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THREE ELEMENTS THEORY
EXTRACT

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The three elements theory is a physic's unifying theory like the string theory.

Its basic elements, constitutive, are not « strings » but 3 elements : luminous point, bubble, space time.

The « luminous point » element is a set of points. These luminous points are in perpetual motion in space at the constant speed of $c0 = \sqrt{2}\ c$. The trajectories of these points coincide with space time geodetics, just like a mass in general relativity.
This element is the only one containing energy. At each luminous point is associated a strictly positive real value which represents its energy.

A bubble is a sphere or a torus in the space (there are the 2 forms). In a bubble a luminous point is moving in fact only in its surface (the surface of the of the bubble). A bubble does not hold energy, except when it contains a luminous point in its surface, in which case it forms a particle with this luminous point. A bubble without any luminous point is nothing else than a neutrino. This allows to explains immediatly the mystery of the neutrino, the only particle of standard model without any energy.

Space time is seen like an element. It is the General Relativity space-time. For understanding this theory, it is more appropriate to use an Euclidean representation rather than the classical Minkowski representation. But those two different mathematical visions of the same relativity physics theory are both correct.
In this different mathematical vision of Relativity space-time, the Riemannian manifold uses an Euclidean local metric ($ds^2 = dx^2 + dy^2 + dz^2 + c^2\ dt^2$) in place of the classical Minkowski local metric ($ds^2 = dx^2 + dy^2 + dz^2 - c^2\ dt^2$). One must insist on the fact that this is nothing more than a different mathematical vision of relativity. The General and Special Relativity are just described another way, in which, on one hand, for example the calculations of the perihelies will be more difficult, but, on the other hand, which allows to see interesting connections between actual physical theories such as Relativity and Quantum Mechanics, and connection between Newton's equation and General Relativity.

These three elements are in permanent interaction between each others.

Luminous points deforms space time : space rocks with a $+\pi/2$ angle in the vicinity of a luminous point. See illustration 2. The axis of this space time swing is imposed by the direction of luminous point space propagation (it's the spatial plane which is perpendicular to the speed direction of the point).

Conversely space time modifies the forms of the luminous point trajectories because those are the geodetic ones.

Bubbles modifies luminous point trajectories because a luminous point must travel only in the surface of a buble as soon as it comes into contact with it. Conversely a bubble is carried by the luminous points it contains (these luminous points follows the geodetic trajectories).

From this constitutive framework, one immediatly finds the fundamental principle of energy conservation. The principle of motion quantity conservation is found with calculations on space time deformation quantities generated by a moving particle.

The special relativity laws are found precisely and easily with calculations on deformation angles generated by a moving particle.
The general relativity laws are found qualitatively easily. The precise calculations of Newton gravitational equation is also found with some calculations. But in same cases, this calculation retrieves a correction of the Newton's law. In fact the exact shape of space inside space-time can be determined. It yields to a simple explanations for each dark matter mysteries. Noticeably, the calculated rotational speed of a star inside a galaxy is found 10% close to the experimental measurement. This is a strong validation of the three elements theory.

Electromagnetism is immediatly found qualitatively, complicated to demonstrated rigourously. Each element of Electromagnetism correspond to a curvilinear derivation degree of a space time curve. It's in fact the Taylor serie decomposition of the luminous point trajectory. As an example, an electron, because of the torsion of its luminous point trajectories as we will see, holds an electrical charge. (Let's remind that the torsion of a curve corresponds to

the third curvilinear derivation degree of a point in space). Illustration 4 represents the correspondences between these various derivation degrees and their corresponding values in Maxwell theory.

This theory is in accordance with the general principles of standard model. In particular the general scenario of weak interaction is found. There is an agreement, qualitatively, with Coppenhague's laws of quantum mechanics. Within this framework the polarization equation is precisely found with calculations.

Finally, some cosmological results are reached (plane Euclidean space time geometry, galaxies flying apart from each other).
This theory is giving very direct and simple explanations to some current physics mysterious : EPR paradox, neutrino exception, missing masses, gravitational waves, twin brothers paradox among others.
EPR paradox is explained further in this article. The neutrino exception was seen previously. Missing masses are explained with a modification of the Newton law in case of high density of matter and of short distances between masses.
Gravitational waves exists since long ago according to three elements theory and we can see them every days ! These waves are nothing else than electromagnetic fields, noticeably those fields generated by each moving particle.
In facts in this theory an electrostatic or magnetic field is the propagation of some kind of space time deformation (respectively, « curve of a torsion of torsion » deformation, or 6^{th} curvilinear derivation degree, and « torsion of torsion of torsion » or 7^{th} curvilinear derivation degree).

Finally, the three elements theory is probably helping in the resolution of the issue untitled « Yang Mill theory and mass particularity » (one of the 7 millenium mathematical issues).

The basic ideas of this theory are the 2 following ideas.

The first fundamental idea at the base of this theory allows to explains wave-corpuscle duality.
In this theory the quantum mechanics duality is explained by a composed nature of matter. A particle is a « luminous point » (the energy of an electron gathered in a point of space, moving at the speed $\sqrt{2}$ c), in a « bubble » (imagine a water bubble, spheric or torus-like). Spherical bubbles makes boson particles, torus-like bubbles makes fermion particles.

Particle's quantum wave of quantum mechanics is obtained by a space time deformation generated by the particle's luminous point. That's because in the three elements theory, each luminous point is generating around him a space time deformation which is like a unique wave being propagated at the speed of $c0 = \sqrt{2}$ c. This unique wave is on a large scale a continuation of waves because the luminous point must follows spatial cyclic trajectories when moving on the bubble surface. This continuation of waves corresponds exactly to the wave function of quantum mechanics.

With this decription one immediatly obtains the uncertainty principle of Eisenberg.
It is not possible to locate experimentally a particle without modifying the wave its generates, because this experimental localization uses an object, the detector, which locates this particle when interacting with it, hence with the waves it generates.

This interaction will modify the particle's wave because the detector's wave will be superimposed to the particle's wave. It results an uncertainty on the wave's frequency hence an uncertainty on the energy of the measured particle.

Conversely, one may remotely measured this particle's wave, if the distance between the detector and the particle is long enough, in order to avoid the preceding phenomenon of detector's « pollution ». But in this case since the detector is far away from the particle, we get an uncertainty on the localization.

