

Ideas of exact knowledges

Science and technology in the Soviet Union

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Movement of the gaseous medium

Progressive movement

Rotation

Oscillation

Diffusion

Closed

Non-closed

Energy transmission

Transfer of the motion quantity

Mass transfer

Closed current

Non-closed current

Thermal diffusion
⑤

Viscosity
⑥

Concentration balancing

Closed

Non-closed

Longitudinal

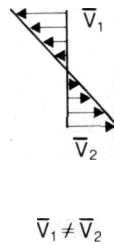
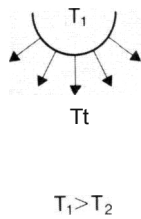
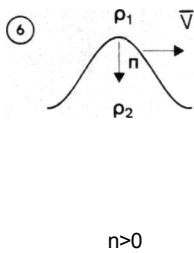
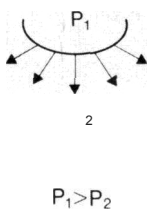
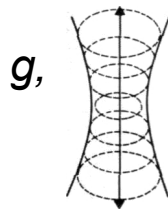
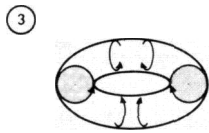
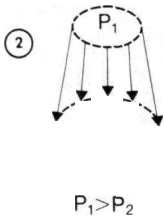
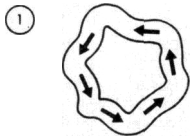
Transversal

Toroidal vortices
③

Linear vortex
④

Sound wave
@

Interface wave



Dynamics of the Ether

Up to now a uniform theory is missing, which covers all physical appearances, from the interaction between atomic nuclei up to the expansion of the universe. The author tries to establish such a theory by resorting to the somewhat forgotten hypothesis of the "ether". He represents the elementary particles as well as the atomic nuclei and electron shells as toroidal vortices of a gas-like medium and applies this model to all forms of appearance.

Vladimir Azyukovsky

The beginning of the 20th century was rich in new ideas, which gave a considerable boost to contemporary physics. However, these ideas are no longer sufficient to establish or develop an overall picture that would unify all known physical phenomena. The most important ideas of physics are based on theories like quantum mechanics and relativity - fundamental sciences which are not based on a simple qualitative model. The absence of such a model allows to use almost without restrictions any mathematical mechanism corresponding to the assumed postulates. It must be pointed out that the view is widespread that a qualitative model of phenomena is not necessary.

In the work "Das Relativitätsprinzip und seine Folgen" (1910) *Einstein* points out that there are two possibilities for the agreement of the experimental results of *Fizeau* and *Michelson*: Either the aether is completely immobile or it is carried along by the moving matter with a velocity which is different from the velocity of motion of the matter.

