

A Model that leads to new knowledge

The structure of Matter

T/Q = Theorem-Question E = Explanation O = Observation C = Consideration R = Repeat of M1	<h2>How the structure of Matter determines the drive of energy and of the forces!</h2>
--	--

This second Module is an invitation to study the Model. It shows that Physics needs a totally different approach than the existing purely Newtonian one. That mathematical way of approaching reality only allows to study **the behavior of Matter**, its *exterior*.

The Model, with its heuristic and post-Newtonian approach, wants to pervade the *inside* of Matter. It wants to find out why Matter does what it does. **Without such a pioneering approach, we will never comprehend the secrets of our existence.**

In the first Module we learned that besides real dimensions imaginary ones exist. We recognize one of them as the course of time, an evolving physical reality. By adding courses of space, it is shown in this second Module how the assembly, the functionality and the structure of Matter can be explained.

R M1	<p>In this context 'imaginary' has nothing to do with imagination, it's a mathematical way of description.</p> <p>Two kinds of dimensions exist: imaginary ones and real ones.</p>	<p>* Imaginary dimensions have an irreversible course. The course of time is an example of this. Beside the course of time several courses of space exist. Phenomenologically a course of space tends to irresistibly drag forth a point in space, it's an irreversible drive.</p> <p>* Beside imaginary dimensions real dimensions exist which are reversible. In such a dimension a point can go back and forth. The spatial dimensions, as we perceive them in our Universe, have characteristics that come very close to these original spatial dimensions. These real spatial dimensions are not directly observable and together with the real dimension of time they constitute an absolute space-time.</p>
T	<p>An acausal utmost potency exists: this is Non-Matter</p>	<p>Every building block, every component of the Universe has to come from somewhere. According to the Model they originate from an acausal utmost potency. Such an utmost potency has no cause and no effect. In other words, it has always existed and it shall always exist. This potency is simply called Non-Matter.</p>
E	<p>Emmy Noether: the law of conservation of energy is indivisibly connected to the continuity of the course of time.</p> <p>Non-Matter is situated outside the Universe.</p>	<p>There are reasonable grounds to assume that Non-Matter exists. When Matter passes the horizon of a black hole, the course of time slows down and eventually stops.</p> <p>For this reason, we can say that when going beyond that horizon, the course of time is discontinued. From there on the law of conservation of energy is no longer valid. The energy that dives into the black hole leaves the Universe.</p> <p>At the horizon of the black hole space vanishes as well. The density of energy approaches infinity. We can imagine that Matter at the horizon of the black hole transforms into something else, into its alter ego: Non-Matter that is situated outside the Universe.</p>