The second basic idea of this theory is generalization of the first principle of general relativity.
Let's remind that this principle expresses that a gravitational force is generated by a space time deformation.
This deformation principle is generalized to the 4 fundamental forces. It's not only gravitational force but now each physical force which is now generated by a space time deformation. It's the deformation shape which determine the type of force which is associated. As an example, electrostatic force is generated by a space time deformation with « curve of torsion of torsion » ; which means that this space propagated deformation contains a 6^{th} not null degree of

derivation. In other words this electrostatic force is provoqued by the space time deformation generated by a luminous point trajectory with a not null torsion curve, that is a helix like trajectory overall curved (The 4^{th} curvilinear derivation degree is not null).

In the same way gravitational force is caused by a simple space time deformation without torsion. This deformation is generated itself by a luminous point moving in a brownian movement « localized ». That is to say that roughly the luminous point is moving in every directions but remains confined inside the particle at the origin of this deformation.

Therefore mass corresponds to the energy of such a set of luminous points of this last example. In the same way the electrical charge corresponds to some quantity of space time deformation with torsion curve.

Let's remark by the way that the mathematical model of general relativity was yet containing this possibility of space time deformation with not null torsion or not null torsion curve in it. But curiously this is not used in relativity. There was no sense for this deformation with torsion or torsion curve in general relativity. This might be seen as a bizarrery of relativity.

Let's remark also that the three elements theory also generalize, this time indirectly, the second principle of general relativity. (This second principle explains that these space time deformations themselves are caused by the presence of mass, therefore of energy). Therefore each interaction, each force between particles is transmitted via a propagated space-time deformation from one to another.

The three elements theory connects together potential energy and kinetic energy into a unifyied view. In this vision the two energies are perfectly symmetrical one from another and the classic equation Fp = grad(Ep) for potential energy exists also in kinetic version and becomes Fi = grad(Ec). This symmetry is visible graphically : space time generated deformations are in perfect symmetry according to a symmetry which exchanges the axis of times with a single space axis (we uses for studying this phenomenon a plane space time drawing hence a 2 dimension representation in which only one among the 3 spatial dimensions is showned ; this is enough for representing this phenomenon).

In the same way this theory unifies the 2 special relativity phenomenons of length contraction and time dilatation. This 2 phenomenons are represented in a symmetrical way : they are symmetrical one from the other, because space time generated deformations during those phenomenons are symmetrical one from another. This symmetry is the same as previously for energy : permutation of time and spatial axis.

Mathematical bases necessary to formalize this theory are quite simple. Locally space time is modelled by an Euclidean space time with the 4 classical dimensions, plunged in a larger Euclidean space with 7 dimensions in it. This number of 7 is explained further in this article.

The only mathematical difficulty consists in superposition of 2 Riemannian geometries, or 2 « metrics ». The first one is locally and globally Euclidean. In this metric each geodetic is a straigth line. It's the metric of macroscopic view.
The 2^{nd} metric is the metric of microscopic view. It is not Euclidean any more, geodetics are no longer lines but helixes. The radius of those helixes is roughly the electron radius.

Viewed from a macroscopic scale, this metric becomes our first Euclidean metric, because each helix like geodetics becomes its own axis. That's because we are growing from microscopic view to macroscopic view. This is the similarity between three elements theory and string theory.

Standard model is found by three elements theory. Each particle corresponds to a particular shape of luminous point trajectory in a particular bubble. Refer to illustration 4 for more information.

Bosons are composed of spherical bubbles, that gives them their individualistic behaviour. The luminous points they contains are allways moving in space with helix like trajectories. This is because of space time overall torsion. This torsion is itself generated by the presence of photons. Their speed is equal to $c = c0/\sqrt{2}$ because this is the axial speed of a luminous point in a « balanced » helix like trajectory. (« Balanced » means that overall speed of the luminous

point in the helix is equal to its speed projected to the plane which is perpendicular to the helix's axis). Hence we obtains for our photon speed : $c0/\sqrt{2} = \sqrt{2}\, c / \sqrt{2} = c$. Because of the speed c, bosons have a null mass (in the mcroscopic meric).

Fermions are made with torus-like bubbles, that gives them their gregarious behaviour. This implies also that they cannot move at the speed of c, but only at a speed strictly less than c. It results that they have a non null mass. Illustration 3 represents a photon, a low quark, a high quark, a proton, and a neutron.

EPR paradox of quantum mechanics is explained by the existence of some space time « tunnel » relying the two particles. It's a narrow line in space which relies one particle to the other. In this tunnel the space time metric is very different from global metric, the 2 particles are very closed together, there is big length contraction in this tunnel metric. The 2 particles are interacting with each other only through this narrow tunnel. (This could lead to a validation experiment).

In its actual state, the predictions of this theory are few. There are no foreseen particles.
However, we calculate a total number of dimensions equal to 7. It is not added dimensions in our physical space but which are not perceived by our senses, like in string theory. It's the number of dimensions for the surrounding space which we do not perceive but in which is included our 4 dimensions space time in which we are living.

Another prediction is dealing with the exact context in which appears length contraction and time dilatation of special relativity. Like exposed in illustration 1, they appears only when passing from a privileged inertial frame to another. Conversely, between inertial frame which are not privileged, this theory is predicting completely different values for length contraction and time dilatation. In facts those time and length modifications depends only on space line shape inside space-time. Only privileged inertial frame can express those modifications since they are the only one to be tangent to local space and local time axis. One will notice that indeed a non privileged inertial frame does not have a concrete physical sence since one will never be able to place an observer or a detector in this frame.

The spectacular resolution of twin brothers paradox is in this topic very helfull. This paradox is resolved because it is the masses hence energy which determines the shape of space inside space time.
Therefore the situation of the traveler brother in this paradox is completely asymmetric with respect to the one who stays on earth. In fact the mass of the space ship is negligted faced to the earth's mass or the galaxy's mass in which the other brother stays. The equation of time dilatation is then calculated in each frame, and yields identical results but with totally different calculation ways.

Let's remark that the mass do not appears in general relativity in order to explains the brothers paradox. This is a strange thing which appears now flagrant with the help of three element theory.

Today the validation of the three elements theory has been done with the dark matter explanation. Each dark matter mystery is solved. The global shapes of the galaxy speed profiles are found very close to experimental ones. The calculated value of the rotational speed of the stars of NGC 3310 and NGC 1068 are respectively 10% and 64% close to experimental measurements. Galaxy speeds are explained with a greater value of the gravitational constant outside the galaxy.

