# Synopsis manuscript "Unbelievable"

In September of 1998, I further deepened my exploration into an unanswered question which arose 27 years earlier during my studies of applied physics.
After 2 ½ months of research it was evident to me, that theoretical physics at the end of the 19th and the beginning of the 20th century had arrived at two fundamentally erroneous conclusions, thereby distorting the physical insight into the atomic and subatomic world.

Since that time, I have done my utmost to point out to scientists the omissions I found and to request revisions. The enthusiasm of scientists to fix these errors is minimal, since the perspectives of 100 years of theoretical physics need to be changed. Their resistance to review ancient assumptions appears insurmountable

To my understanding, it's important that society be made aware of what mistakes were made. Therefore, I have written down my findings in this book. I describe the process whereby these errors occurred and why and how science has been able to commit them. Theoretical physics may be too mathematical in nature for the non-scientist to comprehend the mistakes and what influence this had on subsequent development

The omissions took place over 100 years ago, when the mathematics of theoretical physics was not as advanced, so a knowledge of high school mathematics is sufficient for comprehension by the non-scientist. The analysis unravels the mysteries of Quantum Mechanics and the physics underlying the quantized energy levels of atoms solely with the use of classical physical concepts.

Insight into traditional physics, shows how quantum mechanical effects can occur. The argument of scientists that the knowledge of Quantum Mechanics can not be understood with classical physical concepts is unfounded. The understanding of quantum mechanics for the non-scientist is just as simple as any other science.

The refusal to admit that mistakes were made, prevents non-scientists the opportunity to gain insight into the physics of quantum mechanical phenomena. After reading this book the reader can decide whether or not the existing understanding of theoretical physics adequately describes reality, or whether new insights are needed.

# Unbelievable

## Preface

Even in science, errors are made. During my sabbatical I wanted to do something both challenging and interesting. With the passage of time I realized I had chanced upon something special -

something one can't ignore
something that is very important
something that could make a difference
something that is a challenge
something that doesn't appear in human life in general.

Now, after 14 years in which I gave everything I had; one year of productive effort and thirteen years of fruitless attempts to be heard, it is time document the struggle and the reasons I felt it necessary to make my discoveries known.

Science claims as fact that time and space are relative, that there are seven dimensions, of which we can only experience three (length, width, height), that analogous worlds and wormholes are necessary besides many, many more mathematically-enforced patterns. According to science, this is the existing reality, which places it on the level of a Grimm's fairy tale! We, the ordinary people, are not allowed to question the correctness of the findings of the science of theoretical physics.

Theoretical knowledge, scientific conclusions founded on undeniable experimental scientific observations, is speculative and should therefore by definition be labelled as hypothetical. Theoretical assumptions, founded on indisputable observations, are not in themselves indisputable. Regardless, theoretical physics claims otherwise. In this book I demonstrate that scientists drew fundamentally inaccurate conclusions, laying a foundation for the fantastic fairy tale forced on us as the inevitable truth.

The paradigm I propose when the inaccuracies are corrected, is a scientific reality of only three dimensions, without inconceivable paradoxes and unaccountable contradictions. A consistent physical picture in which quantum mechanics are explained in a logical way within the context of classical physics. Nuclear fusion, could provide for

society, a realizable source of clean and abundant energy if sound efforts were made in that direction. Up to now, there is a categorical refusal to do so.

Theoretical Physics estranged itself completely from the philosophy of logic through extreme mathematical references which were unintelligible to laymen as well. This science is the only one where common sense is not sufficient to be able to understand the scientific consequences. Mathematics are for many sciences, a competent advantage, but only where it enables the ability to reach scientific conclusions in a logical way. Logic always has the last word. When by mathematical processes, conclusions are reached which cannot withstand testing by philosophic logic, then the conclusions must rejected as untruthful. This is so with all the sciences, other than theoretical physics.

The fact that theoretical physics is dominated completely by mathematics makes the dangers and limitations difficult to understand. Logic and common sense have been sidelined completely. Only the experts or insiders are still able to judge what is right and what is not. When scientists are brought up with conditional theories presented as the absolute scientific truth, then the critical judgment based on experimental proof is ignored.