A Model that leads to **new knowledge**

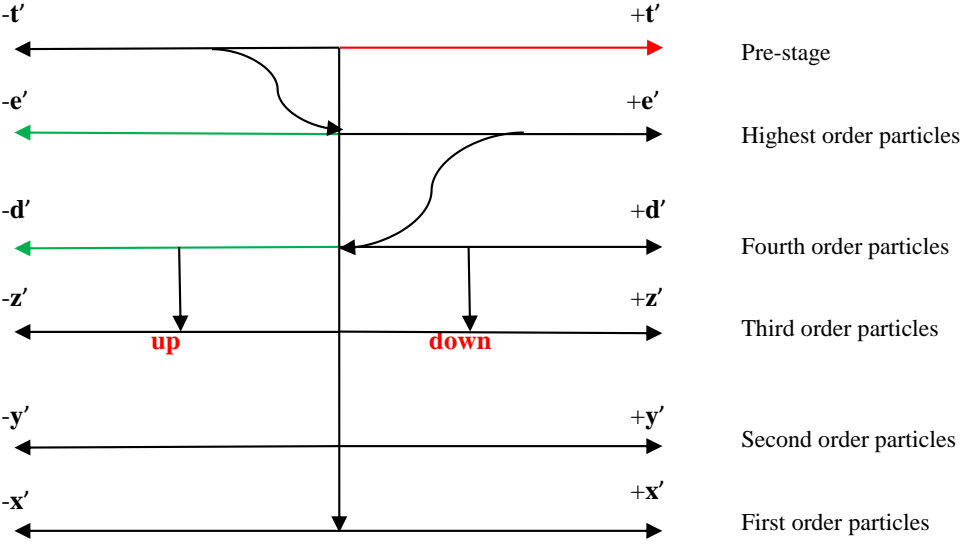
<p>O</p>	<p>Non-Matter consists of Core-dimensions.</p> <p>Properties outside Here and Now are written with small capitals.</p>	<p>By means of the aforementioned twofold nature of dimensions, the Model provides a dimensional foundation to Non-Matter. As stated in the first Module, with that foundation the Model finds the origin of all the building blocks of the Universe.</p> <p>‘Something’ triggered the acausal condition of Non-Matter to become causal. This could only happen through the creation of a first course, the course of time. That course is coming from a higher and thus composite order of dimensions; from here on we call them Core-dimensions.</p> <p>Core-dimensions united the real and the imaginary dimensions which then where predimensions. In terms of dimensions and of effect to be as neutral as possible, a Core-dimension exists of three kinds of predimensions: one real predimension and two opposite imaginary courses. A real predimension coming from a certain Core-dimension is called complementary to the courses that come from the same Core-dimension.</p> <p>The courses inside a Core-dimension did not develop. This way they implied an utmost POTENCY.</p>
<p>T</p>	<p>Non-Matter is an acausal and utmost POTENCY that exists of SIMULTANEITY and of NON-LOCALITY.</p>	<p>Due to the fact that Core-dimensions unite the two kinds of secondary and inactive of predimensions, Non Matter has immaterial properties that are situated outside Here and Now well-known by us in Physics.</p> <p>In its origin Non-Matter has two immaterial properties which thus are intangible:</p> <ul style="list-style-type: none"> ✓ NON-LOCALITY: known from the Quantum; the possibility of being independent of space, ✓ SIMULTANEITY: the mysterious possibility of being independent of time.
<p>O</p>	<p>Without a course of time Non-Matter is a state of being.</p>	<p>The onset of the course of time initiates the emergence of the material Universe from the non-material Non-Matter: the kick off of the becoming.</p> <p>At the uncording of the first Core-dimension, two courses were released: one of them by definition is the course of time that gives rise to causality.</p> <p>The other course is the opposite of the course of time that becomes part of Matter. We will see this further on in the scenario of descent.</p>

A Model that leads to **new knowledge**

Th	<p>Uncording¹ Core-dimensions generate Core-spaces.</p> <p>The two Core-spaces determine the structure of Matter and bring about every building block of the Universe.</p>	<p>During the process of formation the Core-dimensions uncord into their constituent predimensions. As mentioned, Core-dimensions consist of three predimensions: one real predimension combined with two opposite imaginary courses.</p> <p>The uncorded predimensions regroup into two Core-spaces.</p> <p>The course of time regroups with a set of real spatial predimensions to form the first Core-space.</p> <p>The real predimension of time together regroups with the courses of space to form the second Core-space.</p> <p>It appears that the first Core-space is the source of the macroscopic properties of Matter. The second Core-space is the source of the microscopic properties of Matter.</p>
E	<p>The existence of two Core-Spaces is confirmed by the existence of the two uncertainty relations.</p>	<p>The first Core-space with the real spatial predimensions together with the course of time phenomenologically comes close to our space-time. The merely unknown second Core-space with the real predimension of time together with the courses of space contains the energy of Matter.</p> <p>Matter always is a combination of properties of the two Core-spaces. When we are certain of the properties of Matter coming from one Core-space than we know nothing about the properties coming from the second Core-space and vice versa.</p> <p>This is the cause of the existence of the uncertainty relations: certainty about the energy (second Core-space) of a particle gives uncertainty about its course of time (first Core-space), certainty about its impulse (second Core-space) gives uncertainty about its place (first Core-space).</p>
Q	<p>How many Core-dimensions where there initially?</p>	<p>All components and properties of the Universe and of Matter can be reconstituted from the predimensions that come from 6 Core-dimensions. Together they constituted at least a part of Non-Matter.</p>
O	<p>Importance of the order of the uncording.</p>	<p>The Core-dimensions uncorded in a certain order. That order determines the role that they will play in the emergence of the properties of Matter.</p>

¹ Here we use the word uncording instead of the word decomposing because, due to Non-Locality and Simultaneity, a Core-dimension is richer than the sum of its constituents.