Other possible experiments for validation of this theory are numberous. The list of these possible experiments is probably not definitive.

Today, after the dark matter explanation, the most promising experiment is the measurement of the electromagnetic fields near a twisted optical fibre transporting a powerful light beam. In this experiment one puts forward a very singular characteristic of the three elements theory. It is about the particular trajectory shape of the photon's luminous point, and origin of the electromagnetic fields according to this theory.

As we saw this luminous point trajectory of the photon should be helix like, and the electromagnetic fields should come from the space time deformations caused by the trajectory of a luminous point holding 5 then 7 non-null curvilinear degrees of derivation ("torsion of torsion" or "curve of torsion of torsion"). This experiment is interesting because it would very strongly validate, if it were successful, the validity of this theory. Indeed it makes it possible to

test a very singular and basic characteristic of this theory. Lastly, another possible experiment very simple to understand corresponds to the famous relation $c0 = \sqrt{2}\ c$.

This experiment simply consists in showing that the light can move at a speed strictly higher than c, but never beyond $\sqrt{2}\ c$. It seems that today a part of this experiment has been realized.

The first steps of this theory were worked in 1984. But its development truly started in 1998. It is difficult and slowed down today for a lack of means : 1 part-time person and no money.

It remains still much to develop and calculate or simulate to give to this theory a sufficient theoretical state (without speaking about experimental validations). One will note mainly as a development to come, a precise calculation of momentum conservation. The calculation or the simulation of the Maxwell's equations, then quantum electrodynamics remains to be carried out.

It should be noted that a qualitative explanation exists to explain the phenomena of paramagnetism and diamagnetism. Finally, the Planck's equation $<< E = h\ \gamma >>$ still remains to be calculated, even if it seems logical at first glance.

This unifying physical theory is in development phase. However it seems very promising from its theoretical results. From a probabilistic point of view, it seems difficult to explain its theoretical conformities by the simple chance, more prosaically a simple "good luck" when choicing its basing bricks.

The most astonishing is today the absence of proven nonconformity or even apparent nonconformity of this theory with any physics field.

Another version of this theory, generalizing the first one, is possible. In this version not only 4 but 7 dimensions are exploited and explained.
Thus in this version one gives an explanation for the 3 additional dimensions. The current postulates of this first theory are only consequences of more fundamental postulates of this second theory.
Will we be able to come through these 2 versions for this unifying theory ? Can one hope for one day to really understand matter ?

ILLUSTRATION 1
SPACE TIME DEFORMATION
GENERATED BY A MOVING PARTICLE

A) Space time deformation generated by a moving particle

In the three elements theory as in general relativity the space geodetics marry the form of the involved masses.

In this theory this property results directly from the postulate of space time deformation by a luminous point, and owing to the fact that a particle contains luminous points.

Thus let us suppose a uniform distribution of masses. One obtains consequently space geodetics all rectilinear without any deformation. An inertial frame then is chosen R (O x y z ct), such as Ox Oy and Oz axis are all parallel with space, and such as O is motionless (i.e. space time trajectory of the point O is permanently normal with space thus parallel with time axis).

Let us suppose a particle P with a non-null mass moving compared to R at the speed of <<v>> along the Ox axis. According to the postulates of three elements theory a particle contains luminous points which deform space time. Thus overall the particle deforms also space time.

The figure which follows represents this global deformation. In this figure the trajectory of the particle is not indicated but it is moving at the v speed from negative to positive x values, along the x space axis. In the figure <<a>> is equal to <<α>>.

Near this particle the local tangents with space are inclined of the following angle :

$$\alpha = \arcsin(v/c) \qquad \textbf{(A)}$$

This results from the postulates after calculations. Those calculations are not easy to do and still remains to do.

Conversely, for space time points sufficiently far away from the particle, these tangents are not modified and remained parallel with Ox axis.

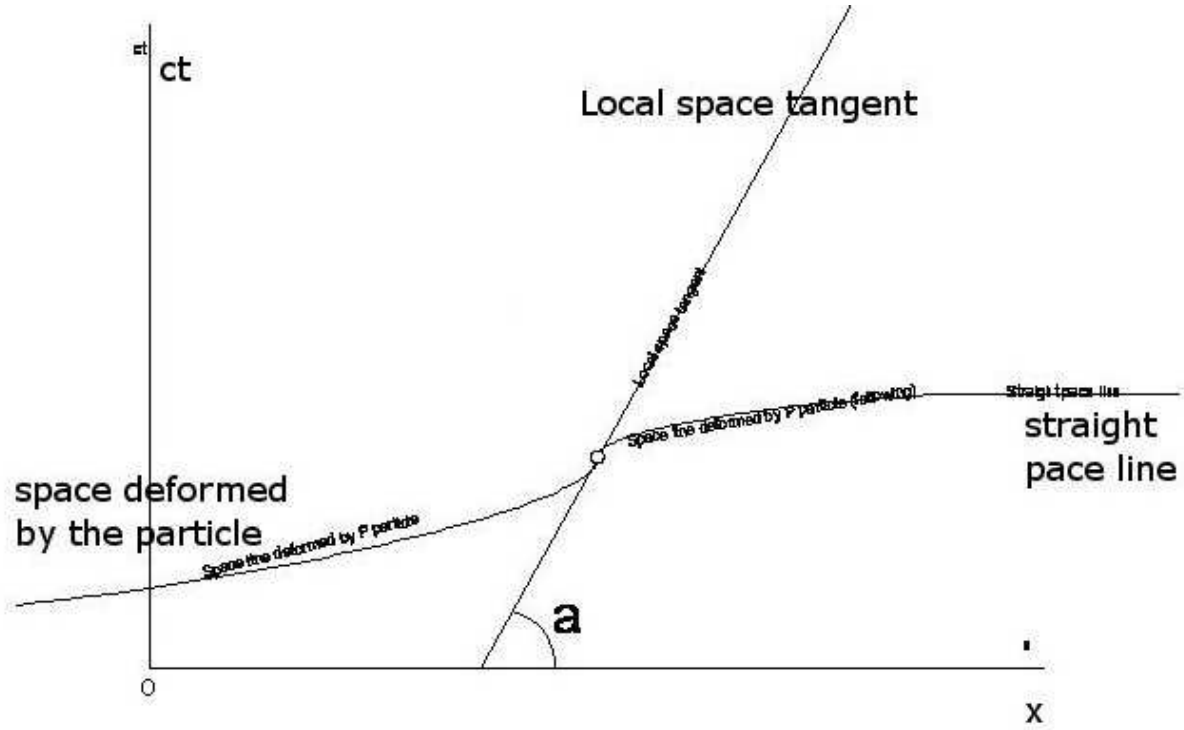


Figure 1 : Deformation of space time by a moving particle

This swing is carried out in (Ox ct) plan and around the Oyz axis (here in a 4 dimensional space time the axis is a plane).