Any challenge to the established order brings into question their competence. No ambitious and successful scientist will tolerate the loss of painfully obtained superiority. Common sense, without access to and understanding of higher mathematics limits the ability to question, to assess, to check and correct science, so errors proliferate.

After 14 years I have to draw the conclusion that it is impossible for me to motivate scientists to go into the omissions I found. Why I didn't succeed, I can only guess. However, everything that is possible has to be tried out, so that one can't say later on: "Why didn't you write it down understandably for everybody who is interested?"

In this book I try to realize "the impossible"; to convince you, the reader, that the unbelievably wrong conclusions of theoretical physics are based on false assumptions. It is now for the non-scientists to judge whether my claim that the experts and professionals failed is right or wrong. My purpose in writing the book is no longer an attempt to convince the scientists, but to prevent anyone from asking, "Why didn't you write it down understandably for everyone who is interested?" The subject is exact and rather dry. To make it somewhat digestible I'm of the opinion that I should not keep out my personal feelings. After all, it concerns not only science but 14 years of emotion, passion and of fighting a losing battle.

In this book I've incorporated formulas here and there which describe the final results of the analysis. These equations, I'll not withhold from the reader. If the formulas mean nothing to you, don't regard this as a hindrance. If you were able to follow my reasoning you can essentially understand the mathematical derivations. If you wish to examine the derivations or choose for a more exact explanation, or if you want to look at the subjects more closely, then I refer you to

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## The beginning of the end

Not long after we left all fairy tales behind us, a fable of unprecedented proportions was forced on us, aside which, Grimm's fairy tales appear to be the epitome of reason. Beware, those who would demonize the religion of the 20th century.

I was 19 years old and engaged in the first year of study of applied physics, when the teacher introduced the Theory of Relativity. Time and space are relative, orates he. Einstein has proven that beyond doubt. A little later, the irrefutable theoretical proof is given. Theoretical it is too big a word. Actually the Special Relativity Theory (SRT) is no more than the arithmetic elaboration of an inequality, which is caused by an incorrect theoretical interpretation of experimental data.

At the end of the course I ask the teacher: "That you arithmetically calculated the relativity of time and space is obvious, if you assume that the vacuum is absolutely empty and light, regardless of the speed of the source, is always $c$. Arithmetically this is true, but what is the function of the relativity of space and time? Does a relative time and space make any sense? ".

Exact science should always be to the point. No bullshit. Straightforward. The response of the teacher was, "The scientific finding that vacuum is absolute empty space, combined with the constant speed of light, makes the relativity of time and space inevitable."

I agree with this conclusion, but not with the assumption that vacuum is absolute empty space. The same afternoon I go to the library of the Technical University of Delft and read the original German article by Einstein in 1905. The article begins with axioms, which have to be met to be able to make valid conclusions. One of the conditions is that dragged aether does not exist.

Intuitively, I believe that this condition is not met. Yes that must be it! "The dragged aether exists", is my standpoint to escape the absurdity of the relativity of time and space, not knowing that 27 years later this position will bring me 13 years of misery.

After studying applied physics I would like to progress further in the subject. I find physics very interesting and I'm good at it, but concerning the theory of relativity there are serious questions. Before being able to decide whether I continue studying in theoretical physics, I first want to know what the scientific experts think about it

themselves. I want to continue studying in Astronomy. The mystery and the immense size of the universe, gravity, supernova explosions and more excites me greatly. But first I want to know whether the science of Astronomy stands with both feet on the ground.

I contacted the University of Leiden where astronomy is taught, to request further information on it. This results in a conversation with Dr. de Bruine, professor at the University of Leiden, where he teaches special and general relativity.

After shaking hands I say: "Dr. de Bruine I've got something I do not understand. If two stones move towards each other in space, then according to the Special Theory of Relativity the clock from one stone runs differently than the other. We do not know in advance which clock runs slower or faster

"That's right", he agrees. I continue: "Suppose I am standing on one of these stones, and you on the other. You have access to a laser beam, so you can communicate with me. You inform me through frequency modulation the frequency of the laser beam. I now know the frequency of the laser beam, which you send to me. I measure a higher frequency than what I have been told, so I must conclude that the clock runs slower on my stone? "

"Indeed that is so", agrees Dr. de Bruine. I continue: "Now the stones pass each other and I measure instantly a lower frequency of the laser beam. My clock now runs faster than the clock on your stone. Apparently the clocks, during the passage, changed places. How can that be? What happened in physical terms to explain this change?"