A Model that leads to new knowledge

E	<p>Look at the scenario of descent below to understand the sequence of the uncording of the Core-dimensions and the absorption of certain courses.</p> <p>The uncording and the origin of the distinction between the Core-dimensions.</p>	<p>The first Core-dimension that uncorded is called T because it necessarily is that of time. Only one course of time $+t'$ could remain so the opposite arrow of the course of time $-t'$ was absorbed from the highest order of particles on: the fifth order. Through this absorption total causality emerged. Notice the red color of $+t'$ that will also be used in the configuration of the particles.</p> <p>Every particle, in a restricted way, contains the absorbed opposite arrow of time $-t'$. This way a reduced quantity of SIMULTANEITY is present in every particle. The reach of that SIMULTANEITY is related to the amount of energy of the particle.</p> <p>In the origin there was no qualitative distinction between the Core-dimensions. It is the order of the uncording that created a difference in their quality.</p>
<p>The scenario of descent: indicates the order of the uncording of the Core-dimensions and the absorption of some of the courses.</p> 		
O	<p>After the uncording of the courses from T the courses from E, D, Z, Y and X were uncorded.</p> <p>The drive of electro magnetism and the conservation of a part of NON-LOCALITY in every type of matter.</p> <p>The emergence of Radiant Matter and</p>	<p>By the uncording of the first Core-dimension T the existence of the original SIMULTANEITY stopped and only NON-LOCALITY remained. The remaining Core-dimensions were doomed to have a more spatial nature.</p> <p>The next two Core-dimensions that uncorded were also time-like but through their spatial touch they got a different role. One was E and the other D. One of the courses of Core-dimension E $+e'$ was absorbed in the fourth order particles. The other arrow $-e'$ (green color) serves as the drive of electromagnetism.</p> <p>Every particle contains the absorbed opposite arrow of E, $+e'$. This means that in a restricted way a reduced quantity of NON-LOCALITY remains in every charged particle. The reach of NON-LOCALITY is related to the amount of energy of the particle.</p> <p>With the Core-dimension D it becomes a different story. Its opposite arrows of the courses both are absorbed in Radiant Matter. Together with the three last Core-dimensions Z, Y and X they create the quarks (and neutrino's). Three of those quarks constitute a nucleon (a proton or</p>

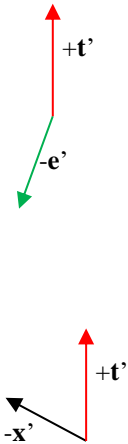
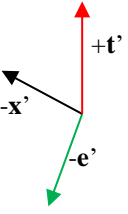
A Model that leads to new knowledge