B) Lorentz transformation

Temporal dilation and contraction lengths of special relativity results from the preceding space time deformation. Indeed it is easy to prove that the dilation coefficient and contraction coefficient are $\cos(\alpha)$, which is also, applying formula (A), equal to $\sqrt{1 - v^2/c^2}$ as in relativity.

On the other hand, the three elements theory is not in agreement with special relativity about the inertial frames. In special relativity in each inertial frame the speed of the light is constant equal to c. At the contrary in three elements theory this assumption is false: the speed of the light is constant equal to C only in some privileged inertial frames. These frames R (O x y z ct) are such as the space time trajectory of the point O is always parallel with Oct, the time axis. (That is not inevitably the case of any inertial frame: the point O generally has a rectilinear trajectory but not parallel with Oct ; because it generally holds a constant but non-null space speed compared to the masses present locally). In other words, in these privileged frames there is one (or several) particle(s) with non-null mass(es) with which the point O coincides permanently. Indeed, as in general relativity, space marries the form of the involved masses. That's why this mass « stucked to O point» leads to privileged frame, and converselay privileged frame means this presence of such « stucked to O point» masses.

This difference about the privileged frames is a constraint that the three elements theory does not have, compared to relativity. It makes it possible this theory to use a metric tensor which is real Euclidean ($ds^2 = dx^2 + dy^2 + dz^2 + c^2\,dt^2$), therefore perfectly physically exploitable.

Let us recall that the Nimkovski tensor for general relativity is locally square anisotropic thus not very exploitable physically: $ds^2 = dx^2 + dy^2 + dz^2 - c^2\,dt^2$. Thus on the preceding figure if one supposes the particle P attached permanently to some point A, then the inertial frame R' (A x' y' z' ct') is privileged for the three elements theory.

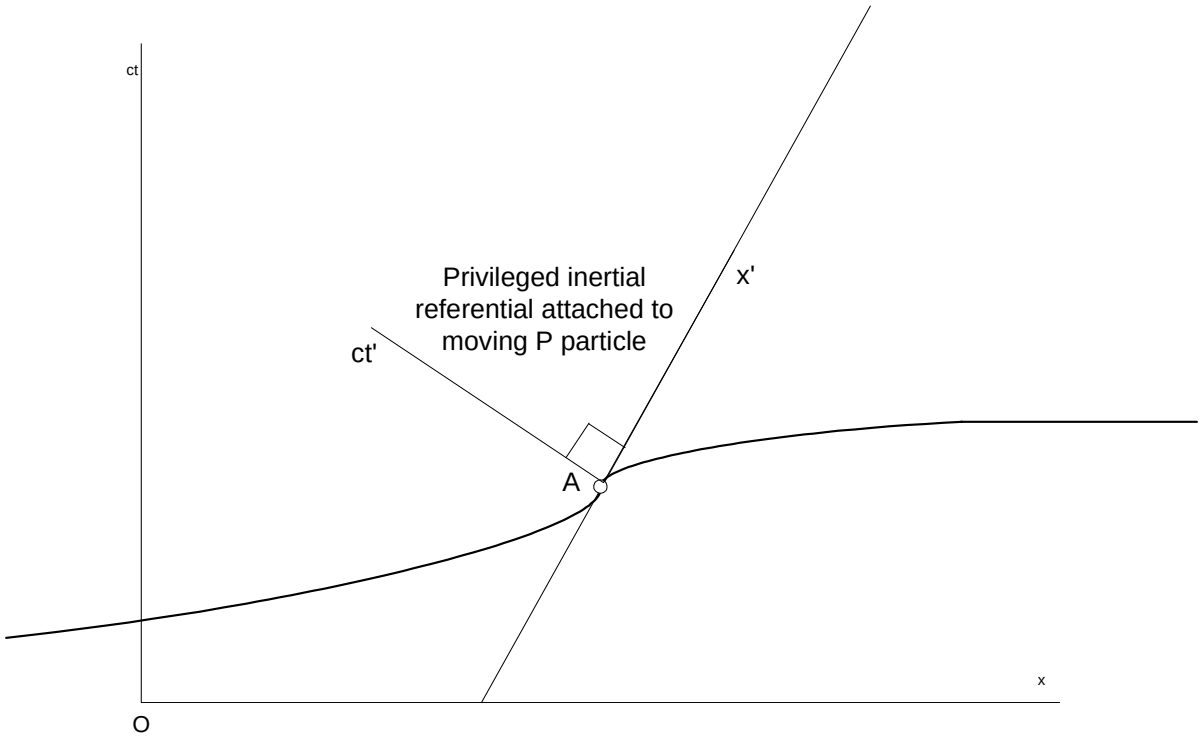


Figure 2 : Privileged inertial frame attached to P particle

Indeed, it is inertial because the particle P, therefore point A, is moving at the constant speed v in inertial frame R. Finally, it is privileged because point A coincides permanently with the particle P which is of non-null mass. Because R (O x y z ct) and R' (A x' y' z' ct') are privileged inertial frames, then the assumptions of definition of Lorentz transformation apply to these frames in the three elements theory.

As a conclusion, let us recall which are these assumptions and requirements for the Lorentz transformation in resctricted relativity for inertial frames, and in three elements theory for inertial privileged frames only :

- the speed of the light is constant equal to c in R and R'. In the three elements theory this is obtained thanks to the fact that the luminous point trajectory is not rectilinear as in special relativity, but curve. These trajectories undergo, as the space itself, a α angle's rotation in the vicinity of the particle P.

- the situations of R and R' are reversibles : in the three elements theory, the inversion of roles of R and R' does not change the mode of passage from one to the other. Indeed, locally with R, space has also rocked of with the opposite angle $-\alpha$ compared to R'.

- Isotropy of space properties. This is the case in three elements theory since the postulates describes isotropic mechanisms.

