular momentum and is

reform:  $W = E_0 \left[ \left( \frac{R_0}{R} \right)^2 - 1 \right]$  (6). The expression (6) demonstrates, that the energy, which is

possible to receive (or to expend) at change of a radius of gyration is inversely proportional to a square of spacing interval from center of rotation and in this sense the potential field of universal repulsing by nothing differs from an electrostatic or gravitational potential field, only potential field of repulsing more abruptly changes with spacing interval from center (not  $E \sim 1/R$ , and  $E \sim 1/R^2$ ). It also determines existence of a potential well at electrostatic and gravitational interaction. Without potential energy of repulsing the existence of a potential well of interplay is impossible.

About kinetic energy of a body moved on a circumference is possible to reason only for a body, is hard bound with center of rotation. In this case any change of kinetic energy of a body does not result in change of a radius of gyration, i.e. the law of conservation of angular momentum in this case does not work also potential energy of repulsing does not vary.

### 1.1. At motion of bodies on a circumference accelerations miss



On a figure 1.1.1 the disk 1 radius  $R$  is shown. The rod 2 is hardly connected to the disk on which one freely some mass  $m$  can to slip. Let's begin to twist the disk with constant angular velocity  $\omega$ . Apparently, that position  $m$  in center of the disk is unstable also this mass will begin to slip on a rod 2 to peripherals of the disk under operating of centrifugal force (not centripetal force, which one here in general is not present). As, in this case, simultaneously varies both radius of gyration of mass  $m$  and its linear peripheral velocity:



$$V = \omega \cdot r \quad (1.1.1),$$

that, apparently, that formula of centrifugal force as:

$$F_{cf} = \frac{mV^2}{r} \quad (1.1.2)$$

to apply it is impossible. Let's substitute (1.1.1) in (1.1.2):

$$F_{cf} = m\omega^2 r \quad (1.1.3).$$

From the second Newton's law is apparent, that the centrifugal acceleration for considered mass will be:

$$a_{cf} = \omega^2 r \quad (1.1.4),$$

which one formally coincides taking into account (1.1.1) with expression for «centripetal» acceleration of official physics:

$$a_{cp} = \frac{V^2}{r} \quad (1.1.5).$$

As the centrifugal force pursuant to (1.1.3) linearly increases with radius, its mean active value will be equal to half maximum. Then work accomplished by this force on path r:

$$A = \frac{F_{cf} r}{2} = \frac{m\omega^2 r^2}{2} \quad (1.1.6).$$

The kinetic energy of a material point of mass m is determined by the same expression:

$$W_k = \frac{J\omega^2}{2}, \text{ where } J = mr^2 - \text{moment of inertia of mass m} \quad (1.1.7).$$

If on the end of a rod to put a bearing, the centrifugal force will be balanced by reacting of this bearing and in a direction of operating of these forces movement and any acceleration miss. In this case considered mass has kinetic energy pursuant to the formula (1.1.7). To make an analysis demonstrates, that speculations of official physics around of «centripetal» acceleration are erratic. In a considered problem there is only centrifugal acceleration and that only so long as we permit to mass freely to move along radius. At motion of a body on a circumference with fixed radius of any accelerations is not present.

I want to remind to the adherents of vectorial world outlook, that the square of vector is a scalar not having directions. In the formula (1.1.5) vectors in general is not present, even if peripheral velocity to consider as vector. On this basis the radiation of electric charge driving on a circumference is impossible since it has not acceleration any of a direction. Therefore scientists have made in due time large error by rejecting the theory of atom of the Bohr.

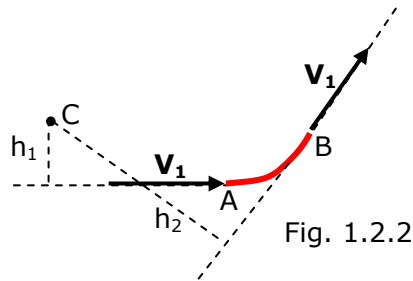
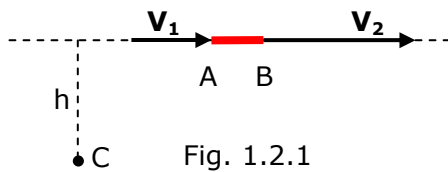
## 1.2. Inertia

In chapter 1 is shown, that at even rectilinear motion the angular momentum of a body with respect any point of space does not vary. Direct consequence of this conclusion is the definition of inertia of a body, as manifestation of a fundamental law of conservation of angular momentum of a body. While the angular momentum of a body does not vary, inertia we is not observed. As soon as we begin to accelerate or to slow down motion or to change its direction, then there is an inertia. Any change of angular momentum is connected to operating of force and it, in its turn, is determined by speed of change of an impulse of a body pursuant to the second Newton's law:

$$\mathbf{F} = \frac{d}{dt}(m\mathbf{v}) = \frac{d\mathbf{P}}{dt} \quad (1.2.1)$$

If force F to decompose on three axes of coordinates, (1.2.1) it is possible to copy in the scalar form of speed of change of components of an impulse on these axes. This fact indicates independence of motions under operating of any component summary force. Thus, pursuant to the second Newton's law, the slower angular momentum of a body changes, the the smaller force needs to be applied to this body.

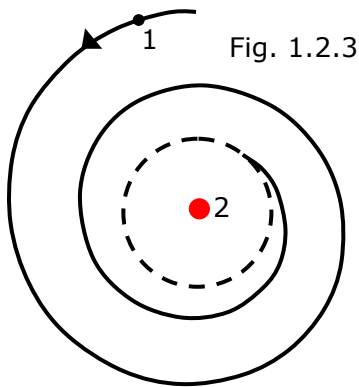
The versions of change of angular momentum for rectilinear motion of a body are shown on figures 1.2.1 and 1.2.2.



On a figure 1.2.1 as a result of operating on a body of some force on a segment AB, having angular momentum  $mV_1h$  concerning an arbitrary point C, its angular momentum has changed and has become equal  $mV_2h$ . On a figure 1.2.2 as a result of operating on a body of some force on a segment AB having a moment  $mV_1h_1$  concerning an arbitrary point C, its angular momentum has changed and has become equal  $mV_1h_2$ .