	the shelter of most of the Antimatter .	a neutron). The left course -d' (green color) creates the up-quarks that are part of Radiant Matter. The right course + d' creates the down-quarks that are part of Antimatter (as we shall see later with the discussion on the configuration of the quarks).
O	Not all Core-dimension have a rigid spatial orientation.	The Core-dimensions Z, Y and X have a pure spatial nature. Their courses of space are the very foundation of Radiant Matter. Therefore these courses have a rigid spatial orientation . This also means that the courses of space are divided in two classes by the scenario of descent: the space orientated and thus directional $\pm x'$, $\pm y'$ and $\pm z'$ and the non-space orientated and thus non-directional $\pm d'$ and $-e'$.
T	The real predimensions constitute the absolute space-time .	All real predimensions together constitute the absolute space-time. The courses of space will in some cases still show affinity towards their complementary real dimension in this absolute space-time . That is a property they may or may not have received from the condition they received in the Core-space.
Q	How did mass and charge emerge?	Through the affinity of the directional courses of space $\pm x'$, $\pm y'$ and/or $\pm z'$ with their complementary real spatial predimension x, y and/or z the formation of mass² is obtained. Through the affinity of the non-directional course of space $-e'$ with its complementary real spatial predimension e the formation of charge³ is obtained.
Q	Is there also evidence that affinity with the real dimensions ensures the existence of mass and charge?	In the twentieth century, Viktor Schauberger demonstrated that powered vortexes can cause dematerialization processes. Driven vortexes disrupt the affinity whereby both the mass and the charge can be converted into energy. The effect of this is that wild transmutations can occur. Such a phenomenon has been noted by Marc LeClair: http://www.waterjournal.org/uploads/vol5/supplement/LeClair.pdf
T	Besides all the basic building blocks the Model explains a number of basic laws in physics.	The course of time is contained within every form of Matter. That means that every particle follows the same pace imposed by the course of time. The fact that every form of Matter in time progresses at the same pace creates what we call Now . This phenomenon causes the existence of the law of conservation of energy .
O	Matter consists of several orders.	Starting from the two Core-spaces the courses recombine to create Matter. The number of courses of space that are collected in a particle determines its order . The presence of one course of space means that the concerned particle is of the first order. This way we can obtain five orders of particles.

² We don't need Higgsbosons for this purpose.

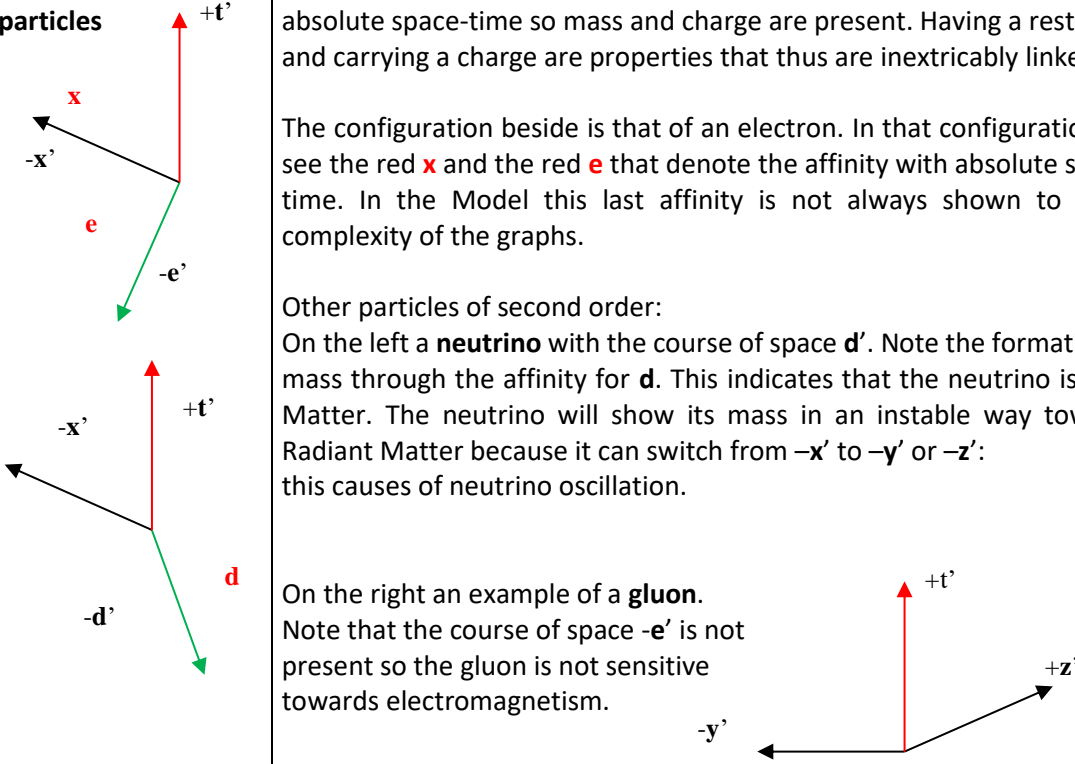
³ The explanation of the nature of charge here is totally different from present Physics.