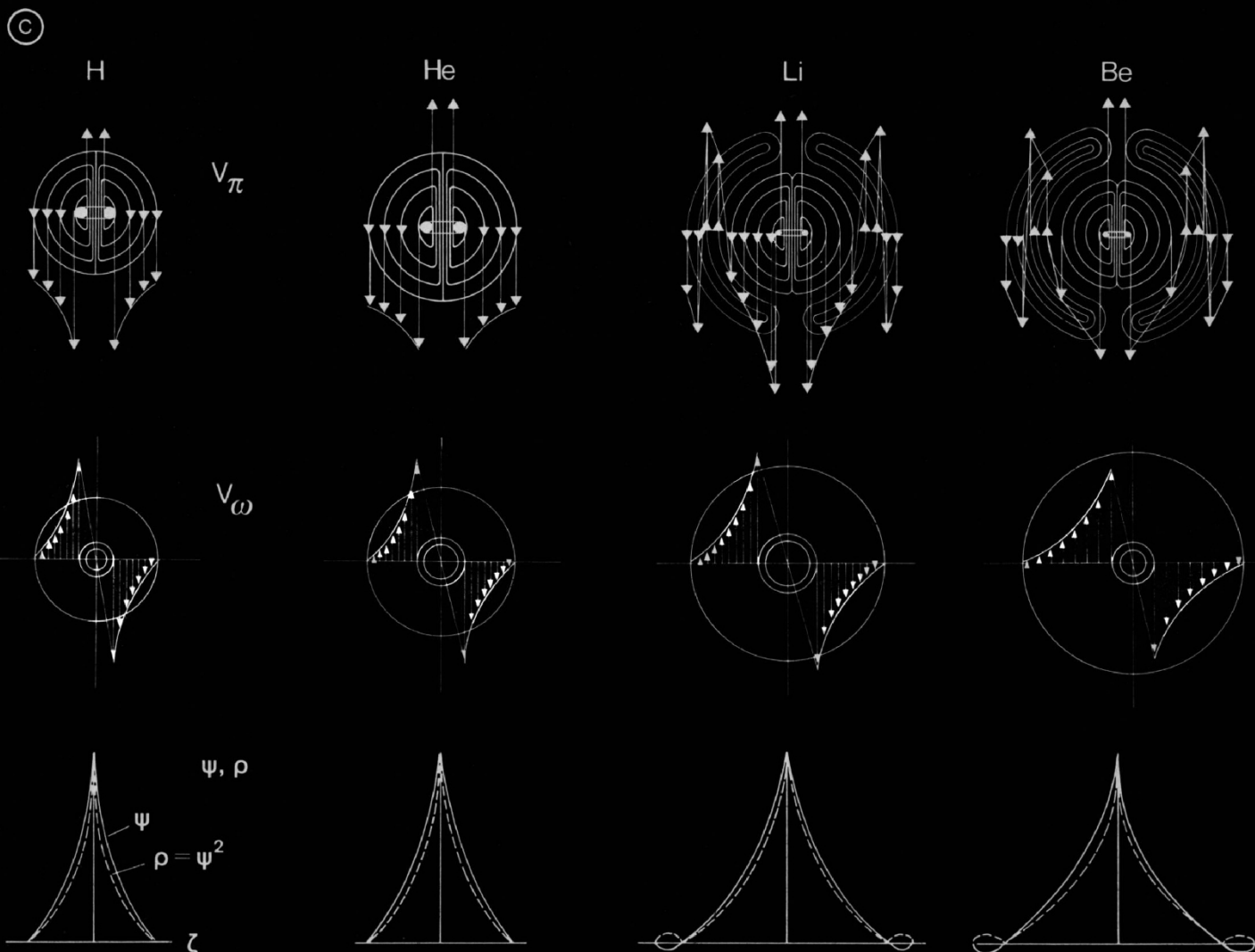
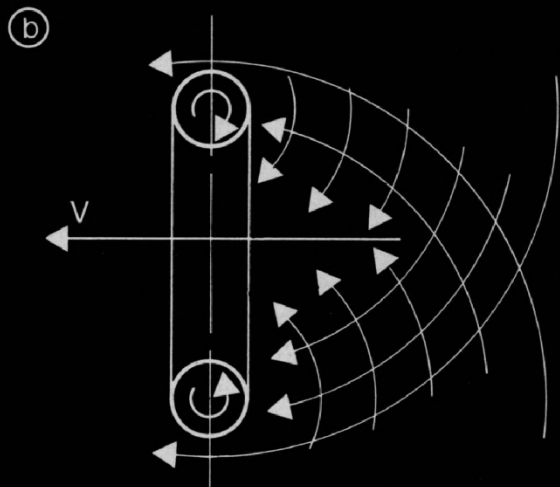
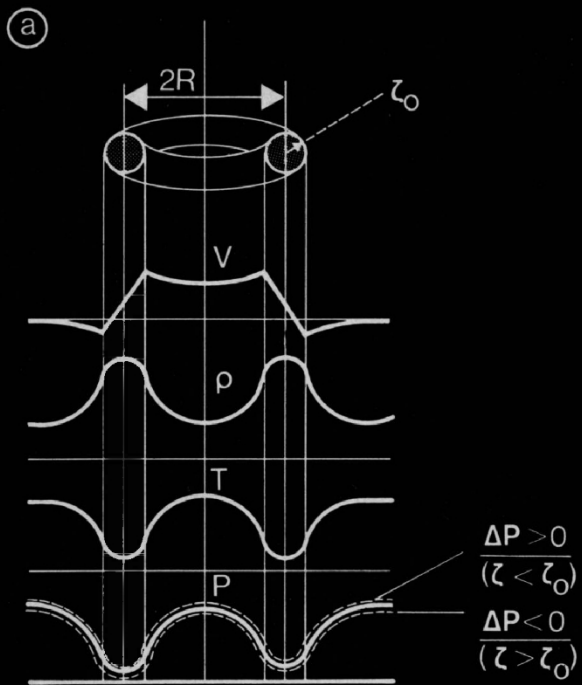
Fig. 1: Overview of possible forms of motion of a gaseous medium.

The development of the first hypothesis led Einstein to a series of postulates. One says that a medium which fills the space is basically missing. This means the renunciation of a qualitative world view model.

A number of predictions of the theory of relativity based on the mentioned postulate and on that of the speed of light independent of the motion have found an experimental confirmation. However, it has not been possible to establish a general theory which would connect all physical phenomena. The second hypothesis was unjustifiably rejected by *Einstein* as too complicated. But just this way allowed to clarify the contradictions in the experimental results of *Fizeau* and *Michelson* without renouncing the medium, the energy carrier. Thus, on the basis of other postulate, it is possible to establish a qualitative model of the structure of matter as well as of the most important forms of interaction.

Ether theories in history

As is known, in the 19th and at the beginning of the 20th century the attempts to establish a physical world view with the help of the "primeval matter" - the ether - failed. They were afflicted with principal errors. All models and theories of the ether had only a limited complex of appearances to the content. The models of *Descartes* and *Newton* could not include the electromagnetic



In the works of *Faraday, Maxwell, Lorentz, Hertz* complete standstill, which again did not consider theories were discussed and not the structure of matter. The consequences of some ether theories were the same. Thus, the work of *Stokes and Fresnel* touched in fact only aberration. The models of *Naier* and *MacCullagh* cut only some moments of the electro-magnetism. Only *II. Thomson* and *J. Thomson* albeit on a very narrow basis, penetrate into the essence of the structure of matter. No theory attempted to give an answer to questions both about substance structure and about the most important alternating of action.

