

REAL PHYSICS

The above title is chosen to contrast what will be presented here with the fantasy physics that has been promulgated during the past century to the present time. This trend has been sanctified by Albert Einstein who declared that imagination is more important than knowledge. However our universe is already designed, and all that we really can do is collect this knowledge.

Outside of the so-called main-stream physics were made substantial advances, but these have been systematically ignored by the main-stream and the media. Thus, the Internet remains the only forum to report the progress in physics. This article will present the structure of the photon and electron, but since these models are based on previous knowledge, a brief historical outline is included.

The ancient Greek thinkers, and particularly Plato, have determined that we have basically to deal with two things, namely *substance*, and *form*. Without a substance there is no existence, and we cannot deal with something that does not exist. As sensible as this reasoning is, most of today's physical theories are based on mathematical concepts in void multidimensional spaces without specifying a substance.

Once it is assumed that a substance exists, then one can inquire about its form. The Greeks concluded that the substance must consist of a multitude of movable parts, which they called *atomos*, meaning that these parts cannot be cut into smaller pieces. Namely, if these basic parts of substance could break into smaller pieces, then, in time, they would grind themselves into parts with different sizes and forms, causing the universe to change its properties, possibly something non-functional. Since the Greek philosophers did not engage themselves in manual labor, they did not perform experiments to substantiate their conjectures. Consequently, they ended up making some mistakes in their reasoning.

They concluded that in order to account for the great variety observed in nature, there would have to exist a variety of forms among the fundamental parts. Thus, after the chemical elements were discovered in the eighteenth century, Dalton called them *atoms*, which, as we now know, is wrong because the atoms can be decomposed into smaller parts.

The physicists then concluded that the actual ultimate entities of substance are what they call *fundamental particles*, such as electrons, protons, neutrons, and so on. This, however, is also not correct because these particles can be converted into *energy*, whose nature is not described by the current physics. Therefore we still have to explain what energy is, and how energy produces these 'particles', which really are vortices, not particles.

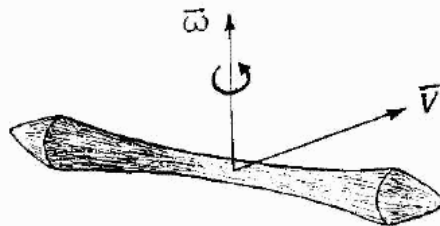
The solution is as follows:

There exist true indestructible fundamental particles of the sort that the Greeks postulated, which I call *gyrons*, to distinguish them from the mis-named chemical atoms. These true atoms (gyrons) are much smaller than the electron and proton, and in their motion represent the energy. Energy consists of moving gyrons. The universe is filled

with these gyrons, that move on the average with the speed of light in all directions, while colliding with each other. We can call such a substance gaseous gyron-aether.



All gyrons have the same form and size, so that no matter where they are, the physical properties of the aether do not change, and we say that the physical laws of the universe are conserved because they are the same everywhere. If the gyrons are evenly distributed then the space has uniform properties, and is called *vacuum*. Thus, vacuum is not empty, it is filled with randomly moving gyrons that manifest small fluctuations in their density and speed distributions.



If the vacuum fluid, comprised of gyrons, is disturbed, then waves and vortices can form analogous to sound and tornadoes in the air. The waves are called electromagnetic radiation, of which light is a small part, and the vortices appear as electrons, protons, neutrons, and other material manifestations.

The waves, which are supported by the fluid medium, must propagate with a constant speed in the aether (vacuum), while the vortices, where the gyrons move in circles, can circulate at any place, or drift around with some speed that does not exceed the speed of light. This follows naturally because the vortex as a whole cannot move faster than the parts of which it is composed. This fact led to the so called Lorentz transformation for matter, that Einstein incorporated into his special theory of relativity.

That the above-described is the actual reason for this behavior of matter can be surmised from the fact that material vortices (electrons) entering a region where the speed of light is slower than in vacuum, a super-luminal boom cone is observed, termed Cherenkov radiation.

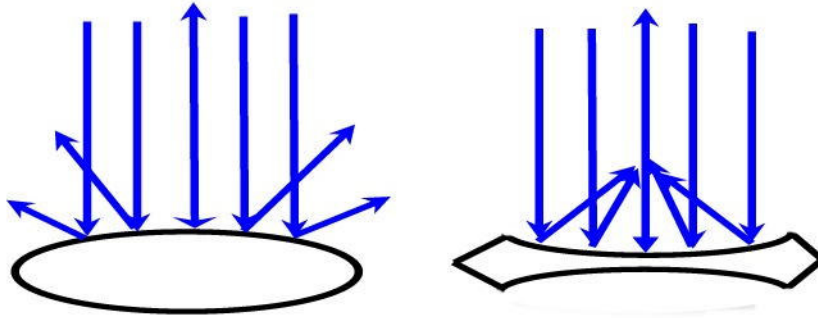
In short, by realizing that gyrons are the fundamental particles populating the universe, we arrive to a fluid called aether, whose disturbances in motion are manifested as matter and radiation. From here on it is merely necessary to find the mathematical description for these motions. This topic is called fluid mechanics, which has been formulated by the great mathematician Euler on the basis of Newton's laws of mechanics.