Dr.de Bruine smiles and turns his hands with palms open upwards. This is all I get. A detailed physical explanation of what caused this "switch" is not given. "Dr. de Bruine," I continue after it has become clear to me that the gesture with the hands is all I can expect: "Can you explain the Twin Paradox because it is not clear to me." "That is not complicated" he says. " Half of the twins, the one who leaves, accelerates and moves away from the Earth. The internal clock of the rocket runs faster, the twin in the rocket is aging more quickly than his brother he left on Earth."

"When the twin in the rocket will return to Earth" he continues, " then he must undergo an acceleration in the direction of the Earth, which is twice as large as when he departed from Earth. First the rocket slows down, so the speed away from the Earth becomes zero, but the acceleration to the Earth must continue to be able to return and go back to Earth with the same speed. The acceleration towards Earth is therefore twice as great as the acceleration when he left from Earth. The clock of the twin in the rocket

is now two times slower. Clear?"


"Almost. The twin can remember that he accelerates twice as long to the Earth than he accelerated away from the Earth. He "realizes" that after returning in the direction of the Earth he is not aging faster than his twin brother on Earth, but instead is aging twice less old. The astronaut can realize that, but what about the rocket? All atoms and electrons of the spacecraft have to somehow "remember" that they first accelerated away from the Earth and then turn and accelerate twice as long towards Earth. All atoms and electrons in the rocket, and the twin, must therefore have a "memory" feature that remembers all gears. The internal clock of every atom and electron on the spaceship must in one way or another know whether they should run faster or slower than the clock on the Earth. How can atoms remember whether they are accelerated or not?"
Dr. de Bruine smiles again and turns his hands, palms upward.

So far goes the understanding of an expert! I decide no longer to test the faith of Dr. de Bruine. Further studies in theoretical physics is not appealing anymore. Economics seems more attractive now. Not an exact study, but in any case much less woozy than theoretical physics.

## Sabbatical

The study of applied physics is in my blood. I am good at it and find it very interesting. Its study provides insight and answers to questions as to why something is as it is. Ideally I wanted to continue to advance my knowledge of theoretical physics after graduation, but was not impressed with it. In my opinion, this study provides no further insight or understanding. The question "Why?" or "How do you explain that?", are invariably answered with: "The mathematics determines that it is so." This answer is unsatisfactory to me. I have the need to understand.

I therefore decided to study economics, because there is always a new insight to achieve. Human action can often be irrational, but is anything but mysterious. After studying economics, I ended up in the banking industry; securities to be specific. I have no objection to receiving a good salary, but the need to feel at least some level of accomplishment is not available. The salaries in the financial world are enormous, while the performance for the client usually has a negative value. Over the years, the aversion to this became so large that I had to leave the financial world for a while. It was time for something else; time for a sabbatical.

Late August, 1998 on an early night in the French Alps under a starry sky, I pick up hang gliding. In the past 10 years there has not been enough time to pursue it. What am I going to do? It has to be interesting and challenging for a change. Why not see if there is an answer to the question that still puzzles me: "Are time and space really relative or does the aether exist?" I knew what I had to do.

Back home, I go to the library in The Hague and look for a book that gives an overview of "why" science came to the conclusion that space and time are relative. This conclusion is based on the scientific assumption that no aether exists and that therefore vacuum is absolute empty space. What I want to achieve is finding an answer, to the question of whether the aether was rightly or wrongly rejected. It is clear that the answer must lie in whether or not there is an aether. Without aether the conclusion of the relativity of space and time seems inevitable, but for now, I will reject that assumption. The special theory of relativity includes many logical contradictions, which conveniently, are all called paradoxes. The extreme improbability that all logical inconsistencies the theory implies are real, suggests there must be an aether. Without aether, reality becomes so illogical that reality cannot be real!

## The propagation of light

Very many things that we perceive, we take for granted. Why would you analyze everything? Some things are as they are. On the question of whether God exists, will probably never be answered. Many wars have been waged in the name of God. Why not just leave this question unanswered and stop the bloodshed?