The second shortcoming of all ether theories, except the *Newton* model, was the fact that the ether was regarded as a compact medium. Moreover, the majority considered the ether either as an absolutely hard body or as an ideal liquid. Such an idealization of the ether properties automatically required a transfer of the properties obtained under the conditions of one experiment to the conditions of the other experiment, although these conditions were quite different. This had to lead inevitably to contradictions.

A third shortcoming of many theories, except *Thomson* and *J. Thomson*, is the separation of the substance matter from the ether matter. The ether appears as an independent substance, which interacts with the substance in an incomprehensible way. In the works of *Fresnel* and *Lorentz*, there are in fact three independent substances: the substance independent of the ether, the ether flowing freely through the substance, and the light which is generated in an incomprehensible way by the substance, transmitted from it to the ether, and then taken up again by the substance. The mechanism of these transmissions remains shrouded in darkness.

The theory of relativity, which came into being at the beginning of the 20th century, doubted even the existence of the ether. The confirmation of a number of predictions of this theory

Fig. 2 a.' Course of velocity (v), density (q), temperature (T) and pressure (p) during toroidal motion of a gas-like medium. b.' A toroidal vortex has the ability to self-accelerate in the direction of its axis due to its interaction with the surrounding ether. c. In analogy to the spherical Hill vortex in hydrodynamics, in the toroidal vortex the ring rotation can be fully initiated within the toroidal rotation. d.- In the atomic models of the first elements in the periodic table, the nucleus is a toroidal rotating vortex, to the electron shell correspond vortices of a weaker compressed ethers with schliiclti veise standing waves.

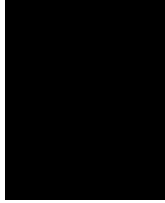
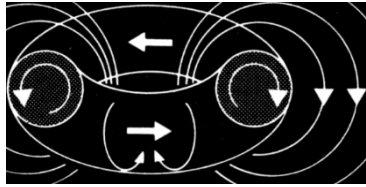
the development of the ether theory practically came to a gravity. It is remarkable, however, that similar ether consequences of some ether theories were the same. Thus, the formulas $E = hv$ (Planck's law) and $E = mc^2$ of questions of *J. Thomson* developed, the latter in 1903. The results of the *Thomson* experiment can be adequately explained by capturing the ether adjacent to the earth-layer (similar to the air boundary layer of an airplane) to explain, and the result of the level experiment thus directly to the existence of a relationship (about the ether) between the light photons and the substance forms.

The Ether Structure

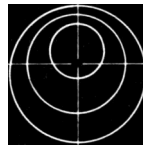
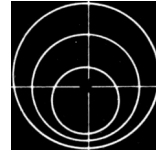
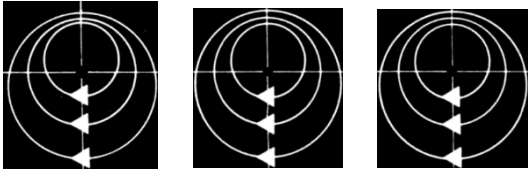
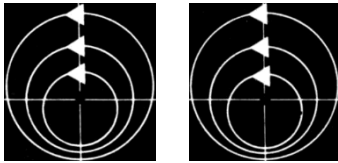
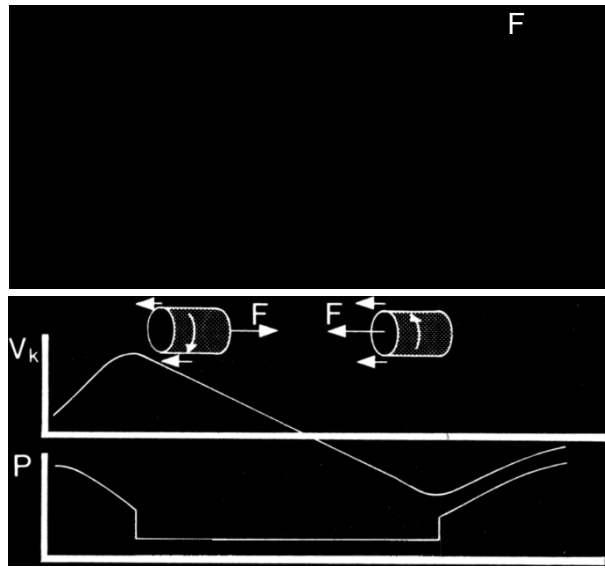
In order to find their way in the structure of any entity, people have always acted in the same way: The object to be examined was no longer taken for a simple one, but - as far as it was possible - was broken down into smaller details, to which then also the "elementary" property was attributed. So it was with the transition from the world as a whole to the "substances" (fire, water, earth, air), to the substances, molecules, atoms and to the elementary particles. Since one knows now that also the "elementary" particles of substances are complicated entities, now the attempt is quite natural not to consider them as elementary and to name even smaller particles as elementary - in the consciousness that with time this concept can be transferred to even deeper lying particles.