Here it is necessary to recollect the third Newton's law: the operating is equal to counteraction, and the counterforce is directed to opposite operational force. If formally to apply this law, it is possible to reach to in principle error conclusions. For example, we act on a body with the purpose to change its speed or current of traffic, but, meeting equal and the opposite directional counteraction, we can not change parameters of motion of this body. The picture of interplay of bodies becomes clear in experiment, when the weight put on a cushion. In this experiment the weight, despite of a contact with a surface of a cushion, in the beginning is gone accelerated under operating of attractive force to the Earth. In this moment the counterforce of a cushion smoothly accrues from zero point up to some value, equal difference of weight of the weight and force of inertia it, since the force of inertia of the weight is directed opposite to weight. The weight is gone to some instant already uniformly and its force of inertia disappears. The resistance force of a cushion prolongs to be augmented and the weight is gone already in a slowed-up way, the force of inertia arises again and now it is directed on a direction of the operational force of weight. Therefore the weight sags a surface of a cushion is more, than in a case of indefinitely sluggish lowering of the weight. There comes the moment, when the weight is gone back. After several oscillations or aperiodic damping them, is struck the balance, at which one of weight of a body applied to the weight is balanced counteraction of a cushion also applied on the weight. Therefore the weight is in a state of rest. For brevity, we here not consider interplay of a cushion with a bed, bed with a floor, floor with the Earth, Earth with the Sun etc. Apparently, as all bodies consist of atoms, is ideally of rigid bodies in the nature there is no also interplay by their direct contact to the similarly reviewed interplay of the weight with a cushion. It is possible to make of described experiment such conclusion: the third Newton's law is fair only for equilibrium state of a system, which one can be both static, and dynamic (revolution). Three interdependent forces participate in interplay of bodies: force of operating, force of inertia and counterforce. The operational force is independent of time, and force of inertia and counterforce depend on time of interplay, and the force of inertia instantaneously reacts to change of angular momentum of a body.

Let's consider now case of interplay at roundabout of a body. In this book the numerous evidences are adduced that all bodies in the Nature move on a screw line. The force of inertia is present at a tangential direction of this motion permanently as centrifugal effort and is conditioned by equalling of this force and force of gravidynamic attraction to an axis of a screw trajectory of a body. Therefore reasoning tangent figures 1.2.1 and 1.2.2 are completely fair to an axis of a screw trajectory of bodies (to a translational motion of a body). On a figure 1.2.3 is shown interplay of a body 1 with a central body 2 (it there can be a man who is winding on spool a thread, linking him with a body 1 or the atom nucleus on which one «drops» an electron).



The equilibrium state here is reached not at once, is similar to dip of the weight on a cushion and consequently allows explicitly to consider interplay.

In not relativistic area mass of a body 1 does not vary ( $m_0$ ), the angular momentum it depends only on product

$$Vr = \alpha = \text{const} \quad (1.2.2),$$

therefore angular momentum:

$$m_0 Vr = m_0 \alpha \quad (1.2.3).$$

Let's multiply both parts (1.2.3) on  $V/2r$ , then with the registration (1.2.2) we shall receive:

$$E_k = m_0 \alpha^2 / 2r^2 \quad (1.2.4),$$

where  $E_k$  - kinetic energy of a body. Actually (1.2.4) not kinetic energy of a rotated body, and potential energy of universal repulsing, numerically equal  $mV^2/2$  (chapter 1).

Differentiating (1.2.4) on radius with the subsequent substitution (1.2.2), we shall discover:

$$F_{cf} = -m_0 V^2 / r \quad (1.2.5),$$

where  $F_{cf}$  - centrifugal effort (force of inertia or force of universal repulsing in this case).

In relativistic area the running speed is peer to speed of light  $C$ , therefore angular momentum depends only on product

$$mr = \beta = \text{const} \quad (1.2.6),$$

where  $m$  - relativistic mass of a body, therefore angular momentum:

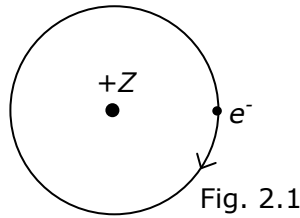
$$mCr = C\beta \quad (1.2.7).$$

Multiplying both parts (1.2.7) on  $C/2r$  with the registration (1.2.6) and by repeating the manipulations similar above-stated for not relativistic case, we shall receive relativistic force of generalpurpose repulsing:

$$F_{cf} = -mC^2 / 2r \quad (1.2.8).$$

In considered interplay of bodies the operational force on the part of a body 2 on a body 1 can be of any genesis and to change under any law depending on spacing interval between bodies. Thus operational on a body 1 force is more than an arising counteractive force by which one, in this case, is the centrifugal effort of inertia so long as they will not become equal at the expense of increase of force of inertia of a body 1. Thus the body 1 will move on a fixed circular trajectory indicated on a figure by 1.2.3 dotted line. In this condition the attractive force acts on a body 1 on the part of a body 2 and the force of generalpurpose repulsing acts equal to it on the same body. Therefore body 1 rest in a direction of operating of these forces, but is gone in a perpendicular direction without undertaking work to a similarly rolling sphere on a horizontal plane. In under consideration a case the counterforce coincides force of inertia and is peer to the operational force only in equilibrium state.

## 2. About MOTION of MOBILE ELECTRON and GRAVIDYNAMIC FIELD



We are advert to a hydrogen-like atom figured on a figure 2.1.

It is known, that any system aims at a minimum of potential energy and on achievement it is taken with a stable state of equilibrium in a potential well, which one call as a ground state.