Present physics deals separately with such phenomena as gravity, electricity, magnetism, and so on, but I have demonstrated that they are all derivable from the fluid mechanics of the aether, and therefore all the multitude of postulates and speculations presently promulgated in physics, are superfluous.

It turns out that what is now termed electrical field corresponds to acceleration in the aether. Magnetism is due to rotation in the aether, and gravitation is due to diffusion in the aether. The electron vortex possesses all these properties. The rotation of gyrons gives rise to the magnetic field associated with the spin of the electron, while the flow of gyrons in and out of the electron vortex gives rise to the gravitational and electric fields.

Since the electrical field depends on the collisions of rotating gyrons, we have two polarities, called negative and positive fields. Present physics associates these fields with the electrical charge, which in reality does not exist. The electrical field polarities arise due to the fact that there exist two possible directions for the rotation of a vortex. Consequently, we have only two equal and opposite charges. The rest of the material particles, such as protons and neutrons, are more complex assemblies of the electron vortices.

The electromagnetic radiation consists of wave packets called *photons*. Such waves are only possible in the aether consisting of semi-concave oblong gyrons. A fluid, such as air, consisting of spherical and convex particles, cannot support such waves. I have derived the mathematical relationships that describe these waves in all details, and related them to the existing equations applicable to electromagnetic phenomena. Yet, all of this is completely ignored by the main-stream physics, not because they doubt the correctness of my findings, but merely because they are set to collect public support for their bogus research, as stated by Dr. Robert Wilson [PHYSICS TODAY **39**, 26,1986].



The interested reader can find the details in my websites <http://www.gyrons.net> and <http://www.neuronet.pitt.edu/~meno> .

After three thousand years of effort to understand the design of our universe, we finally reached the stage where conceptually we can explain all observed physical phenomena in a remarkably simple form, consisting of two conservation equations, namely for substance (number of gyrons in a chosen space), and their flow (the number of gyrons in the chosen volume of space multiplied by their mean velocity).

$$\begin{aligned}\partial\Gamma/\partial t + \nabla \cdot (\Gamma\mathbf{v}) &= 0 \\ \partial(\Gamma\mathbf{v})/\partial t + \nabla \cdot (\Gamma\mathbf{v}\mathbf{v} + T) &= 0\end{aligned}$$

where Γ is the tensor describing the distribution of gyrons in the chosen volume, and \mathbf{v} is the mean velocity of these gyrons, while T is the collision tensor that describes the collision process of the gyrons within the chosen volume.

Although in principle there is no phenomenon that is not described by these equations, finding the solutions to these non-linear partial differential equations is not a trivial matter.

The task of finding the appropriate solutions is aided by the vast amount of existing experimental data. For example, we can immediately link these equations to the electromagnetic theory formulated by Maxwell in the following manner:

$$\begin{aligned}\Gamma\mathbf{v} &\rightarrow \mathbf{A} \\ \nabla \cdot T &\rightarrow \nabla V + \mathbf{W}\end{aligned}$$

where \mathbf{A} is the vector potential, V the scalar potential, and \mathbf{W} is the weak field, which has a shorter range than the electrical field, and was not known to Maxwell.

From these the electromagnetic fields are specified as

$$\begin{aligned}\mathbf{E} &= -\nabla V - \mathbf{W} - \partial\mathbf{A}/\partial t \\ \mathbf{B} &= \nabla \times \mathbf{A}\end{aligned}$$

Based on the known required properties for the fields associated with photons and electrons, I was able to find the appropriate expressions for the potentials that sustain these dynamic structures in the aether.

These fields contain kinetic energy in the form of gyron motion, which is expressed as

$$energy = \frac{\epsilon}{2} \iiint_{volume} (\mathbf{E}^2 + c^2 \mathbf{B}^2) d(volume) = mc^2$$

where the permittivity ϵ is a factor that relates the electrical to mechanical units, and m is a parameter termed mass, which is usually associated with the energy content in an aether vortex, such as electron.

The momentum of the fields is given by the cross-product of the fields

$$momentum = \epsilon \iiint_{volume} (\mathbf{E} \times \mathbf{B}) d(volume) .$$

Through the above equivalences, it is now clear that the universe is mechanical, and there is no need to introduce other concepts, such as various forces, on which current physics is based.