If this fact is considered as a starting point, then any particle, even the smallest one, e.g. the electron, must be considered as a totality of even smaller particles. The "elementary" of these new small particles must find its reflections in the following postulates: 1. Unity of the forms of matter on a new level of division (i.e., these particles must be absolutely equal); 2. Unity of the forms of motion on this level of division (i.e., the particles have one and the same form of motion).

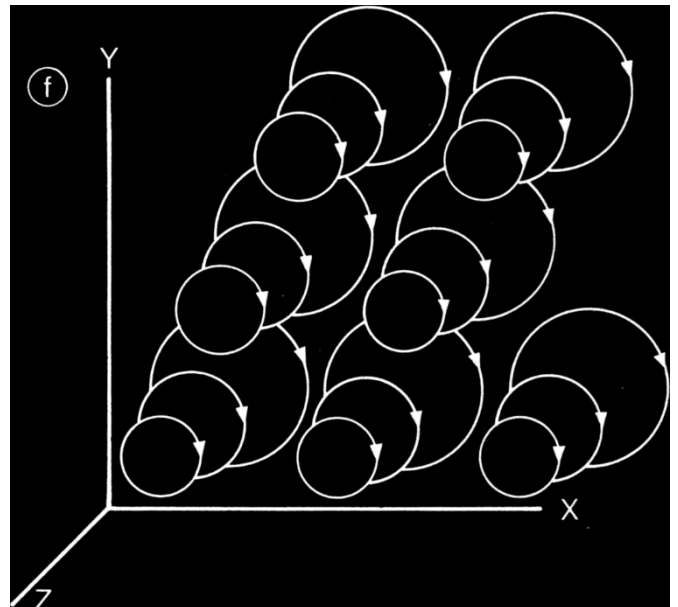
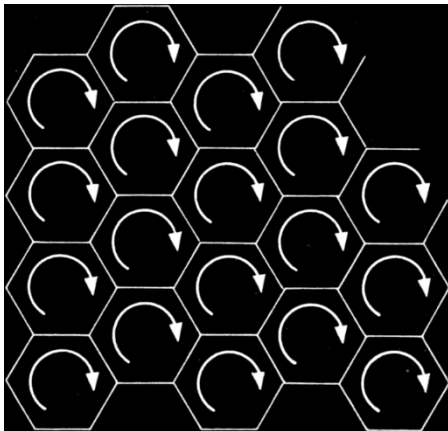
The absolute identity of the particles and the equality of the forms of motion are of course metaphysical assumptions which are used to narrow down the circle of phenomena to be investigated. From these two postulates it follows that matter on a new level of division must be a certain gas-like medium with the same "atoms", which hit each other absolutely elastic. Because the only form of motion resulting from the behavior of the matter particles is the motion in space, which is only limited by the successive impacts, which do not allow any energy transfer within the medium particles. Starting from the assumption that matter is moving on the new



b)



$\neq V$



The question arises: Is it not possible that all known forms of the common substance as well as the known forms of the common matter are the same? Is it not possible that all known forms of the ordinary substance as well as the known

Are the weak and strong effects of the nucleus, the electric, magnetic and gravitational effects detectable in a theory? It is possible!

Let us look at the forms of reference of the gaseous medium (Fig. 1). In principle, the following types of gas flow are possible:

1. Translation - non-closed (in the presence of ' on two areas with different pressure) and closed;
2. Rotation non-closed (the vortex tends to infinity) and closed (toroidal);
3. Oscillation - longitudinal (sound propagation at low pressure) and transverse (in the presence of a density difference and a force);
4. Diffusion Energy transfer (heat conduction), transfer of the B_c displacement variable (viscosity), transfer of masses (for non-equivalent gases).

Each form of motion is based on the same type of motion - the kinetic one - but the degree and form of systematization of the entire gas mass are different for each form of motion.

Each form of bu'egation is possible both individually and together with other forms of bu'egation. Thanks to these forms, the gas has a number of properties: Pressure, density, viscosity and the ability to form vortices and similar structures. We will now try to show that on the basis of the ideas of such a gas-like medium at least the matter-particle structure and the nature of any known vech- selivations can be considered and that it is thus probable that the ether is a gas-like medium and the only kind of matter on the division stage following the "elementary particles".

We will start the consideration of the different forms of the gaseous medium with the closed (toroidal) rotation (Fig. 2a).

Fig. 3a. Influence of the atJen ÜDtaiioisfortieii ai:f Jen unigebeiden A'tlter. b. In gleichigericlit ring rotationii the toroidal vortices repel due to 'ler ':ladurclt arising pressure diperen-en itti timgebendeti A'tlter. c: Dei "nlg",qengeset--t gericlit ring rotation targeted siclt zivei benaachtbar toroidal vortices. d. Liclitstrahlung represents a sat-- of liieari i'rbulae from t yy "caritiatistraces." e.' The hlaxi i ell Gleichtiingen Jes electriclten field trimmed a flat model of side by side tVir- hel. L: Da.s complete model of the IVirbelfeldcs (iiti space) possesses--t a transverse meet a longitudinal propagation of the A'tliei ii'irbel.

The toroidal vortex is known to have the following properties : It is a stable structure with a certain kinetic energy of rotation. Within the

vortex, the pressure is lower than in the circle (suction effect of the vortex); the density is higher inside; in the center, the density can be so high that the gas particles behave like a hard body; the temperature (here proportional to the square of the mean velocity of motion of the particles) is relatively low.