A Model that leads to **new knowledge**

T	First order particles 	<p>A particle of the first order is a combination of the course of time together with one course of space. Two kinds of photons belong to this order. In classical Physics we barely know them.</p> <p>One of them is an electro-photon that has no speed and that is released by the electron during the formation of an atom. Its creation causes negative binding energy. Its existence is known as a stationary charge around an atom. On the graph beside we see the configuration of an electro-photon. Therein the red arrow +t' is the course of time and the green arrow -e' is the electromagnetic drive. This drive has no rigid spatial orientation en mostly doesn't contribute permanently in the speed of a photon.</p> <p>The second is a magneto-photon that has a maximum speed of $c\sqrt{2}$. These kind of photons are released when electrons loose charge⁴. On the graph beside we find the configuration of a magneto-photon. Therein the red arrow +t' is the course of time and the black arrow -x' is one of the possible courses of space $\pm x'$, $\pm y'$ or $\pm z'$. This drive has a rigid orientation and contributes maximally in the speed of this photon.</p> <p>The best-known kind of photons, the electromagnetic photons, follow shortly.</p>
Q	Massive or charged?	None of the courses of space of these particles has affinity with the absolute space-time. Hence they have mass nor charge.
T	Electromagnetic photons 	<p>Electromagnetic photons are derived from a particle of the second order; namely the electron that we'll discuss later. The electron is a combination of the course of time together with two courses of space. Electrons can generate electromagnetic photons. This is possible when electrons change speed.</p> <p>Beside you can see the configuration of the electromagnetic photon. Both courses, in this case -x' and -e', have no affinity with the absolute space-time. Hence this kind of photons has no mass and no charge. The mutual position of the two driving courses -x' and -e' determine the speed of this photon.</p>
Q	What is spin ?	The electromagnetic photon in the above configuration can have the course of space +x' instead of -x' . This possibility to swap means that this kind of photon is able to show the property of spin: a spin up and a spin down. Because this property is caused by a course of space we never understood what the spin of a particle really is.
O	Wave and particle behavior of light The possibility to switch is present in the formula of energy	<p>From the formula of energy from photons it appears that their amount of energy is determined by their amount of information.</p> <p>When this information is not threatened by other similar information (no observation) than the information stays in Here and Now. Light than behaves as a wave.</p> <p>When this information is threatened by other similar information (observation) than the law of conservation of energy can be violated. The information than automatically is switched into SIMULTANEITY whereby light will behave as a particle.</p>

⁴ In the 'Black Light Radiation'- experiment from Randell Mills.