However it is in the nature of man to be curious and especially to pretend to know the answers to questions. The believer professes to know that God exists and tries to convince the unbeliever, even though he has no proof. Nevertheless, he believes that the other person must take him at his word, because no one can prove that God does not exist. Thank God there is such a thing as science that ends the everlasting debate on questions that otherwise cannot be answered. Science brings knowledge. Yes, science and religion are different things. Isn't that so?

We, the ordinary people, see light and normally we do not wonder how it can possibly exist. For scientists however, it is their job to think about many things and make a distinction between reality and fantasy. Technological development is owed to science. No doubt, it is the evidence that science makes sense; that science brings knowledge.

People are not infallible. Science is man-made and therefore by definition, fallible. Science can be wrong, but do not worry because science is self-correcting. If errors creep into science, they are discovered and eliminated by other scientists. The system of "peer review" will eliminate scientific errors. The work of scientists is screened by colleagues who will discover errors; and omissions will not go unnoticed. Science can not be fictional.
Of the latter, I have serious doubts.

## Stellar aberration

We hear sound and know, that sound propagates through the air around us. We know this because science has made it clear to us. The evidence for this is when we pump out the air around us, then cannot hear.

How about light? We can still see without any air. The thought that then arises is that light reaches us through a different medium. Science assumed, therefore, that in a vacuum, space without air, a medium must be present by which light propagates. This medium, that is logically derived, is given the name "aether" by scientists. There must be an aether for how can the light otherwise propagate?

Stellar aberration is an apparent change in the position of the stars in the sky. It was first observed in 1727 by James Bradley, a British astronomer. This apparent change in position appeared to be dependent on the angle a star made with the elliptical orbit of the Earth around the Sun and the time of year. Every season will show that they have slightly changed their position.

In the figure below, we must have in mind that Bradley is standing on the Earth looking through his telescope at the star *y-Draconis.* The star stands, relative to the orbital plane at an angle of about 75 degrees. Bradley recorded the angle of the star through a telescope for a whole year and the unexplained discrepancy he found became known as stellar aberration. It changed according to the position of the Earth in orbit, the season, and the angle of the star. The change is small and not visible to the naked eye.

Since his discovery, scientists have been working hard to find an explanation. The logical explanation of this phenomenon appeared more difficult than anyone had expected. In the early 20th century, over 175 years after Bradley's discovery, the scholars were still unable to explain this phenomenon and it remains a persistent mystery to this day. It has become a source of despondency and frustration.

We see the light of the stars, so we know that light travels through the vacuum of space. How does light propagate? The general thought at the beginning of the twentieth century, was that there is in the vacuum, a medium (similar to air for sound) by which means, light is capable of moving.
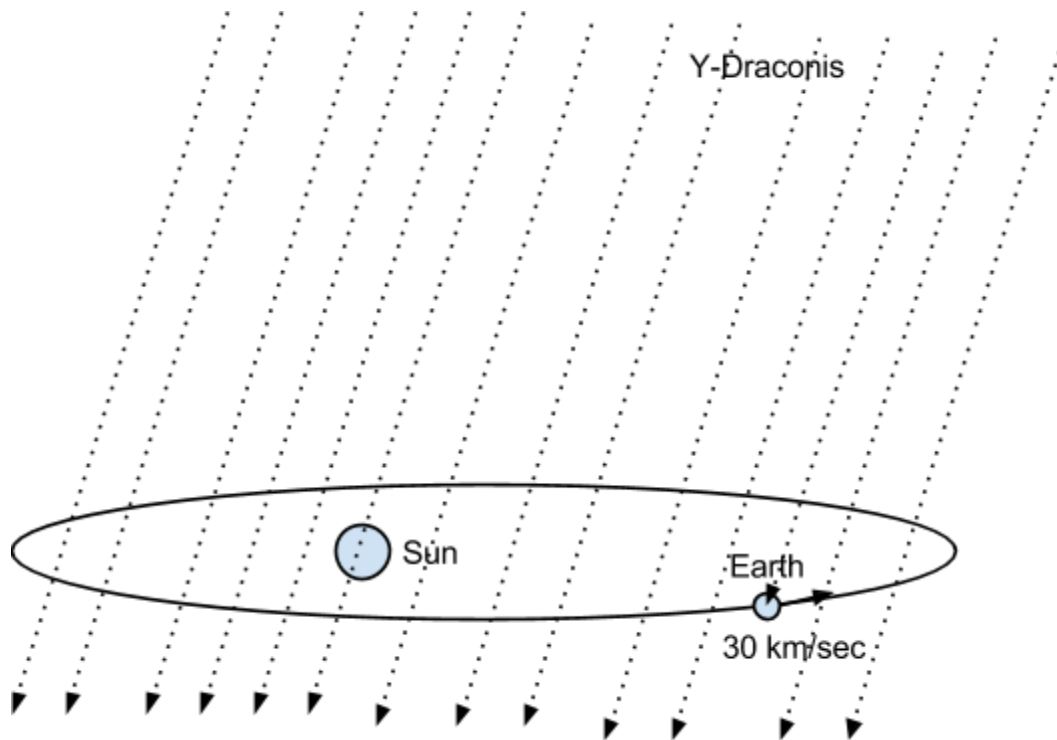
*Figure 1: The rays of the star y-Draconis reach the Earth*