For potential energy of an electron we can record (using (1.5) for not so large  $Z$ , if the electron will move near to a multicharge core, instead of (1.5) it is necessary to apply (1.4)):

$$E = -\frac{Ze^2}{r} + \frac{S^2}{2r^2m_0} \quad (2.1).$$

We should not lose common sense, as it is made in classic expression of radius of orbit of an electron, where the electronic mass stands in a denominator. As is known (for example, B.M. Yavorsky, A.A. Detlaf, "The reference Book on physics for the engineers and students of high schools", " Science ", M., 1964, page 307), the theory of the Bohr results in following expression for radiuses of orbits in a hydrogen-like atom:  $r = n^2 \frac{\hbar^2 4\pi\epsilon_0}{mZe^2}$ , where the electronic mass stands in a denominator and contradicts common sense, on which one should stand in numerator. Quantum mechanics results also in precisely the same expression. Intelligible explanations of this incident the official science does not result, and attempt those here to result, simply it is not worth.

Let's substitute  $S = m_0Vr$  in (2.1) and we shall designate  $Vr = \alpha$  :

$$E = -\frac{Ze^2}{r} + \frac{\alpha^2 m_0}{2r^2} \quad (2.2).$$

Differentiating (2.2) and equating the obtained outcome to zero point, that means a minimum of a function (2.2), we shall discover value of radius of orbit of an electron applicable to this minimum:

$$r = \frac{m_0\alpha^2}{Ze^2} \quad (2.3).$$

In the formula (2.3) electronic mass has taken a position, appropriate to it, in numerator, instead of in a denominator of similar expression under the theory of the Bohr and quantum mechanics.

By substituting (2.3) in (2.2), we shall receive electron-binding energy with a nucleus:

$$E = -\frac{Z^2 e^4}{2m_0\alpha^2} \quad (2.4).$$

The physical sense of value  $\alpha$  is, that this product  $Vr$  for an electron in perpetuity, i.e. is appropriate in a mobile electron.

Let's calculate value  $\alpha$  from ionization energy of atom of hydrogen on (2.4). It has appeared equal 1.1576 cm<sup>2</sup>/sec, accordingly, the moment of momentum for a mobile electron will make  $S = m_0\alpha = \hbar$ . Naturally, that this value remain to a constant and for hydrogen-like and other atoms pursuant to a principle of conservation of moment of momentum. Precisely same value of an electron angular momentum we would receive, using the formula for bond energy under the theory of the Bohr or quantum mechanics. It is necessary to mark, that orthodox physics for a moment of momentum of an electron (spin) accepts the value  $\hbar/2$ . Is not known, how it will explain this antilogy (difficultly to skip experimental value!), but one this fact is capable completely to shatter constructions of a modern physics, since for it (as against new physics) has principled value by the whole or half-integer spin the electron has.

The electron, thus, is in a potential well and, being gyrated around of a nucleus, nothing can beam until will happen absorb energy with transition in an excited state, after wasting this energy on radiation, the electron again will take a ground state.

Here how the quantum mechanics attempts to explain stability of atom of hydrogen (you see it considers, that the potential energy of interplay of an electron with of atomic nucleus

of hydrogen has a kind:  $U = -\frac{e^2}{r}$ , i.e. the potential well does not exist, and exists potential

"abyss" and electron is obliged to fall on a nucleus). I quote under the book: "Physics of a microcosmos", "Soviet encyclopedia", M., 1980, page 33:

"The Minimum energy of hydrogen atom can be found with the help of an indeterminacy relation. This ratio explains why the electron can not fall on a nucleus. If the electron is in area by the size  $r$ , that, according to an indeterminacy relation, dispersion in impulses will

be of the order  $\Delta p \approx \hbar/r$ . Bound with it dispersion of kinetic energy

$T = (\Delta p)^2 / 2m_0 \approx \hbar^2 / 2m_0 r^2$ . A total energy of an electron in atom of hydrogen

$E = T + U \approx \frac{\hbar^2}{2m_0 r^2} - \frac{e^2}{r}$ . (Remark, that this expression completely coincides with (2.1) -

V.K.). The closer electron to a nucleus is less its potential energy. But simultaneously kinetic energy of an electron grows ( $\sim 1/r^2$ ), and is faster, than descends potential ( $\sim 1/r$ ). Coming nearer to a nucleus, the electron starts to move so fast what to fall on a nucleus can not (!). It on the average will be on such spacing interval from a nucleus, at which one its total energy will appear minimum (!). This spacing interval can be found under the general rules of definition of a minimum of a function". As we see, that here is formally made even, as at a conclusion (2.3) and (2.4), but thus prostrated not only sensible physical and mathematical sense, but also fundamental energy conservation law. As though electron near to a nucleus fast did not move, the destiny it is not determined at all by running speed. The sum potential and kinetic energy of an electron can not have a minimum, since it is constant, that requires an energy conservation law, therefore, derivation of a function of a total energy - incorrect operation. Apart from all it, on presentation of a quantum mechanics the considered electron is not gone at all (S-electron), since has not an orbital moment (see in that a source, page 35 and fig.16). The modern physics represents almost continuous "crazy quilt", in which one everyone "patch" is made in a similar way, otherwise make both ends meet are not reduced.

For explanation of the observed facts, the supposition is necessary that the mobile electron is gone on a screw line.

"The quantum Mechanics in modern handling recognizes that basically it is impossible construction of the theory of personal microprocess, that the theory of statistical combinations - ensembles identical micro formations is possible only". N.I. Kariakin etc. "Brief reference book on physics", "Higher School", M., 1962, page 380. Esteeming behavior of a separate particle, the quantum mechanics continually upsets this principle.

The reasons of such motion for any free bodies, including macroscopic will below be uncovered. Then those values of a magnetic moment of an electron and spin (which one here are meant as a mechanical moment), which one we assign purely to electron, receive other explanation. The experimental values of a spin will be connected to a moment of momentum on coils of a screw line, and the magnetic moment will be a consequent of such motion. The own magnetic moment and moment of momentum of a "fixed" electron is very small, that will be clear in section dedicated its structure. So the paradox, bound with a spin of an electron is simply removed. Now electron does not have necessity to be gyrated with speed in 300 times superior speed of light to ensure observed magnetic and mechanical moment. There is no necessity and in the term "spin", therefore we shall not misuse with this term. By swallowing in due time toxicant pill of a spin and absence of the orbital moment of S-electrons, modern physics doom them on valid death, and any attempts to squeeze this problem in frameworks of common sense, are unsuccessful. Everyone can be convinced of it, taking the job not preconceived to be disassembled in a heap of contradictory explanations of the given problem; it is not so much its making clear, how many finally complicating.