A Model that leads to **new knowledge**

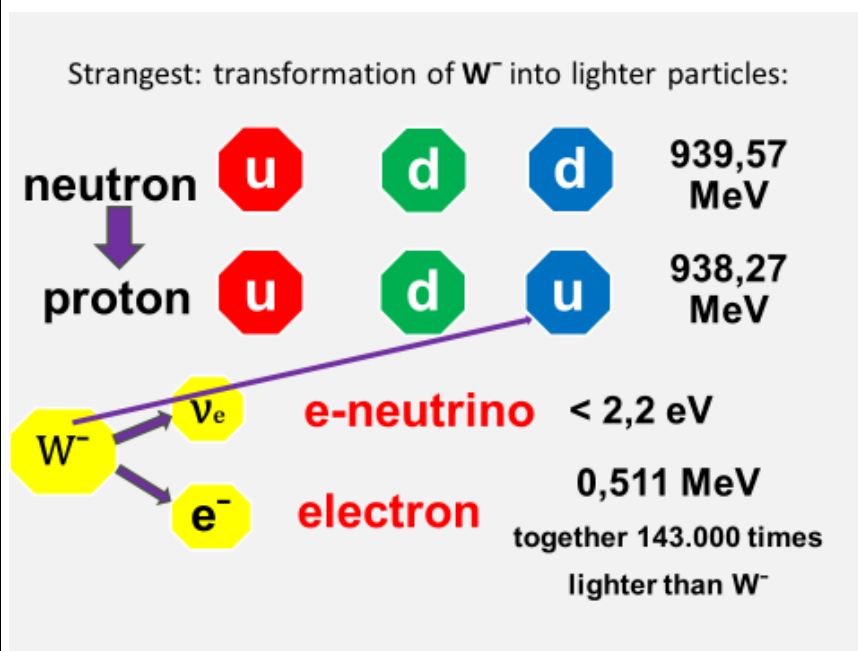
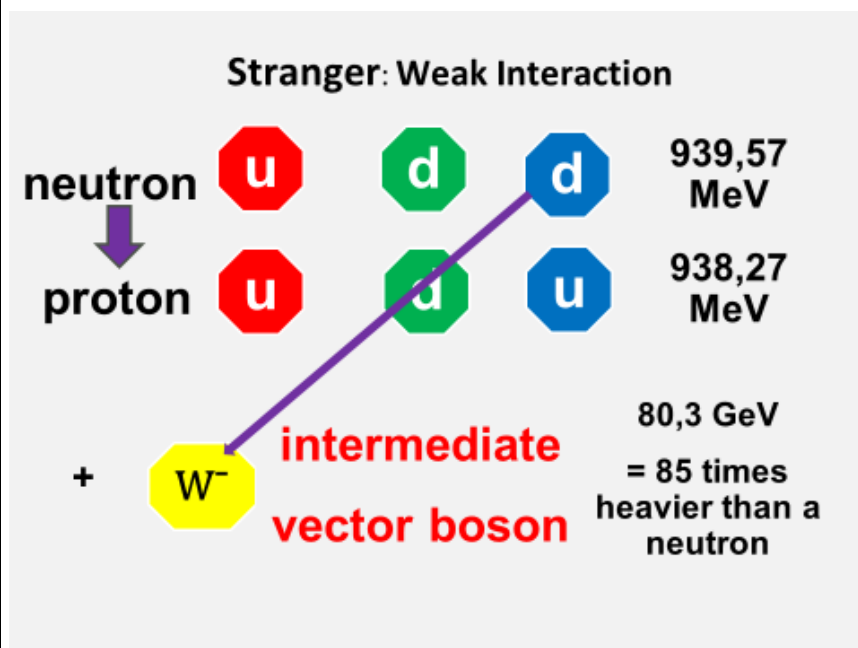
O	Refraction can be understood: why light changes direction and speed when passing from one medium to another.	From the configuration of the electromagnetic photon it can be understood what happens when it passes from one medium to another. Difference in medium influences the position of the drive $-x'$ and $-e'$. This event changes the direction and the speed of the electromagnetic photon: we observe refraction. Also negative refraction with a resulting speed of the photon above the speed of light then is possible.
T	New Physics?	The comprehensibility a lot of the previous phenomena (uncertainty relations, mass, charge, law of conservation of energy, negative binding energy, spin, wave and particle behavior and refraction) make it clear that the development of a deterministic quantum mechanics is possible.
T	Second order particles 	<p>Electrons are second order particles. They have a double affinity for absolute space-time so mass and charge are present. Having a rest mass and carrying a charge are properties that thus are inextricably linked.</p> <p>The configuration beside is that of an electron. In that configuration we see the red x and the red e that denote the affinity with absolute space-time. In the Model this last affinity is not always shown to avoid complexity of the graphs.</p> <p>Other particles of second order: On the left a neutrino with the course of space d'. Note the formation of mass through the affinity for d. This indicates that the neutrino is Dark Matter. The neutrino will show its mass in an instable way towards Radiant Matter because it can switch from $-x'$ to $-y'$ or $-z'$: this causes of neutrino oscillation.</p> <p>On the right an example of a gluon. Note that the course of space $-e'$ is not present so the gluon is not sensitive towards electromagnetism.</p>
O	Spin	The above configurations of the electromagnetic photon and of the electron show that all these particles have the property spin : $-x'$ can be replaced by $+x'$.
T	Third order particles: the up and the down quark	<p>A particle of the third order is a combination of the course of time together with three courses of space, included the non-oriented course of space $-e'$. The quarks belong to this order.</p> <p>In the graph of the prephase of the configuration below we can recognize a number of things:</p> <ul style="list-style-type: none"> * the composition of the courses of space from the up and the down quark. They are a product from the courses of space $-d'$ and $+d'$ that therefore are no longer actively present. This demonstrates that every kind of quark is derived from a fourth order particle: bosons. The heavy particle discovered at CERN is a boson or Dark Matter but not the so-called Higgsboson. * the so-called colors of the quarks: from the configuration one can easily see that three possibilities exist.