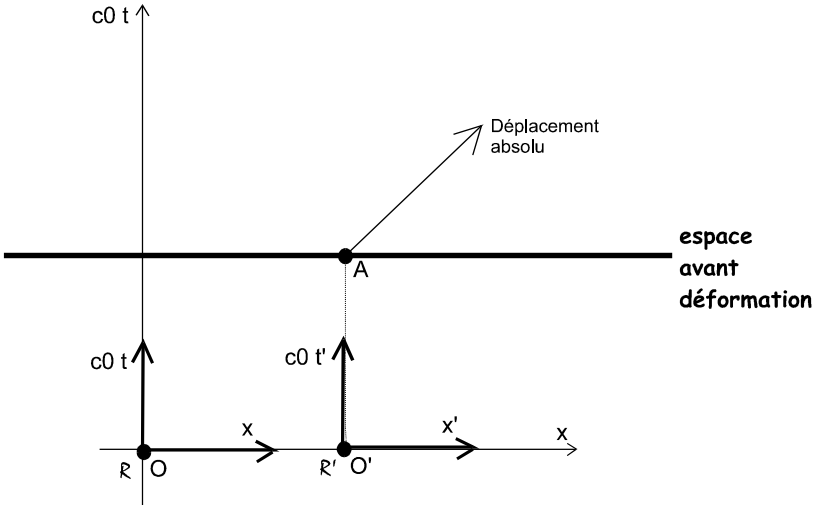
- Identity of the laws of physics in R and R'. Same explanation as above for three elements theory.

---------- END OF ILLUSTRATION 1 ----------

ILLUSTRATION 2
INTERACTION LUMINOUS POINT → SPACE TIME

The figure below represents the interaction luminous point → space time, locally. On this figure is represented only one line of space, parallel with OX axis, and the temporal Oct axis. Indeed, the 2 other space dimensions, Oy and Oy, are not necessary for the comprehension of the phenomenon.

One initially supposes the existence of a luminous point passing by the point O and moving along OX space axis. Near by the luminous point moving, therefore near by the point O, space time rocks with an angle of + $\pi/2$. It is the whole <<Oct time axis and Ox spatial axis >> locally, therefore the whole local space time, which rocked, compared to the external global space time.
Along Oy and Oz space time axis, the space did not move. This is why the representation of these 2 axis on the figure is not necessary. Basically the interaction luminous point→ space time consists only of this space time, local swing.



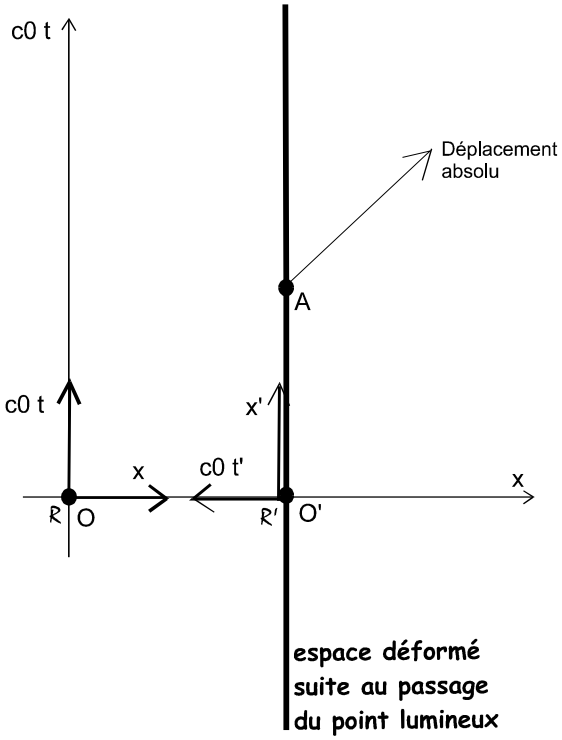


Figure 3 : Local deformation of space time by a luminous point

This basic deformation is difficult to understand and imagine in our physical world. The space time locally underwent a rotation of +90° around the y/z plan (around the y/z "axis"). Of course this space time swing is not global but only local !
As soon as one moves away a little from the luminous point, initial space remains practically unchanged. Consequently, overall space undergoes a deformation in form of small wave or small "S" as represented below.

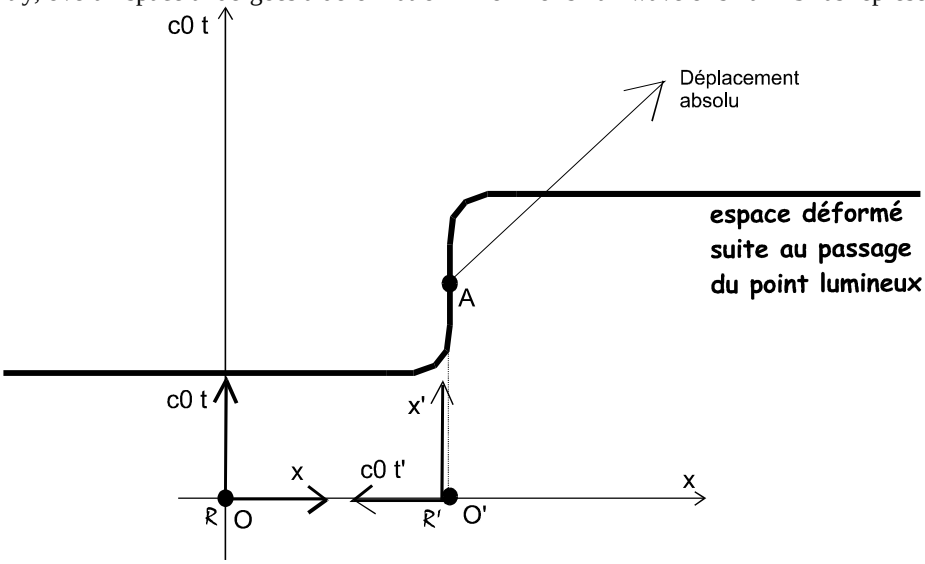


Figure 4 : Glotal deformation of space time by a luminous point

The curve c0 t = f(x) indicated on this figure represents the points of the space time which holds the same temporal co-ordinate, following the deformation. It is the line of space for this moment. Now let us represent all the lines of

space deformed by the luminous point trajectory L crossing space time. On the figure below, space 1 is definite by t=t1, space 2 by t = t2 = t1 + dt, space 3 by t3 = t1 + 2dt, etc... dt being a strictly positive temporal low value.