Most ridiculous is, that a modern physics, considering a spin by bound with inner rotation of an electron, instead of with an angular momentum on a screw trajectory, dumps from an ill head on healthy, asserting boundedness of the theory of the Bohr: "The Theory of the Bohr, excellent by explaining a spectrum of hydrogen, was not able to explain properties of a ground state of hydrogen atom ( $n=1$ ) сферически-symmetrical distributions of a charge (differently there will be an angular momentum! - V.K.), absence of the orbital mechanical and magnetic moments, and also completely unsuitable to more composite atoms, begin helium". N.I. Kariakin etc. "The Brief reference book on physics", "Higher School", M., 1962, page 350.

The electron, moving on a screw line and "dressing" on a nucleus, on a principle of conservation of moment of momentum will not change value  $\hbar$ . It also explains apparent "absence" of the orbital and magnetic moments of an electron in atom that has caused of orthodoxes with dread to speak in general about motion of an electron on orbit.

In experiment of Stern - Gerlach through an inhomogeneous magnetic field the narrow bundle of atoms in a S-condition was skipped, when on presentation of a quantum mechanics the orbital moment of an electron should equal to zero point (electron cloud around of a nucleus is spherically symmetrical). Thus on a screen not one band applicable to not decomposed bundle, and two is watched. By metering value of cleavage, Stern and Gerlach have found that the magnetic moment of an electron is peer to one magneton of the Bohr. The quantum mechanics explains it by presence of "spin" - own angular momentum of an electron, but at spherically symmetrical distribution of an electron in atom the magnetic moment should always have it zero value even at presence of an own magnetic moment for an electron (one band). From the point of view of new physics the experiment of Stern - Gerlach confirms, that the magnetic moment of a mobile electron driving on a screw trajectory is peer to a magneton of the Bohr (mechanical moment of a impulse is peer  $\hbar$ ) and it remains to such on atomic orbit pursuant to a law of conservation of angular momentum.

Here it is necessary to pay attention on "overlapping" of electrons in atoms on modern notions. If the electrons in atom are introduced as electron cloud, these clouds are overlapped in multielectronic atoms and in this case are vague, whence each electron is known, with what part of a cloud it. Besides even in a hydrogen-like atom it is necessary to take into account interplay of miscellaneous parts of a cloud among themselves, but then at quantum mechanical calculations we shall not receive expressions (2.3) and (2.4), i.e. we shall conflict to experimental data. If also to take into account the power side of "spreading" of an electron and repeated "accumulation" of electron cloud in a particle at an atomic ionization, the inconsistency with experiment becomes blatant. Therefore it is necessary to speak about probability of presence of an electron in the given point of space (quantum mechanics is a statistical theory), esteeming an electron nevertheless by particle. But then there is an inconsistency with experimental data of "absence" of an orbital moment of S-electrons, which one are better for presenting by a "fixed" cloud. Therefore quantum physics is capable simultaneously to consider an electron both particle and "cloud" being not confused by at all such nonsense. Applying of the term "wave function" instead of the term "cloud" basically nothing changes. As an example the quotation from the book K.P. Belov, N.G. Bochcarev, Magnetism on the Earth and in space, "Science", 1983, page 31: "The reasons it are clear - for the majority of molecules an expansion and density of electron cloud on miscellaneous directions are various", and in following the paragraph: "It is possible to explain this data from the supposition, that under operating of a magnetic field in aromatic connections there are spaceless currents along all system of connections which are forms a ring. Differently, the part of electrons of a molecule is capable freely to run round of ring".

The modern physics as a matter of fact disclaims a scientific method of knowledge, as depending on momentary profit can use classic notions or notions of a quantum mechanics, to esteem only wave aspect or only corpuscular properties of a particle, with ease adapting the views under the new experimental and own theoretical data. Judgement of the S. Weinberg, American physics - theorist, one of the creators of the unified theory of electromagnetic and gentle interplays: "Problem physics - to work out a simple view on natural phenomena to explain huge set of composite processes from the unified point of view on the basis of several simple principles". "Chemistry and life", № 4, 1983, page 19.

This advice the modern physics does not use, fast complicating ample simple initial hypotheses, that speaks about an inaccuracy of initial hypotheses.

The wavelength de Broglie gains simple physical sense, as a step of a screw line (compare to official science).

"If in classic physics it is meant, that the motion of each particle obeys to the deterministic laws and it can precisely and uniquely be forecast, and the probabilistic description is applied to set of particles, to which one it to make is difficult mathematically, the quantum mechanics asserts principled impossibility of the precise description of motion even one particle. In it the waves of the de Broglie cannot even be interpreted, as waves of probability, since its for some points of space accepts negative values. How for the first time was shown by the Born, arising here difficulties testifying to steep distinction between the probabilistic description in classic and in a quantum physics, it is possible to eliminate if to accept, what under the wave law not probability, and certain value varies (?), called by a probability amplitude and denotatum  $\psi(x,y,z,t)$ . This value call also as wave function. The probability amplitude should be complex, and the probability  $w$  is proportional to a square of its module:  $w \sim |\psi|^2$ . The wave function acts in a quantum theory how a majority carrier of the information and about corpuscular (?)! and about wave properties of a system. Offered by the Born explanation of the de Broglie's waves eliminates their comprehension as classic waves of a matter. Linking, for example, with a mobile electron the plane wave, not necessary is to understood with it so, as if the electron "is spread" on huge area: actually it means (?), that though the electron prolongs to act in the theory as dot object, probability to find out it in any of points of space is identical". "Physics of a microcosmos", "Soviet encyclopedia", M., 1980, page 17. As we see here and in further, the modern physics prefers "to eliminate difficulties" instead of revision of the fundamentals.