The fabric and the ccrnwecchl effecten

The difference in density inside and outside the vortex is determined on the one hand by the intensity of the vortex movement and on the other hand by the speed of movement of the particles in free space. The toroidal vortex is stable and resists deformations. Attempts to compress it create an overpressure inside, while expansion creates a negative pressure,

i.e., the pressure decreases. The toroidal vortex thus behaves like a stable "elementary" particle of matter. In the absence of an external medium, the vortex dissolves. Thus, for the existence of a stable vortex particle, an external medium is required. Since there are no barriers for the spreading of this medium, it must be assumed that this medium (the ether) is spread in the whole infinite space. Since there are no other forms of the gaseous medium which create stable structures, it may be assumed that the substance is toroidal.

vortices of strongly compressed ether, whose particles (let us call them "etherons") have a size much smaller than the size of the smallest known particle of matter.

The velocity of the etherons must be much higher than the circular velocity of the vortex in the whole body of the vortex. The toroidal vortex acts on the adjacent ether layers, and currents of weakly compressed ether are generated in the entire adjacent space.

Under these conditions one may assume that all stable particles of matter are ether vortices. The mass of the particles depends on the number of aetherons which have been carried along by the ether vortex. It is not at all necessary that the masses of certain particles with the same designation, e.g. the protons, are absolutely equal. Probably the masses can differ from each other within the limits allowed by the stability conditions.

It may be assumed that the nuclei of heavy elements do not consist of meso- nes exchanging protons and neutrons, as is generally believed. The nuclei of heavy elements simply represent larger whirls than those of the ether in the case of nuclei of light elements.

When toroidal vortices collide, waves must propagate on their surfaces because there is a strong restorative force and a density difference between the vortex body and the ether of the environment. Since the density is different in the different ether layers, the initial excitation produces a series of waves that are asynchronous to each other. Thereby, the collapse of the sinks (negative pressure or suction regions) will lead to the rupture of the toroidal ring if the world amplitudes are large enough. The stability will be disturbed so much that the ring will disintegrate. However, since its individual parts have kinetic rotational energy, they will strive to close back into themselves or with the next adjacent part. Not every particle state is stable, however, so the decay will continue until stable reduced toroidal vortices are formed. The picture corresponds to the weak interaction.

Among the other properties of the toroidal vortex, it is necessary to point out its ability to self-accelerate along the axis perpendicular to the torus plane (Fig. 2b).

The Atomic and Molekülmodell

The toroidal rotating ring can have a further rotation around the torus axis - a ring rotation. This rotation will cause a rotation of the surrounding aether layers and lead to additional energy losses due to the aether viscosity. A system in which the ring rotation is completely enclosed within the toroidal rotation of the ether layers immediately adjacent to the primary torus proves to be more stable. Then a spherical aether vortex is formed, somewhat analogous to the spherical Hill vortex in hydromechanics. However, this has an active center of rotation, outside of which the ring rotation no longer shows any effects. The ether layers surrounding the primary torus play the role of balls in a ball bearing (Fig. 2c).

This model corresponds to a hydrogen atom in that the torus with the ring rotation represents the nucleus and the spherical aether vortex surrounding it represents the electron shell in the S-state. Thereby the ψ -function in Schrödinger's equation does not correspond at all to the "Probability of occurrence of the electron in the given point", but the ether density.

More powerful vortices, which correspond to the larger cores, also form more intensive aether currents around them. In this case, layer-by-layer fluctuations occur around the cores in the adjacent ether layers, which cause the emergence of standing waves. These ensure the stability of the system by the fact that the ring rotation

does not reach the outside of the whole system. It is obvious that with an increase of the core size more layers of the adjacent aether will be involved in the total motion and that in them a higher wave number will arise. The ψ -function will also correspond to the ether density. The best stability conditions are to be found in standing waves, because here the energy scattering is lowest. This assumption agrees also with the conditions resulting from the Schrödinger equation.

Thus, we arrive at an atomic model in which the nucleus is a toroidally rotating vortex of a strongly compressive ether with additional ring rotation, and the electron shell is vortices of a weakly compressive ether in which standing waves are propagated in layers (fig. 2 d). Thereby, in a molecule consisting of several atoms, two atoms at a time have a common part of the ether current.

Electricity, Magnetism and Gravity

The ring rotation can only be in two directions, right or left, compared to the toroidal one. Correspondingly, the outer toroidal layers have either a right or a left movement. Let us consider how two such vortices will behave, which are in immediate proximity to each other (Fig. 3).

The toroidal motion forces the ether layers surrounding the torus to shift with respect to the torus in such a way that it tends to self-accelerate along its central axis. If a second torus enters this flow, additional pressures are created on the torus surfaces, from which the tori are aligned in such a way that a total ether flow is created; in this case the directions of the toroidal rotation will be the same. If the directions of toroidal rotation are also the same, the gradient of toroidal velocity between them will be zero, and consequently the ether pressure between the tori will be the same as in open space. Towards the other side of the tori, the ring motion velocity will gradually decrease, and consequently the pressure will be relatively low: The tori repel each other.

