

2. Concepts and results of the proposed theory

The theory proposed in this book calls into question certain principles of modern physics and proposes new ones or actualize the concepts that have been abandoned.

The main foundations and results proposed by this theory are as follows:

- the fundamental concepts are the concepts of space and movement;
- the concept of time is not a fundamental concept but infers the concepts of space and movement. However, this concept is unavoidable because it is very handy and it will be used in the theory developed in this book;
- at any moment, the present is the only physical truth and this is valid for the entire universe, that is to say, the present moment is the same whatever the place in the universe;
- what is called 'clock' is part of a subset of the physical phenomena that are periodic phenomena (for example, the rotation of the earth around the Sun or an atomic clock). Periodic phenomena, like all physical phenomena, are subject to the effects of gravity and to their own speed according to the privileged referential defined by the field of creatons. Thus, when two atomic clocks are subject to different speeds or different gravitational fields, the time does not elapse differently for the two clocks but the clocks themselves are physically disturbed by the speed and the gravitational field changing their period;
- ether exists but it is preferable not to call it this way any longer because, since the beginning of the 20th century, the term has a negative connotation. The new ether will be called: OMNIUM or field of creatons where the creatons are very fine 'entities' travelling through the universe in all directions at supra-light speeds;
- the actual properties of the creatons field are very different from those commonly attributed to the ether at the end of the 19th century. The most important was the stillness of ether in which the planets and stars "bathed". In the proposed theory far from being immobile the field of creatons consists of an immensely large number of creatons with speeds quite superior to the speed of light;
- the gravitational aether and luminiferous aether is only one called the field of creatons (the gravitational ether is used to explain gravitation and the luminiferous ether is the medium of propagation of light);
- the field of creatons is the real cause of gravitation;
- the field of creatons is the medium of propagation of light;
- matter consists of vortex-material, i.e. of creatons vortices;
- light (photons) and more generally electromagnetic waves consist of vortex-light which are also creatons vortices;
- the vortex are basically waves whose velocity is the speed of light with regard to the field of creatons;
- all the vortices are continually renewed by new creatons. At the same time, new creatons are absorbed by the vortex which emit the same amount of creatons;
- the fundamental nature of light is a wave. The displacement of a photon in the space can be compared to the propagation of a group of waves on the surface of the ocean, constantly renewed by new molecules of water and being able to transmit their energy when hitting a pier just as the photon constituted of light-vortex, constantly renewed by new creatons, transmits its energy hitting the atom of a metal (as for example in the photoelectric effect). The photon has a propagation medium: the field of creatons.
- this vision of the photon, basically considered as a wave, removes the difficulty considered by the author as inconsistency: the photon being a particle travelling but at a single speed (the speed of light) which is in fact the characteristic of a wave;
- the energy of the photon is not distributed uniformly throughout the space which it occupies, but is concentrated in regularly spaced areas. The photon can be modeled by queues of vortex-light equally spaced half or a quarter of a wavelength;
- the theory of the creatons offers three types of referential:
 - the absolute referential: it is a purely mathematical and imaginary framework corresponding to a free universe of any material and any radiation-wave electromagnetic, i.e. without matter vortex and vortex-light. Moreover, the universe is considered infinite and uniform hence without expansion. This universe would consist only of a uniform field of creatons;

- the light-Creatons referential or Preferred Frame of Reference: this 'pseudo-referential' is bound to the field of creatons (each point M belonging to the referential at a time t is such that the average of vector speed creatons in the elementary volume encompassing the point M at time t is zero). This referential is linked to the real universe, i.e. with matter and radiation;
- material referentials: these referentials match those of relativity i.e. referentials with clocks and substantive rules (undergoing expansion of durations and lengths compression) that require the Lorentz transformation to pass from one to the other.

- any massive body creates a centripetal acceleration field due to the creatons field whose expression is $\overrightarrow{\Gamma}_{gravitation}(\vec{r}, t) = -\frac{2GM}{r^2}\vec{u}_r$ and:

- light undergoes directly and fully this acceleration field so that a ray of light is deflected of $\delta = \frac{4GM}{c^2 \cdot r}$ by a massive body. In addition, the nature of a photon composed of several regularly spaced sub-entities explains the frequency offset suffered by a photon in going

away or in approaching a massive body according the formula $v_{photon} = \frac{v_\infty}{\sqrt{g_{00}}} \approx \frac{v_\infty}{\sqrt{1 - \frac{r_G}{r}}}$

- the nature of matter makes the acceleration experienced by it is expressed as follows:

$\overrightarrow{\Gamma}_{matière}(\vec{r}, t) = \left(\frac{1}{2} + \varepsilon\right)\overrightarrow{\Gamma}_{gravitation}(\vec{r}, t) = -\frac{GM}{r^2}\left(1 + \frac{\varepsilon}{2}\right)\vec{u}_r$. We will see in this book the expression of ε ;

- the strong force which explains the cohesion of the atomic nucleus is also due to the action of the creatons field. We find an expression similar to that of gravity but with a constant K, much higher than the gravitational constant (about 1038 times higher). This would be mainly due to the fact that nucleons would have preferred areas for emission of the creatons. The force exerted in space points outside the axes of emission would be enormous because the action of incidents creatons, coming from the field of creatons would be virtually not compensated by other creatons issued by the nucleon. The attracted body, too close to the nucleon, undergoing no longer an omni-directional field of creatons ensuring its cohesion, would emit a large number of creatons pushing the nucleon. This would be the case of electrons that would suffer alternately at a very high frequency a strong attraction, then a strong revulsion on the part of atomic nuclei while gyrating around him;

- in fact, the strong force would be a fundamental force, the gravitational force being only a residual force resulting from the sum of all the strong forces due to all the atoms composing the attracting body.

- light suffers the effects of the strong force in a way similar to the gravitational force. So the light is deflected by an atomic nucleus, as it is diverted by a massive body like the Sun, but with a more important deviation value, knowing that the strong force K constant is about 10^{38} times greater than the gravitational constant;

- the effect of the deviation of light explains the phenomenon of diffraction. It is also the basis of the explanation of interference obtained by sending photons one by one through the slots of Young, the other element of the explanation being that a photon is composed of several lines of vortex spaced a half-wavelength.

- the entanglement between two photons is also due to the field of creatons moving at speeds much greater than that of light. The first photon, once polarized, modifies the creatons in its vicinity travelling to the second photon, and modifying its polarization. The speed at which the second photon entangled "learns" what polarization the first photon is endowed, is not infinite, but corresponds to that of the creatons. The use of the word 'learning' is not trivial. We are trying to work around the stunning immediacy of the second photon polarization ("spooky action at a distance" in the words of Einstein) saying that the first photon polarization measurement is random and therefore that no information is sent to the second photon. Actually, Man cannot use this physical phenomenon to transmit information. On the other hand, the first photon, whose polarization is measured, undoubtedly sends "information" to its

twin brother determining its polarization. In the proposed theory, the first photon affects the field of creatons which in turn affects the second photon.

The theory of the creatons, the vortex and quantified waves brings many concepts, interpretations or new ideas :

- on the simultaneity;
- on the nature of time.
- on the composition applied to vortex-light speeds classic and explains the relativistic Doppler effect.
- on the null result of the Michelson-Morley experiment;
- on the nature of a photon consisting of files of vortex-light;
- on the nature of a material particle composed of lines of vortex-material;
- on the nature of matter by explaining in detail from where the contraction of lengths comes and the dilation of the times from a queue of vortex-material;
- on the meaning of the Louis de Broglie wavelength which is the actual quantified wavelength;
- on the nature of the open which is the medium of propagation of light;
- on the concept of inertia (centrifugal force-inertia, force);
- on the shift in frequency of a photon subjected to a gravitational field;
- on the strong force explaining the diffraction of light. Gravitation would only be a residual force resulting from the sum of all strong forces due to all the atoms composing a body;
- on obtaining interference by emitting photons one by one through Young slits.
- on the thorough physical explanation of the two-photon entanglement.
- on the model of the atom;
- on the nature of the mass;
- on the nature of the load;
- on the nature of dark energy and the energy of the vacuum.

However, the strength of the theory of the creatons and the vortex is certainly its potential of unity and unification.

The unit provided by the theory is due to the fact that the creatons are the source of the fields, light and matter:

- FIELDS: field of standard creatons (gravitation), fields of creatons-spins (electromagnetism);
- LIGHT: files of vortex-light;
- MATERIAL: vortex-matter files.

The unification brought by the theory is due to the fact that:

- the field of creatons is at the origin of gravitation ("gravitational ether");
- the field of creatons is the medium of propagation of light called OMNIUM ("luminiferous ether");
- the creatons field is equivalent to the space-time of the Special Relativity and General Relativity;
- the energy of the vacuum and dark energy represent the energy of the field of creatons;
- the field of creatons is physically real "beyond the matter", the underlying level proposed by Einstein for a more detailed description, at a finer scale, the physical world with quantum mechanics gives a probabilistic or statistical description.