Recording expression of a wavelength de Broglie through forward speed  $V'$  of a particle and circumference through a tangential velocity  $V$ :

$$V = \frac{\lambda}{T} = \frac{h}{m_0 V' T} \quad (2.5),$$

where  $T$  - period of revolution.

$$VT = 2\pi r \quad (2.6),$$

let's discover:

$$r = \frac{h}{2\pi m_0 V'} \quad (2.7).$$

By multiplying both parts (2.7) on  $V$ , we shall receive:

$$rV = \alpha = \frac{h}{2\pi m_0} \cdot \frac{V}{V'} \quad (2.8).$$

By recollecting, that the experimental value of a mechanical moment, definite on electron-binding energy with a nucleus makes  $S = \hbar = \frac{h}{2\pi} = m_0 \alpha$ , whence:

$$\alpha = \frac{h}{2\pi m_0} \quad (2.9).$$

Comparing (2.9) and (2.8), we come to a conclusion, that the free particle is gone in such a manner that its translational and tangential velocity on an coil of a screw line are peer. This conclusion is a consequent of a principle of an equal energy distribution on degree of freedom. Then from (2.7) follows, that radius of a coil of a screw line is inversely proportional forward speeds of a particle:

$$r = \frac{\alpha}{V'} \quad (2.10).$$

Recording:  $\alpha = Vr = \frac{h}{2\pi m_0}$  and by sectioning both parts on  $V'$ , we shall receive:

$$\frac{Vr}{V'} = \frac{h}{2\pi m_0 V'}, \text{ where: } \frac{h}{m_0 V'} = \lambda, \text{ and } V = V', \text{ therefore:}$$

$$\lambda = 2\pi r \quad (2.11).$$

This outcome speaks that the wavelength of the de Broglie is peer to a circumference of normal section of a screw line or length of orbit, in case of a bound particle. In a quantum mechanics consider, that on steady orbit in atom integer waves of the de Broglie is stacked ("Physics of a microcosmos", "Soviet encyclopedia", M., 1980, page 121). Thus, at first, contradict own notions (this statement it is possible to formulate so: "on steady orbit the integer of probability amplitudes is stacked", that obvious bosh). Secondly, enter in an inconsistency with a law of conservation of angular momentum, since consider its as aliquot  $\hbar$ . New physics is strict honour the fundamental laws, therefore knows, that only one wave of the de Broglie are connected to any body, and length it depends on a running speed. A discontinuity of an electron conditions in an excited atom it explains by other reasons.

Thus, all parameters of a screw line, on which one moving free particles, we have defined.

In a de Broglie formula:  $\lambda = \frac{2\pi\hbar}{mV}$  the constant of the Planck as a matter of fact is not present. In numerator there is a moment of momentum of a particle on a screw line. It is identical to miscellaneous particles, that confirm experiments, therefore official use by this formula for definition of a wavelength of a particle depending on its mass is incorrect. This formula will give exact values of a wavelength de Broglie only for particles with an identical angular momentum on a screw trajectory and equal  $\hbar$ . For example, new physics considers, that the angular momentum of an electron and photon is identical and is peer  $\hbar$ , and official physics, accordingly,  $\hbar/2$  and  $\hbar$ . Nevertheless, for calculation of a wavelength of an electron official physics substitutes in a de Broglie formula not  $\hbar/2$ , and  $\hbar$  and receives, naturally, exact value of a wavelength. By it explodes own fundamentals based on a half-integer spin of an electron. This problem can be enough easily solved experimentally for other particles, comparing experimental mass, "spin" and wavelength with value obtained from a de Broglie formula. As will be shown in the theory of elementary particles, their mass depends on summary value of an angular momentum of components. And for macro bodies the de Broglie formula can use only under that condition, if we in numerator shall substitute a huge moment of these bodies. Thus we shall receive a wavelength de Broglie of space scales, instead of paltry, what official physics receives, not understanding physical sense of a de Broglie formula.

The formula de Broglie  $\lambda = \frac{h}{mV}$  demonstrates, that the free microparticles move not rectilinearly and uniformly, and on a screw line. Really, we shall multiply both parts of this equation on  $mV\nu$ , where  $\nu$  - frequency of de Broglie wave, then we shall receive:  $mV\lambda\nu = h\nu$ . But  $\lambda\nu$  it is a speed of wave propagation, bound with a particle, which one is peer to speed of the particle. Then:  $mV^2 = h\nu$ . Apparently, that in the obtained equality its both parts mean a total energy of a particle. But on notions of official physics the total energy of a rectilinearly driving free particle is peer to its kinetic energy  $\frac{mV^2}{2}$  and still same there is no place to take. Therefore, the kinetic energy of a particle is piled from translational and tangential motion it on a screw trajectory.

Now we shall developed reasons causes free particles to move on a screw line. At first we shall conduct analogy. It is known, that in a homogeneous magnetic field the electric charge, generally, is gone on a screw line, the axis by which one coincides a direction of a magnetic field. If electric charge to cause to be gyrated around of an axis and if it not dot, the formed magnetic field substitutes external with that by outcome. The modern physics for many reasons considers an electron dot (Ibidem, page 479), differently there is a many of inconsistencies, though also this fact contradicts classic value of radius of an electron - fundamental physical constant. On the other hand, dotty of an electron results in other irresolvable inconsistencies, bound with perpetuities.

On the one hand asserts, that the notion about dotty of elementary particles is closely connected to the supposition about a capability ad lib precise measurements of spacing intervals and periods, on the other hand enter concept of fundamental length to leave from indefinitely large values (for example, an energy of field for dot particles) - divergences and here assert, that the introducing of fundamental length hides behind itself nondotty of



particles (Physics of a microcosmos, M., 1980, page 197). Thus, the concept of fundamental length becomes at all redundant, since the capability of a precise measurement of spacing intervals and periods does not depend on the sizes of particles.