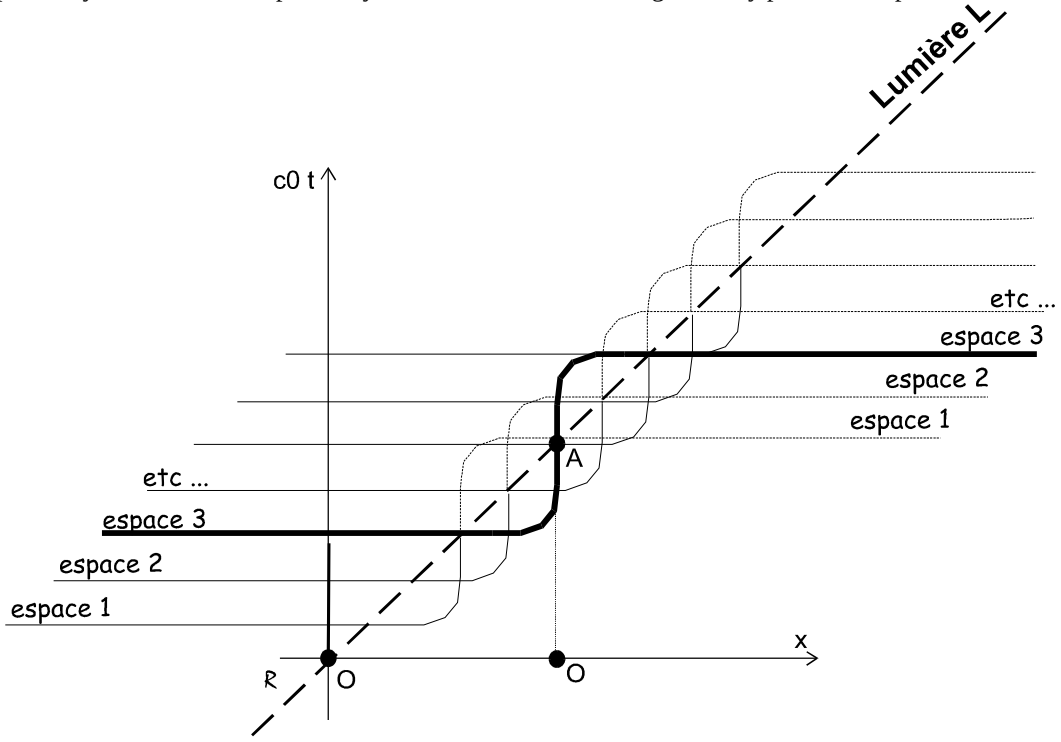


Figure 5 : Global deformation of space time by a luminous point: complete figure

To be complete it is now necessary to represent the propagation of this deformation in space time. Unfortunately it is not possible to represent it in 4 dimensions but only in 3 dimensions (!). The figure below represents this propagation in dimensions (O x y ct).

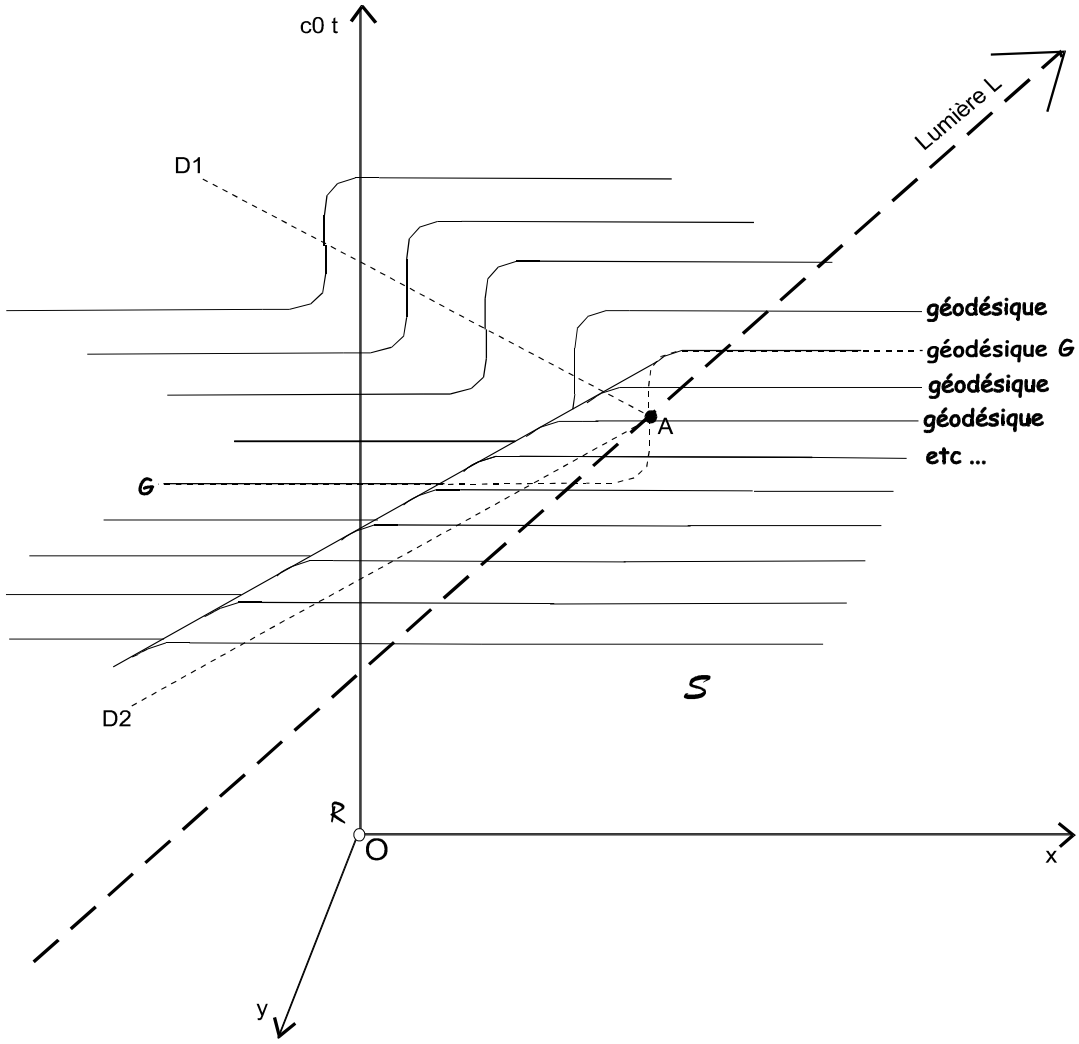


Figure 6 : Global deformation of the space time by a luminous point, propagated: appearance in 3 dimensions

---------- END OF ILLUSTRATION 2 ----------

ILLUSTRATION 3
STANDARD MODEL

A neutrino is a bubble.