A Model that leads to new knowledge

		<div style="display: flex; justify-content: space-around; align-items: center;"> <div style="text-align: center;"> <p>up</p> </div> <div style="text-align: center;"> <p>down</p> </div> </div> <p>The down quark is created from the course of space $-d'$, therefore it is Antimatter.</p>																																				
<p>O</p>	<p>Strong Interaction, Weak Interaction and bosons.</p>	<p>When we study the interactions between the quarks of a nucleon with these configurations we discover (all in Chapter 7 of the Model):</p> <ul style="list-style-type: none"> * what Strong Interaction really is. It exists not only of the formation of forks by two of the courses of space of each quark. This force also finds its origin in the strongly negative nucleon-binding energy that emerges during nucleosynthesis. * where the two heavier generation of particles come from * how a nucleon can weigh 100 times more than the three constituting quarks. Due to the Model we now know what causes the existence of mass. We can better understand what happens in a nucleon. <div style="background-color: #f0f0f0; padding: 10px; margin-top: 10px;"> <p style="text-align: center;">Strange:</p> <p style="text-align: center;">the 99% missing mass of a nucleon is provided by Strong Interaction:</p> <table style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 30%;">neutron</td> <td style="width: 10%;"></td> <td style="width: 10%; text-align: center;"></td> <td style="width: 10%; text-align: center;"></td> <td style="width: 10%; text-align: center;"></td> <td style="width: 10%;"></td> </tr> <tr> <td>939,57 MeV</td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td></td> <td></td> <td style="text-align: center;">2 MeV</td> <td style="text-align: center;">+ 5 MeV</td> <td></td> <td style="text-align: right;">= 12 MeV</td> </tr> <tr> <td></td> <td></td> <td></td> <td></td> <td style="text-align: center;">+ 5 MeV</td> <td style="text-align: right;">= 9 MeV</td> </tr> </table> <table style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 30%;">proton</td> <td style="width: 10%;"></td> <td style="width: 10%; text-align: center;"></td> <td style="width: 10%; text-align: center;"></td> <td style="width: 10%; text-align: center;"></td> <td style="width: 10%;"></td> </tr> <tr> <td>938,27 MeV</td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> </table> </div>	neutron						939,57 MeV								2 MeV	+ 5 MeV		= 12 MeV					+ 5 MeV	= 9 MeV	proton						938,27 MeV					
neutron																																						
939,57 MeV																																						
		2 MeV	+ 5 MeV		= 12 MeV																																	
				+ 5 MeV	= 9 MeV																																	
proton																																						
938,27 MeV																																						

A Model that leads to new knowledge

We discover how a neutron can transform into a proton. It does this by transforming one of the down quarks into an **ultra-heavy boson**. This boson very quickly decays into an up quark and during that process it delivers an electron and a neutrino (this is **Weak Interaction**).