The reverse is true for opposite ring rotation: The velocity gradient between the tori is larger than on the opposite side. The aether pressure between the tori is lower, they attract each other. The approach occurs up to a certain critical value, which is determined by the approach ability of the layers moving in opposite directions without loss of the layer structure, which again depends on the viscosity.

Comparing the behavior of toroidal vortices with ring rotation with the behavior of electrically charged particles, one can come to the following conclusions: 1. the magnetic moment of the material particles is an expression of the toroidal rotation of the ether; 2. the charge is an expression of the ring rotation of the ether; 3. the polarity of the charge corresponds to an orientation of the ring rotation with respect to the toroidal one;

4. magnetic field consists in progressive motion of ether;
5. magnetic field strength is proportional to speed of progressive motion of ether (non-linear dependence);
6. electric field strength is intensity of vortical motion of ether;
7. spin becomes an expression of rotation types - toroidal and ring rotation.

From all this it is clear that the charge is not concentrated in any part or in any particle layer, because both rotations - the ring rotation and the toroidal one - cover the whole particle.

Practically all particles have a magnetic moment; this means that all particles represent toroidal ether vortices. Not all particles have a charge, consequently not all particles have a ring rotation.

As can be seen from the atomic model above, nucleus and electrons have a different direction of the ring motion at one and the same direction of the toroidal motion with respect to their centers (for electrons the point of maximum ether density must be taken for the center), as it also corresponds to their opposite charges.

The consideration of different phenomena of electrodynamics from the point of view of the presented ideas about electric and magnetic fields shows the possibility to open up the mechanism of these phenomena. Thus, electromagnetic radiation - including light, which is a set of linear vortices of the type "Karman roads" - must have ballistic properties: It must have a velocity in the vicinity of the light source that is composed of the speed of light at a great distance from the light source and from the light source itself (Fig. 3d). Maxwell's equations describing a flat vortex model (fig. 3e) have to be specified, because a complete model (fig. 3f) provides for a longitudinal propagation of the aether vortex in addition to the transverse one.

As already said, the vortex motion is accompanied by a decrease of the mean chaotic velocity of the particle motion. This means a decrease of the "temperature", which is understood here in the same sense as, for example, the "temperature" of electrons.

becomes. So the vortices are somewhat "colder" entities than the ether surrounding them. Consequently, the "ether" will "cool down" on contact with the vortices, and the vortices will increase in "heat". The decrease of velocity of the surrounding particles is accompanied by a decrease of pressure of the ether (fig. 4a).

If two masses of material are in a certain ab-

If the masses of the two masses are closer to each other, the side of each mass which is closer to the other mass will have a lower temperature. Consequently, the ether pressure on this side is also lower than on the opposite side. Thus, the masses will attract each other. According to the equations of heat conduction in gases, this attraction will be indirectly proportional to the square of the distance and directly proportional to the size of the masses, because the ether will be cooled by all vortices present in the mass.