With increase of a running speed radius and step of a screw line decreases. In the formulas determining parameters of screw motion of a mobile electron there absent an electric charge, but there is a gravitational charge (mass). If we attempt to explain screw motion of an electron only by presence of magnetic interplay, bound with motion of electric charge, we shall be convinced that this interplay is very gentle and can not call such motion. On its score it is possible to relate only effects of the second order. There is an alone reasonable supposition. Similarly, how the driving electric charge will forms a magnetic field, and at its deceleration the photons are beamed the driving gravitational charge will forms a gravidynamic field - analog of a magnetic field, and at its braking the gravitons are beamed. Below we shall be convinced that the graviton separately does not exist, its functions are completely depleted by a photon.

That gravidynamic interplay to make appreciable, except for a high speed of proper rotation, is necessary large "the gravitational current", equal product of a particle mass on speed of its moving, i.e. impulse. The analysis of interplay of gyroscopes should answer on arising in connection with formation of a gravidynamic field problems. (The Clandestine explorers so-called "of torsion fields" as a matter of fact also are engaged by it). Artificial satellites of the Earth too good models, only it is not necessary to stabilize them from proper rotation, and on the contrary, stronger to untwist. While we shall use analogy to a magnetic field. The gravidynamic interplay becomes appreciable in a macroworld because of large weights and, in some cases, high speeds of motion, and in a microcosmos it is caused by huge running speeds, close to light. As we shall see later, the gravidynamic field augments the intensity not proportionally speeds, and is similar, how mass grows at nearing speed to light. Therefore all free particles of a microcosmos (as then we shall see, and macroworld too) moving on a screw line, as a first approximation, irrespective of electric charge. The explorers of a "torsion" field as a matter of fact deal with gravidynamic.

At motion on a screw line the particle is in a potential well, therefore energy of universal repulsing and bond energy is peer to half of energy of attraction:  $\frac{mV^2}{2} = \frac{E_{att}}{2}$ , whence

$E_{att} = mV^2$ , and the gravidynamic attractive force to an axis of a screw trajectory is always

peer to centrifugal force:  $F = \frac{mV^2}{r}$ .

Thus, we can make a major conclusion: **the wave-corpuscule dualism of bodies is motion them on a screw line.**

The indeterminacy relations of the Heisenberg and Schrodinger equations are corner stones of a modern physics. Let's look, that they represent from the point of view of new physics.

As microparticles moving on a screw line with vector of an angular momentum, directional along motion and equal  $\hbar$ , and the tangential velocity of motion is peer translational, we can clear up physical sense of an indeterminacy relation of the Heisenberg.

The indeterminacy relation of the Heisenberg is received as follows (see, for example, B.M. Javorsky, A.A. Detlaf "Course of physics III", "Higher School", M., 1967, page 270-271). The restricted spatial expansion of  $\Delta x$  some wave train is connected to presence for it principled non-monochromatic - inevitable presence for such "train" of a definite interval  $\Delta\omega$  of possible frequencies or interval  $\Delta k$  of wave numbers of monochromatic waves component this "train". Between  $\Delta x$  and  $\Delta k$  there is a connection:  $\Delta x \cdot \Delta k \geq 1$  (a). This ratio is fair for any wave processes. For wave de Broglie of a particle driving lengthwise axis  $x$  with the impulse  $p_x = p$  ( $p_y=p_z=0$ ) and allowing,  $p_x = k\hbar$ , we have:  $\Delta k = \frac{\Delta p_x}{\hbar}$  (b). By substituting

(b) in (a), we shall discover:  $\Delta x \cdot \Delta p_x \geq \hbar$ . Esteeming motion of a particle along axes  $y$  and  $z$ , we shall receive similar ratio.

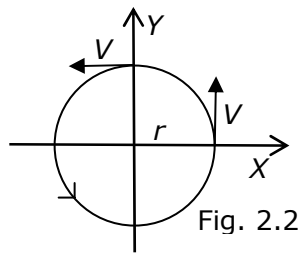


Fig. 2.2

Lengthwise axis Z of screw line of a particle trajectory we shall see a circumference figured on a figure 2.2.

Let's record expression for an angular momentum of a particle concerning an axis of a screw trajectory:

$$\hbar = mVr \quad (2.12).$$

The projection of velocity vector  $V$ , for example, on axis X varies from zero point up to  $V$ , therefore:

$$\Delta V_x = V \quad (2.13),$$

and the projection of a radius-vector  $r$  varies from  $r$  up to zero point, therefore:

$$\Delta x = r \quad (2.14).$$

Substituting (2.14) and (2.13) in (2.12) and allowing, that  $m\Delta V_x = \Delta P_x$  represents a projection of a impulse of a particle to axis X, we shall receive:  $\Delta x \cdot \Delta p_x = \hbar$ . At substantial measurements this product will be always more, i.e. to correspond to an indeterminacy relation of the Heisenberg:

$$\Delta x \cdot \Delta p_x \geq \hbar \quad (2.15).$$

From a conclusion (2.15) it is completely clear, that it is simple other record of the formula (2.12), i.e. indeterminacy relation of the Heisenberg - fiction. It is a law of conservation of angular momentum and anything more. The sign is "more" in the formula (2.15) - latent violation of this law and it appeared from misunderstanding of an essence of a law of conservation of impulse or from large desire to extend a field of scientific speculations.

"The quantum Mechanics, allowing calculating only probabilities, is the theory statistical. For check of its conclusions it is necessary to deal with very large number of identical systems, so-called quantum ensembles" (N.I. Kariakin etc. "Brief reference book on physics", "Higher School", M., 1962, page 382).

The physical essence of a reduced mathematical exercise is that we have exchanged a motion picture of one particle by a statistical motion picture lengthwise axis Z of set of particles with a miscellaneous phase of motion.

In this case presence of a concrete particle in any point of a trajectory is equiprobable. Therefore, if we in experiment shall be photons (electrons) one behind another to skip through a diffraction grating strictly on one line and **in one phase** of motion, instead of a common diffraction picture on a screen, when each photon (electron) falls with miscellaneous probability in miscellaneous places of a screen, we shall watch hit of particles in the same place of a screen and determinism in science again will triumph!