A Model that leads to new knowledge

Th	A possible conversion of charge into energy appears.	<p>1) The drive of the course of space, that allows the existence of mass, can be converted into energy as we know from $E = mc^2$.</p> <p>2) That involves that also the drive of the course of space -e', that allows the existence of charge, can be converted into energy as we know from according to the ratio⁵ $E = Qc^2$ and $Q = q \cdot m_e / q_e$ or $E \equiv qc^2$.</p>
C	Mysterious sources of energy and a lot more!	This is a fundamentally different explanation of what charge is than that of present quantum mechanics. There the charge is a coupling constant, which is an abstract given. In the Model the charge is a physical property similar to mass. Thus the Model provides an explanation for some claims regarding mysterious ⁶ sources of energy ⁷ . We will have to take this into account in an updated law of conservation of energy.
O	The first three order particles shape Radiant Matter.	The first three orders of particles are called Radiant Matter. They obey gravity as opposed to the fourth and fifth order particles that we briefly discuss below. A detailed discussion can be found in Chapter 8 of the Model. In there also a new cosmological view is worked out. Below a brief extract from the discussion on Dark Matter and Dark energy.
T	Fourth order particles or Dark Matter (DM).	<p>A particle of the fourth order is a combination of the course of time together with four courses of space: this are the bosons. To this order belongs the above mentioned intermediate vector boson.</p> <p>The energetic formula of this order of particles is: $E_{R4} = m_{hc} \cdot c^3 v_R^{-1} = m_{hc} \cdot c^3 / v_R$ in which m_{hc} is the mass when the particle has the speed of light c (the index h stands for huge) and v_R is the relative speed of the particle.</p> <p>The factor c^3 shows that it concerns a particle that has a huge amount of energy in certain circumstances. That is the case when the relative speed v_R becomes low. Due to the inverse proportional relationship between the speed and the energy, this means that any reduction in speed has a lot of impact on the energy of the particle. This relationship also implies that the particle cannot be sensitive to gravity. It cannot change speed if there is no energy available.</p>
T	Fifth order or Dark Energy (DE).	<p>A particle of the fifth order is a combination of the course of time together with five courses of space.</p> <p>The energetic formula of this order of particles is: $E_{R5} = m_{gc} \cdot c^4 v_R^{-2} = m_{gc} \cdot c^4 / v_R^2$ in which m_{gc} is the mass when the particle has the speed of light c (the index g stands for gigantic) and v_R is the relative speed of the particle. The factor c^4 shows that these particles can have a gigantic amount of energy. Their energy is much more sensible to changes of speed than the former particles due to the factor v_R^2 in the denominator. They neither are sensitive for gravity.</p>

⁵ $E = q \cdot m_e / q_e \cdot c^2 = Qc^2$ (the symbol \equiv makes it possible to write the equation apart from metrics as $E \equiv qc^2$) in which q the amount of charge that is transformed into energy, q_e and m_e respectively are the charge and the mass of an electron.

⁶ a.o. the Black Light Radiation from Randell Mills

⁷ We have thus abandoned the existence of ZPE (Zero Point Energy) or energy from vacuum.

A Model that leads to **new knowledge**

E	Bosons and neutrinos are Dark Matter because they contain the d' -dimension.	<p>From the energetic formula with c^3 and c^4 it appears that the fourth and the fifth order particles contain the biggest part of the energy of the Universe.</p> <p>Amongst others Dark Matter exists of bosons that we discover in particle accelerators:</p> <ul style="list-style-type: none"> * They create Radiant Matter * They are responsible for the formation of Stars en cause Gamma Ray Bursts. During the formation of a star they are included and they codetermine the speed of the movement of the star in its galaxy. <p>Active stars expel neutrino's. They belong to Dark Matter. That we can see by the presence of $\pm d'$ and d in their configuration (see above). The orientation of d is not observable for us. The Model indicates that d is oriented towards the centre of the galaxy. This way neutrinos can push an active star away from the centre of its galaxy. When the star extinguishes the production of neutrino's stops. The extinguished stars slip down to the centre of the galaxy to be gobbled by the central black hole. In there the absorbed energy becomes NON-LOCAL and that energy will somewhere else in the Universe be picked up by the fourth and fifth order particles. When they do that they slow down.</p> <p>Dark Energy is responsible for the existence of Quasars: these particles can spit out entire galaxies in a very short time and accelerate again.</p>
E	Exceptional energy transfers	DM and DE normally move with the speed of light. They can only slow down by the absorption of energy via NON-LOCALITY from black holes that are absorbing Radiant Matter.
O	According to the Model fields don't exist.	The formation of mass needs no messengers, so there are no Higgs-bosons. Also gravity is not a field so gravitons don't exist.
O	Some ignored startling experiments	<ul style="list-style-type: none"> * Black Light Radiation * Watergas or HHO: see article on C-zones * Leonard Mandel: in an interference experiment light behaves like a particle even when the track detectors are not switched on.