The assumed medium in which the light in vacuum can propagate is called the "aether". Science presupposes two possible forms:

1.      dragged aether
2.      aether in absolute rest

The dragged aether can, as the word implies, be dragged by the Earth in the orbit around the Sun. This aether will move with the Earth, like a moving car drags air and a boat drags water. The aether at absolute rest, which is in opposition, and can therefore not be affected by anything. Both aethers relate as black to white, 0 to 1, and as Yin and Yang.

The speed of light is immense, incredibly large at 300,000 kilometer per second. The motion of Earth around the Sun is "only" 30 kilometers per second; about 1/10.000 of the speed of light. This is extremely slow by comparison, but despite this, is still a speed that cannot be matched by humans. It is large enough to be observed relative to an aether. Initially the scholars thought that the aether and light would be similar to air and sound waves.

When scientists attempted to imagine how the intervention of a dragged aether could produce the observed stellar aberration, the physical analysis, and logical explanation was not in accordance with what is measured or theorized. The change in the apparent position of the star did not match, and even appeared opposite to what was expected.
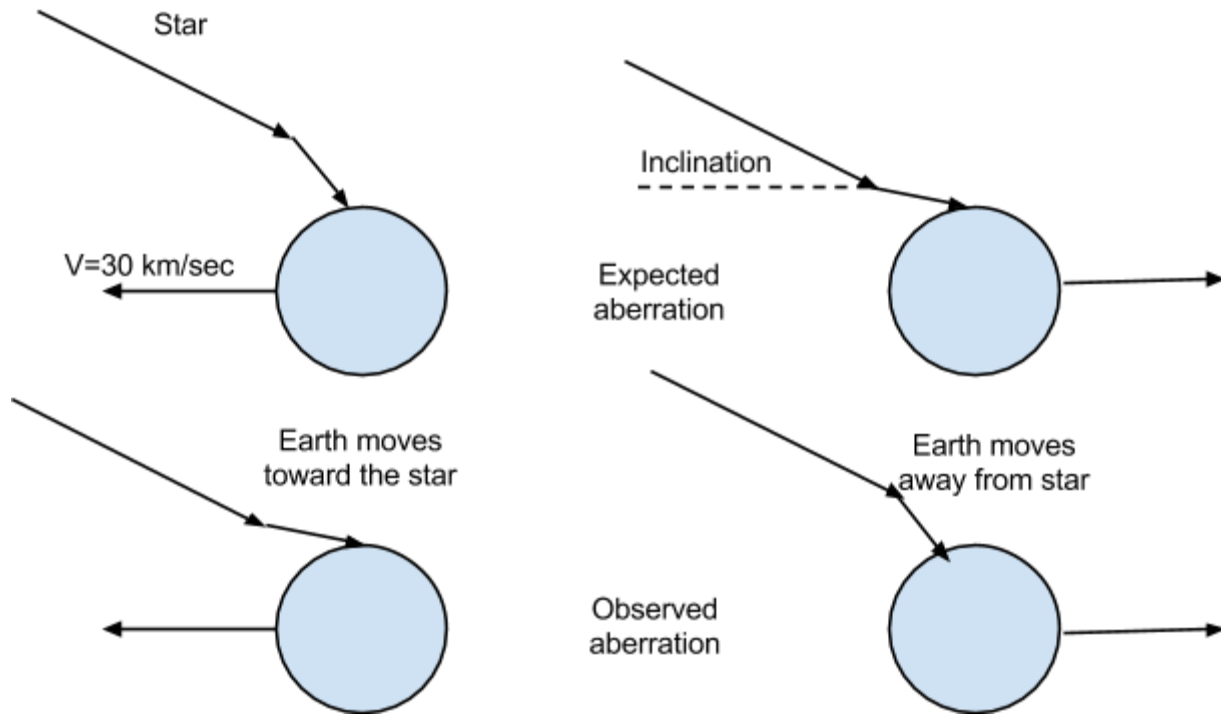