A photon is composed by a luminous point in circular trajectory on the surface of a spherical bubble.

It is the presence of photons in space time which will generate torsion of this space time. Indeed, let us imagine a motionless photon in space. In space only, the luminous point trajectory is a circle. In space time, it thus becomes a helix. However the theory of the three elements is made in such a way that luminous points trajectories in space time determine space time metric. That comes mainly owing to the fact that a luminous point deforms space time and that this deformation is propagated in all the directions.
Consequently these space time helix like trajectories will print a torsion in space time.

Then this torsion of global space-time goes in return to force these same photons to move in space according to this initial torsion. It results from this that the photons move systematically in space according to helix like trajectories.

However, the photon's speed is the overall, or mean speed of the luminous point constituting of this photon. This time, one is interested in metric global or let's say « macroscopic ». This global or overall speed is the speed of the luminous point, projected on its helix axis. One thus obtains as the global speed: $c0 / \sqrt{2}$ (speed c0 projected on the helix's axis), i.e. the wellknown value of c.

The figure below represents the space trajectory of a luminous point associated to a photon.

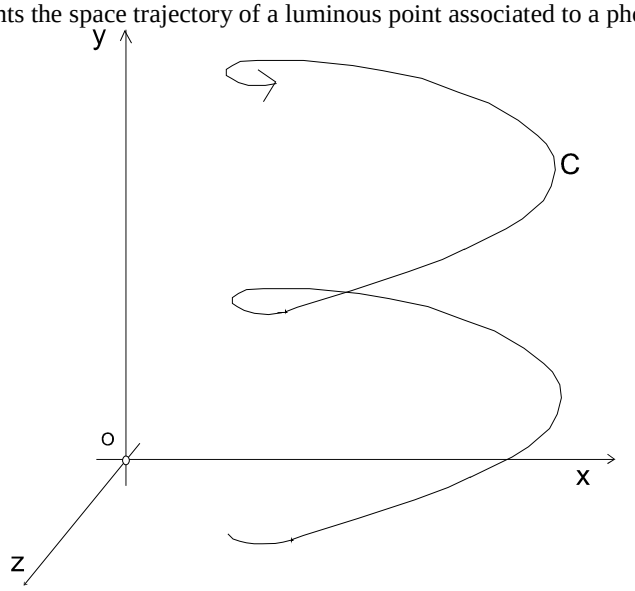


Figure 7 : Photon's luminous point trajectory in space

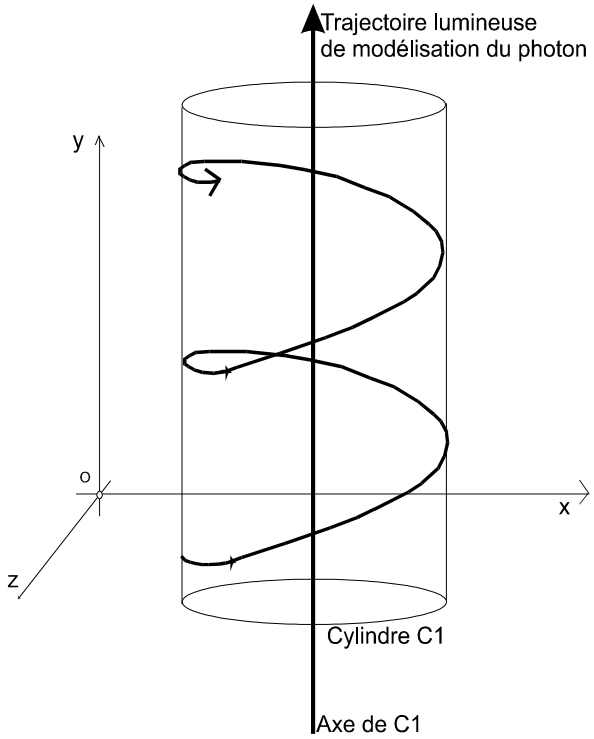


Figure 8 : C1 cylinder

On the figure above, the <<trajectoire lumineuse de modélisation du photon>> is nothing else than the photon's trajectory "considered from far away", i.e. considered in global metric, the macroscopic one. Its speed is the luminous point speed after projection on the helix's axis, i.e. $\sqrt{2}\ c / \sqrt{2} = c$, because the helix is a balanced helix. Here "balanced" means that the speed of the luminous point projected on axis Oy is equal, in amplitude, with the speed projected on the OxOz plan.

An electron is a torus-like bubble crossed by a single luminous point according to the trajectory represented below.

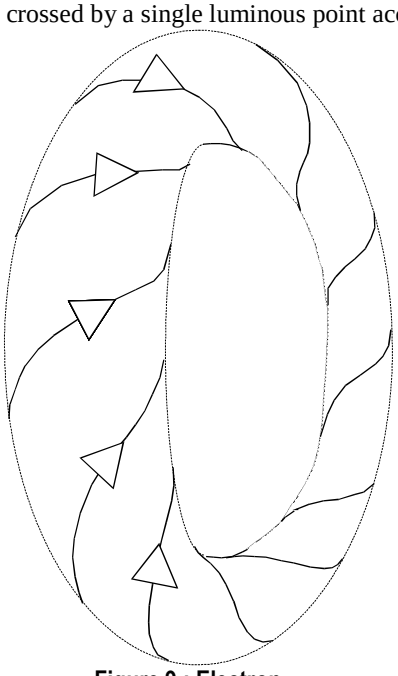


Figure 9 : Electron

A low quark has the same form qualitatively as an electron.