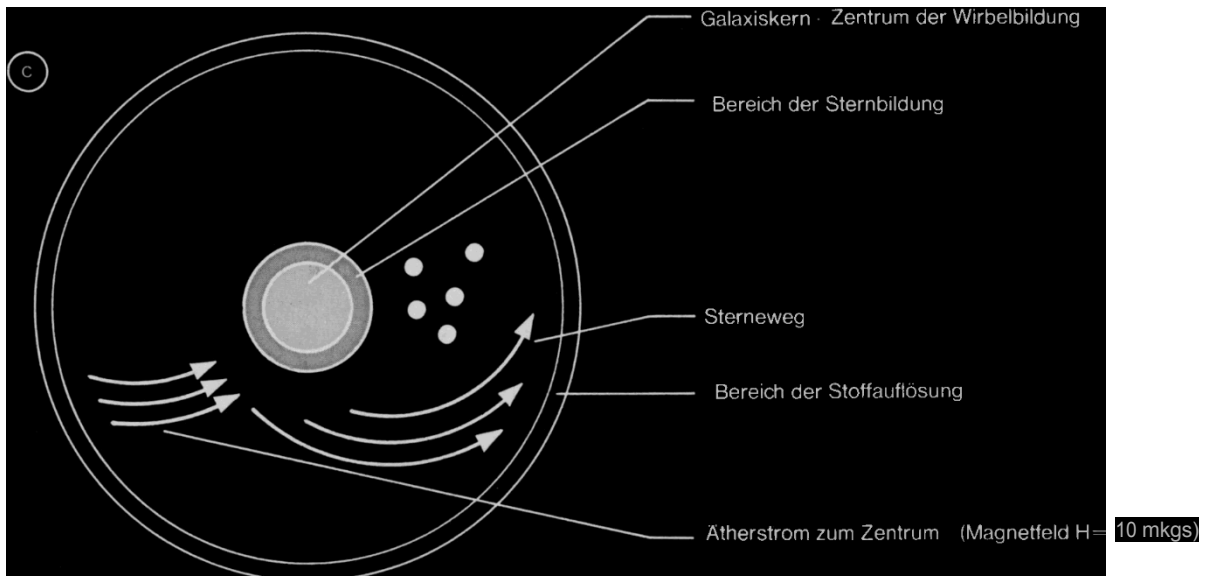
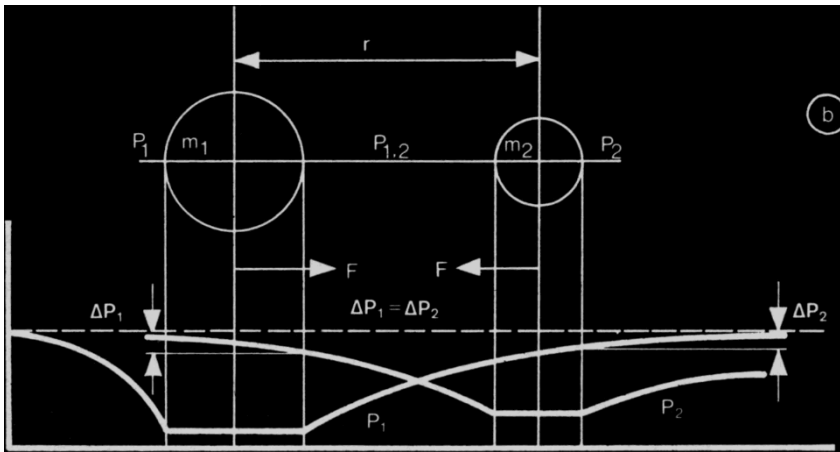
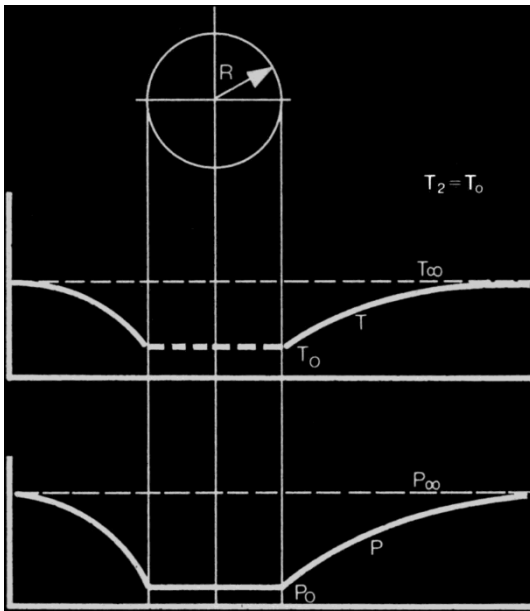
From the above it can be concluded that the velocity of propagation of gravity is a velocity of propagation of the "first sound" in the ether. This velocity was determined in 1787 by *Laplace on the* basis of the observation of the moon acceleration for centuries. He calculated a value which is at least 50 million times as high as the speed of light. But the speed of light is a speed of the "second sound" - a propagation speed of transversal temperature fluctuations (in known substances such a phenomenon is observed in helium-II).

From what has been said it is clear that the speed of motion of the aetherons in the vicinity of a mass of matter is relatively low. If a photon - that is a system of aether vortices - passes near this mass, the photon will move in the radial direction to the mass because of the speed difference of the aether particles, corresponding to the speed difference of the "second sound" not on a straight line, but on a curved one, inclined to the mass of matter. This phenomenon we call today "space curvature".

Some questions of cosmogony

At present the opinion is represented that the universe expands, of which allegedly the so-called "red shift" testifies. But if this phenomenon is considered from the point of view of the ideas discussed here, it becomes clear that there is no reason to interpret the "red shift" only as an event of the Doppler effect.

Assuming that the electric field is a vortex of weakly compressed ether and the magnetic field is a progressive ether motion, the electroma-



genetic wave actually has a vortex set of the type of the "Karman roads" represent. Thanks to the viscosity of the medium, the vortices must diffuse, the circular velocity of rotation and correspondingly the linear velocity of the entire road will remain the same, but the size of the vortices will increase with time, their energy will decrease. This phenomenon is impossible for continuous radiation for ordinary longitudinal oscillations. However, light is known to consist of short pulse packets of photons separated by a certain distance. Therefore each packet can change its dimensions.

Considering the "red shift" as a result of vortex diffusion, one obtains the law of decrease of photo-energy with time or distance due to the laws of *Hubble* and *Planck*:

$$E = E_0 e^{-\alpha r} e^{-\beta t},$$

where r is measured in cm and t in s, and the kinematic coefficient of ether viscosity can be determined as a quantity $\nu = 3 \cdot 10^{28} \text{ cm}^2/\text{s}$. For comparison, note that the kinematic coefficient of viscosity of mercury is $1.3 \cdot 10^{-4} \text{ cm}^2/\text{s}$ and of hydrogen is $1.05 \text{ cm}^2/\text{s}$.

From the presented point of view it can be also tried to consider some questions about the structure of the galaxy (fig. 4c). It is known that in the center of the galaxy there is a nucleus which continuously produces matter - in huge quantities. According to the present ideas, this matter cannot come from anywhere, and this phenomenon is inexplicable. However, from the point of view of the formation of ether, this substance can be explained as ether which comes from outside and whose current is understood by us as a magnetic field of the spiral branches of the galaxy. The created vortices, new protons, form electron shells from the ether surrounding them.