*Figure 2: The observed and expected stellar aberration with dragged aether*

The aether is dragged by the Earth in the path around the Sun, and you would think intuitively the effect would be as shown in *Figure 2* under "*Expected aberration*". Since the observed aberration is the opposite of this, it suggests that light is not dragged by the Earth. Light appears to come more from the front, while you would expect it to come more from above, and conversely, the light appears to come more from above when the Earth moves away from the star while you would expect it to be more from behind (*Figure 2 bottom*).

If the aether is dragged by the Earth, then you might expect that light is also dragged. In conclusion, science states that a dragged aether cannot explain stellar aberration and therefore, it is a false supposition. The above mentioned expectations of scholars, regarding the stellar aberration, concerns an aether where the Earth drags the aether and the aether drags the light.

Aether, when it exists, is hiding in the vacuum and therefore ***must*** possess the physical properties of the vacuum. The vacuum is however, not capable of dragging or changing the direction or path of a beam of light. A dragged aether, as suggested above by science, can not exist because the vacuum cannot influence the impulse responsible for the direction of light. In addition, it has been observed that stellar aberration is opposite to what is expected. The dragged aether can not be present in vacuum seems the inescapable conclusion.

***This conclusion is however premature and incorrect; a fallacy.***

Since Bradley discovered stellar aberration in 1727, theoretical physicists collectively overlooked something. Inexplicable, but true. The above analysis concerns only aether that is dragged by the Earth and where the aether also drags light. The aether proposed by scholars is physically incompatible with observations and the physical properties of the vacuum. It is therefore excluded in advance.

However, it is also possible to imagine an aether that is dragged by the earth, where the aether does ***not*** drag light. That is, a dragged aether consistent with the physical properties of the vacuum. Due to premature conclusions scientists made an unforgivable mistake by which the correct solution of the problem is no longer a possibility. It is beyond understanding why scientists in their analysis did exclude a dragged aether that is consistent with vacuum. This is a blatant omission, because if it is assumed that the dragged aether can not change the impulse and therefore the direction of light waves, which corresponds to the physical qualities of the vacuum, then the scientists would have discovered that this aether exactly explains the observed stellar aberration.

Consider a photon on its way from *y*-Draconis to Earth, which travels through a dragged aether. In this case, the Earth drags the aether in its path. Assume the photon from *y*-Draconis (aether I) penetrates and continues in the same direction in aether II, then after 1 second, the Earth will have dragged the light beam 30 km to the right. This is not possible because a vacuum can not drag light, so there must be stellar aberration to compensate for the movement of the aether surrounding the Earth. How the momentum and direction of the photon are preserved, is illustrated in *Figure 3*.