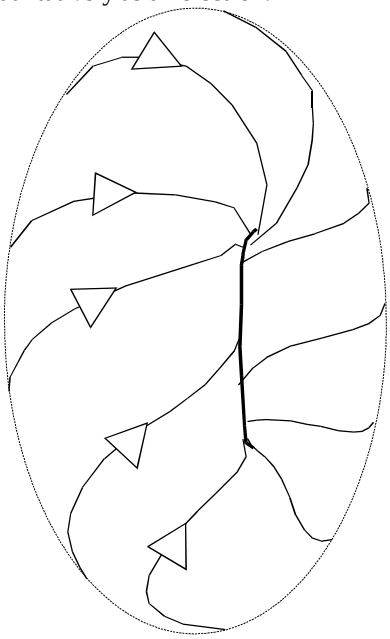


Figure 10 : Quark bas

Radius of the principal circle ≈ radius of the orbital circle

A high quark has the same form qualitatively as an electron except that torsion (helicity) is in the opposite direction.

Quantitatively its size is roughly the same as the electron's size. But the energy of its luminous point is much more important than the electron's energy, in the report/ratio of the masses (approximately 2000).

Radius of the principal circle = 2 X radius of the orbital circle

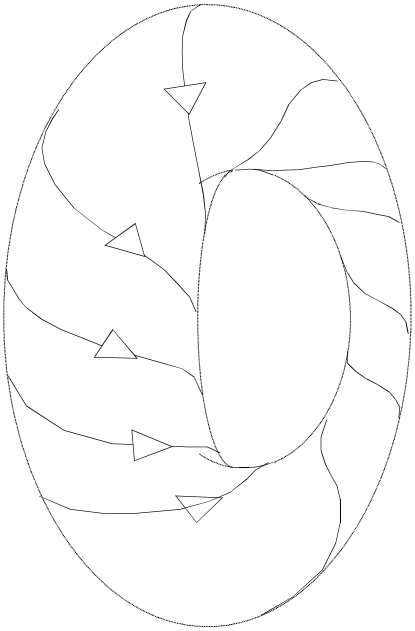


Figure 11 : High quark

The respective position of the quarks in a proton is represented below. This figure is a cross section on the Oxy plan.

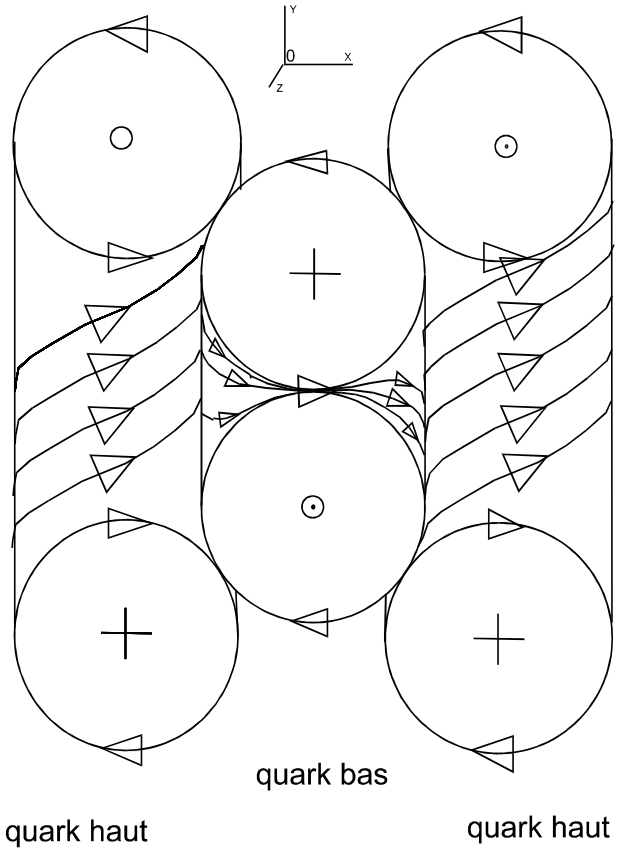


Figure 12 : Proton (cross section)

The respective position of the quarks in a neutron is presented figure below. It always acts as a cross section on the Oxy plan.

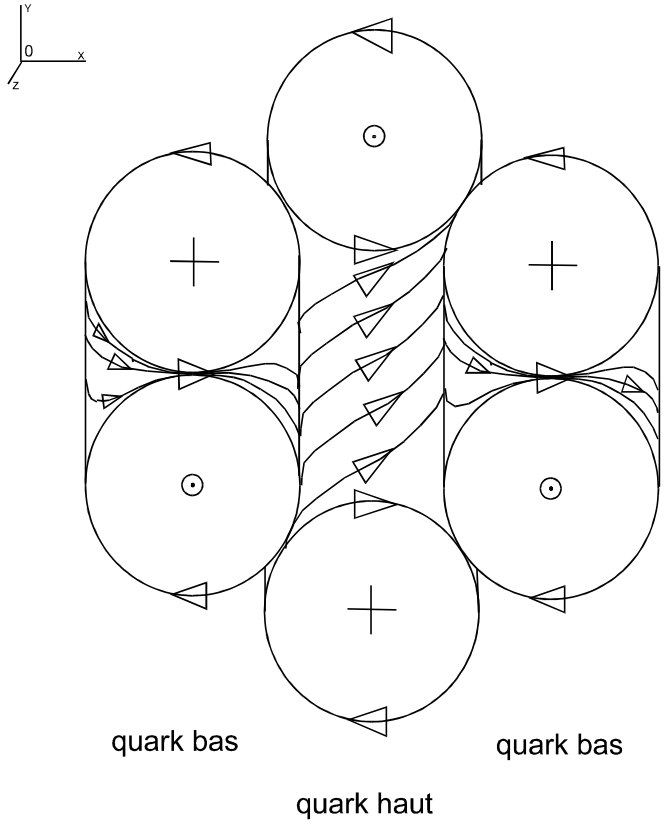


Figure 13 : Neutron (cross section)

---------- END OF ILLUSTRATION 3 ----------

ILLUSTRATION 4
ELECTROMAGNETISM

Basing electromagnétism's objects

GENERATING OBJECT	USED DIMENSIONS *	GENERATED OBJECT	USED DIMENSIONS **
Energy	0 : présence in space	Gravitational field	2 : space time curve
Charge	4 : « curve of torsion »	Electrostatic field	6 : « curve of torsion of torsion »
Electrical current	5 : « torsion of torsion »	Magnétic field	7 : « torsion of torsion of torsion »

* : Number of used dimensions in space time, to express the considered electromagnetic object. It is also the higher curvilinear derivation degree not null in the luminous point trajectories of the considered object.

** : Number of used dimensions to express the *propagation* of the space time deformation generated by the considered object.

---------- END OF ILLUSTRATION 4 ----------