Fig. 4 a. In the Vortices, the temperature and pressure is lower than in the surrounding aether. b. Since the pressure between two closely spaced vortices is lower than outside, the Vortices attract. The attraction is given by the law of gravity. c: Cycle of the A'tlier in Jer Galaxy: In the center - so far unexplained - huge amounts of matter are created in the form of newly formed Vortices, first protons, which form electron shells from surrounding A'ther. Because of the gravitation the stars are formed, which strive out of each other because of the gas pressure. The stars gradually lose their mass by radiation, they give the a'tlier back to the space attr't.

Under the gravitational influence, the atoms form star shapes. However, as the gas formed tries to expand, the stars formed from it also strive to move away from the center of the galaxy. With the distance from the galaxy center the stars lose their mass in the form of radiation and thus return the aether to space: From a strongly compressed state in the material nuclei the aether changes into the weakly compressed state. At the edge of the galaxy the star finally has to dissolve completely into surrounding aether, whereby the matter returns to the center of the galaxy in the form of a magnetic field (progressive aether movement). Thus, a circulation of matter within the galaxy is guaranteed. A closed process takes place which, once started, can last forever. The collision of the stars of a galaxy or of two neighboring galaxies, which for some reason have dropped out of the total rhythm, can lead to the formation of an area of vortex formation, which can prove to be stable if it is large enough. This area can be the birthplace of a new galaxy.

Between the galaxies existing at the same time, besides the gravitational effect, there must also be an interaction via the pressure of the adjacent aether, which regulates the vortex formation in the nuclei as well as the galaxy size.

Since the galaxy is a structure in whose area a cycle of matter and energy is going on, it may be assumed that within a stable galaxy the entropy keeps on a constant level, but in the calculations both the vortex-forming and the vortex-dissolving processes must be taken into account. It is possible that on average the entropy in the whole universe is also constant.

Of some interest is the origin of cosmic rays from the point of view of ether dynamics. Since the toroidal vortices tend to self-acceleration, the particles of matter, which are long in free space and left to themselves, have reached a high velocity. However, this speed cannot be higher than the speed of light, because the resistance of the ether increases rapidly when approaching the speed of light.

Physical invariants - quantity of matter, space, time

For the determination of physical regularities some invariants have to be clarified, i.e. values which remain the same under arbitrary changes of the conditions. As a rule, for such invariants, apart from the energy, rather arbitrary quantities are considered, e.g. the momentum of interacting particles under the most different interaction conditions.

or the speed of light. As variables function such quantities as mass (dependence of mass on velocity), space ("curved space") and time (dependence of the course of time on velocity, twin paradox). The explained ether model causes us to return to the selection of the physical invariants.

The idea that the particle mass of any substance consists of the sum of the masses of the ether particles forces again to the assumption - just as earlier in classical physics - that the quantity of matter is an invariant and the inertial mass is a measure for the quantity of substance. Here, the mass defect in nuclear reactions or the increase of the mass, if the motion velocity of the particle approaches that of the light (if this, which is not yet certain, is really true; because the measuring methods of the mass used today do not give an unambiguous answer to what changes - the mass or, for example, the particle charge), experiences a new interpretation: The mass does not go into

energy, but in the first case a part of the amount of substance of the part-bound to the vortex movement is transferred.

In the second case, a particle joins the already formed vortex, the substance from the adjacent ether layers.

The second invariant is the space, because its arbitrary

areas are completely equivalent, and consequently the space - as was the case earlier in classical physics - for Euclidean are valid.

In the criticism of the Euclidean space two well-known paradoxes are usually mentioned: the Olbers paradox, according to which the whole sky must appear as an uninterrupted star shining if the space is uniform, and the Seelinger paradox, according to which the number of the gravitational lines goes to infinity if the space is infinite. However, purely physical ideas are disregarded.

The Olbers paradox can also be applied to the Euclidean space is easily solved, if it is taken into account that the light of a distant star has to cover a correspondingly larger distance and is absorbed by the interstellar medium more strongly than the light of a nearby star. Moreover, the diffusion of the photon vortices must cause the light from the distant stars to pass from the light region to the radio frequency region. As for the Seelinger paradox.

"infinite Zahl of gravitational lines" in space completely symmetrical, and consequently the effect of these "lines" is completely balanced. Thus, the mentioned paradoxes cannot be considered as a proof of the non-Euclidity of space.

The third invariant is finally the time, because the same processes will run the same way at any time under the same conditions. The well-known idea of the change of the time course with the velocity is based on the unfounded postulate about the "constancy of the velocity of light", and the "experimental confirmation" can also be explained with the changes of the constancy conditions of the particles when their motion velocity in the aether approaches the circular velocity of the vortex rotation.

Thus, the amount of matter, space and time can be basically The most important invariants of physics.

Concerning the law of conservation of energy and the law of angular momentum: Both theorems have to be valid only on the level of division of matter into etherons and not on the level of division of matter into "elementary matter particles"; this, of course, only until the development of physics demands an investigation of the structure of the ether particles themselves, because the matter is inexhaustible.

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