The quotation from the book A.I. Veinik "Thermodynamics", "Higher School", Minsk, 1968, page 435: "Are necessary to be surprised of titanic intuition of the Einstein, more than 30 years struggling with that development trend, which one was accepted by a quantum mechanics at his life: "... I... incessantly searched for other path for the solution of a quantum riddle... These looking ups are conditioned deep, principled nature by dislike, which one to me inspire with a fundamentals of a statistical quantum theory". The Einstein acted against a principle of uncertainty, for determinism, against that role, which one in a quantum mechanics assign to the act of observation (influencing of a measuring instrument), etc., owing to what was even disclaimed by some friends. In 1947 he wrote to Max Born: "In our scientific views we were advanced in antipodes. You trust in the god, playing in a bones, and I - in full regularity in a world am objective arrant...", "Of what I am solidly convinced, so it that, eventually, will stay on the theory, in which one regularly bound will not probabilities, but facts...".

From a conclusion (2.15) it is clear, that if we do not know an initial phase of motion of an electron, we shall fail at any moment to tell, where there is an electron in a plane,

perpendicular axis of a screw trajectory. But, knowing speed of its motion, completely precisely we shall defined passed by an electron a path on an axis (Z) of a screw траектории. The modern physics concerning uncertainty of motion of an electron in a plane, perpendicular of traffic route at all can not tell anything intelligible. By an indeterminacy relation of the Heisenberg it as a matter of fact records a moment of momentum on a traffic route, i.e. the electron at motion "somersaults through a head" and is necessary how to explain this physical nonsense. Here there is also mathematical nonsense - motion of a body with an angular momentum probably, at least, at once on two coordinates (in a plane), instead of on one line.

The system in a ground state can exist indefinitely long, therefore on an indeterminacy relation  $\Delta E=0$  in this condition. Therefore in a ground state  $\Delta x \rightarrow 0$ , and impulse  $\Delta p \rightarrow \infty$ . As the energy of a particle is directly connected to its impulse,  $\Delta E \rightarrow \infty$ , i.e. dispersion of energy in a ground state should be peer to zero point and simultaneously unrestrictedly is great. This example of an inconsistency speaks that the true physical sense of an indeterminacy relation to a modern physics is unknown.

Suming up said, it is possible to mark, that new physics has more rights, than orthodox, on indeterminacy relations of the Heisenberg, since it uncovers their genuine physical sense, is simultaneous strongly limiting their applying. The motion of free bodies not on a straight line, and on a screw line also is that "latent parameter", the Einstein dreamed of which one to finish with a principle of uncertainty.

"If will be ever demonstrated, that the principle of uncertainty is incorrect, we should expect full modification of the physical theory". J. Marion, "Physics and physical world", World, M., 1975, page 609.

If uncertainty of the Heisenberg eventuates of statistical consideration of motion of particles of a miscellaneous phase lengthwise axis of their screw trajectory, the Schrodinger equations will be outcome of the same consideration from any direction, perpendicular axis of a trajectory. As the tangential velocity is peer accuracy to forward speed of a particle, the projection of a trajectory to any plane parallel an axis of a trajectory, will be a sinusoid, the scale by which one is inversely proportional of this speed. As a whole, the Schrodinger equations can not be deduced from any laws of physics, therefore itself it is considered as "law". An equation of the Schrodinger for an electron in a one-dimensional case (when potential energy  $P$  and function  $\psi$  do not depend on coordinates  $Y$  and  $Z$ ):

$$\frac{h^2}{8\pi^2 m} \cdot \frac{\partial^2 \psi}{\partial x^2} - P\psi = \frac{h}{2\pi i} \cdot \frac{\partial \psi}{\partial t}$$
, where  $\psi$  - it is not known as is a function of coordinate  $x$  and time  $t$ . The square of an absolute value it  $|\psi|^2$  is a probability density of an electron presence in the given area of space,  $i = \sqrt{-1}$ ,  $h$  - constant of the Planck,  $m$  - electronic mass.

The main body of this equation can be obtained from an equation of distribution of a harmonic oscillation, in which one have squeezed kinetic energy of a particle and have added a de Broglie formula depicting wave properties of particles, supposing, that by such primitive image it is possible to permit a problem of a wave-corpuscle dualism. The Schrodinger has added to this salad also potential energy of a particle, by making its "law". On the listed basis, orthodox physics considers a Schrodinger equation completely depleting a wave-corpuscle dualism of particles, though, as a matter of fact, it describes only wave aspect of this dualism, despite of the fact that the particle mass enters in it. "Illegality" of a particle mass in this equation visually is exhibited in relativistic area of speeds, where  $m$  is a function of speed. If this functions to put instead of mass in a Schrodinger equation, it will become inapplicable. For this case a Schrodinger equation substitutes by an equation of the Dirac, which one eventuate in essence of other theory. Besides the Schrodinger equation is basic inapplicable to motion of a separate particle, since at all can not forecast its motion (for example, at a slit diffraction of separate electrons), therefore gives only statistical description of behavior of large number of particles. On this circumstance prefer to close down eyes, describing "motion" of a separate electron, for example, in atom. By adding here capability of obtaining of the solution of a Schrodinger equations only for some elementary cases, causes surprise the statement of orthodox physics, that the Schrodinger equation, in principle, correctly describes any cases of motion of particles. "The precise solution (Schrodinger equations) exists only for very simple problems, for example, harmonic oscillator, atom of hydrogen. But also they require very composite mathematical

methods of calculus. The solution of more composite problems appears practically impossible". N.I. Kariakin etc. "Brief reference book on physics", "Higher School", M., 1962, page 411. The indicated pessimism is aggravated by that the Schrodinger equations is not compatible to Lorentz transformation laws, i.e. contradicts a relativity theory.

The quantum physics can not describe motion of an electron around of a nucleus (as particle restricted in space) and is compelled to esteem "electron cloud" (wave function). Two versions of the analysis both in this case are received contradicting experimental data. If the electron "is spread" in a cloud, in this case energy exuding at formation of atom of hydrogen should be considerably more ionization energy of atom, since at ionization it is necessary to collect "cloud" in one particle, overcoming Coulomb repulsing of parts of a cloud among themselves. The experiments demonstrate that the ionization energy of atom is peer accuracy to energy exuding at its formation. Besides, during formation and atomic ionization, we shall watch a violation of law of preservation of energy. On the second version the electron can be left by a corpuscle, but probability to find it on as much as large spacing interval from a nucleus is different from zero point, especially on such spacing interval, where the thermal energy of an electron is comparable to bond energy with a nucleus. In this case we should watch spontaneous ionization of gas and the activity of detectors of ionizing radiation will become impossible. And if to take into account and "tunnel" effect (in handling of quantum physics), not only spontaneous ionization indivertible, but also all lines of spectra should be purely bedaubed. Thus, mechanical mixing of corpuscular and wave properties in one equation do not decide the issue a wave-corpuscle dualism of microparticles. The tragedy of a modern physics is that it is compelled to sit at once on two chairs: to use classic notions about a particle, as restricted in space a physical body and is simultaneous about a particle, as to a wave - not restricted in space oscillatory process. Thus, not having clear notion, what such a wave-corpuscle dualism of particles, physics is compelled to use this or that party of a wave-corpuscle dualism, outgoing not from criterion of objectivity, and from criterion of "profitability".

The motion of particles on a screw line from any side, perpendicular axis of this line, is represented, as a monochromatic wave distributes on a direction of translational motion of a particle. Making with this wave the same manipulations, as at "conclusion" of Schrodinger equations, we shall receive just it. It gives the basis all true achievements of a modern physics (furbished from imaginary) with the full right to assign and new physics. The quantum physics in a modern kind requires radical revision, that is demonstrated by numerous unsuccessful attempts "to quantize" gravitation. That is, new physics passes in a quantum mechanics if to look at motion of particles not in "root", and from one side and is free to recur with mathematics.

Official physics considers that the quantum mechanics passes in classic mechanics in a case, when the wavelength de Broglie aims at zero point. It is possible, when is formal the constant of the Planck  $h \rightarrow 0$ . Thus the Schrodinger equation passes in an equation of motion of classic mechanics, and the indeterminacy relation loses the restraining force. (Physics of a microcosmos, M., 1980, page 384). The physical sense of zero value of an angular momentum of a particle means, that its mass either speed or radius of a trajectory is peer to zero point.

From the point of view of new physics the decreasing of a wavelength de Broglie is equivalent to decreasing of radius of a screw trajectory and its step, i.e. increase of energy of a particle. At a wavelength de Broglie solicitous to zero point, mass and energy of a body aim at indefinitely large value at the same value of an angular momentum. As all free bodies moving on a screw line completely to take away in them an angular momentum physically it is impossible, though at its full absence they would become classic. Therefore with official physics it is possible to agree, that the motion of a particle will become classic at formal aiming of a constant of the Planck to zero point, only understanding under this constant an angular momentum of a particle. On the other hand, the classic rectilinear motion macrobody can be esteemed as motion of this body on a circumference with indefinitely large radius, i.e. with an indefinitely large wavelength de Broglie. Thus the angular momentum of such body will be indefinitely large, but energy and mass can receive any final value. Customary macrobodies have a wavelength de Broglie of space scales, therefore up to relativistic velocities it is possible to consider their motion practically classic. Thus, the stringent transition from new physics to classic is possible, and for a quantum mechanics is not present. The doctor M.L. Klebanov in the private letter to the author has

given the fine analysis of the first Newton's law: "Besides pursuant to normal physical logic it is necessary to revise the first Newton's law about motion of free bodies in a blank space. It is the law of motion of a mathematical point in a mathematical blank space. By a Newton the law of inertia is formulated as the law of evidence, law of concrete experiment. And if empty physical space still is possible how to identify with a mathematical blank space, the free body in any way cannot be identified with a mathematical point, and it is impossible it to recognize as free, since it has mass by **not free from itself**".

Modern physics and quantum mechanics in particular do not trouble itself with looking up of internal inconsistencies and self-criticism. I shall result in only one example demonstrating, that the modern quantum mechanics is completely unsuitable for the description of atoms. As is known, the orthodox notions on the principle that behavior of an electron in atom determines a kind of a wave function determining probability of presence of an electron in that or diverse place of space around of a nucleus. As any wave function overlaps considerable spacing interval in a radial direction, the electron in miscellaneous places solved a wave function, has miscellaneous energy. At transition of an electron from one energy level on another it as a matter of fact from one random place of one wave function (the random value of energy) passes in other random place of the second wave function. Thus the atom should beam or to occlude photons not of strictly definite energy and we should watch broad absorption bands or a radiation that contradicts experiment - spectral lines very narrow. On the basis only of this inconsistency it is necessary to reject all theoretical constructions of a modern quantum mechanics.

The described hypothesis about motion of free particles on a screw line is alone and basic in this work. Together with the set up elaborations about motion of bodies on a circumference, it is enough of it to make radical revision of our notions, the small part which one is set up in this book.

**Comments of the author.**

**Formula de Broglie and constant of the Planck.** *The orthodoxes do not understand physical sense neither de Broglie formula, nor constant of the Planck. The formula de Broglie - ordinary identical record of an angular momentum of a body. Let's record this identity:  $mVr = mVr$  (1.1). A right part (1.1) is replaceable on a constant of the Planck  $\hbar$  :  $mVr = \hbar$  (1.2). Let's multiply both parts (1.2) on  $2\pi$  :  $\lambda mV = h$ . In the total we have received a de Broglie formula:  $\lambda = h/mV$ . From here follows, that the constant of the Planck - customary angular momentum of particles on a screw trajectory and for all particles it has identical value. The vivid example of misunderstanding by orthodoxes of sense of a de Broglie formula is, that they in a denominator of this formula substitute mass of macrobodies, receive an incredibly small wavelength of de Broglie and to those «demonstrate» absence for macrobodies of wave properties*

References:

<http://www.new-physics.narod.ru>