*Figure 3* shows how stellar aberration physically is explainable with aether which leaves the direction and momentum of the photon untouched.
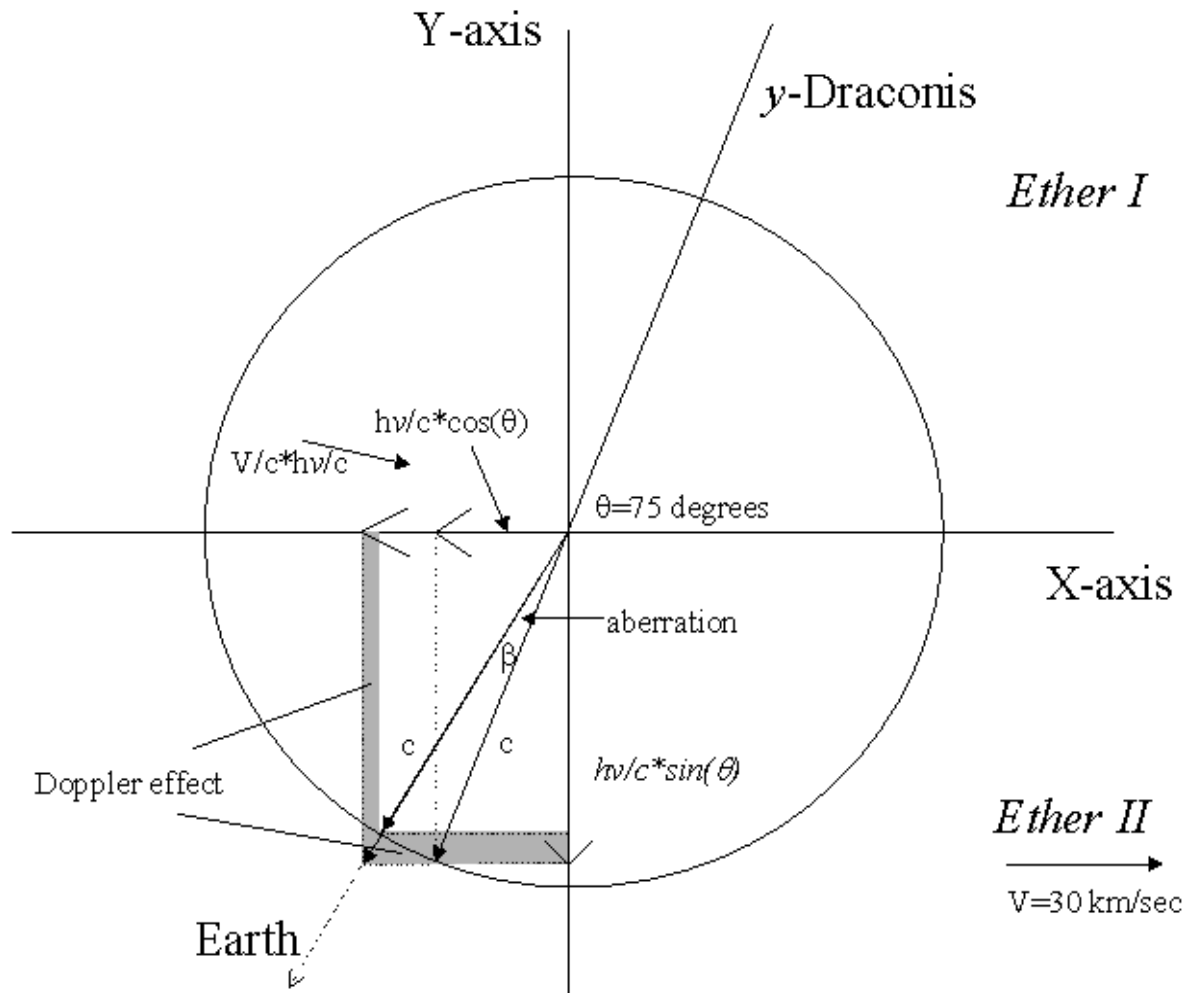
*Figure 3: The Doppler Effect and stellar aberration with dragged aether*

In *Figure 3* a beam of light coming from the star *y-Draconis* (aether I) enters the aether dragged by the Earth. When the photon from *y-Draconis* enters aether II, the aether under the influence of, and dragged by Earth, must allow the photon to keep the same impulse and direction for an observer at rest with Earth. Aether II is identical to aether I. The only difference is that aether II moves with 30 km/sec sideways relative to aether I (*X direction*). The observer in aether II moves along with the Earth. Direction and momentum of the photon to the observer **before** and **after** penetration aether II must be preserved. To achieve this, the moment the photon penetrates aether II, the speed of the Earth around the Sun must be added in the X-direction. By adding the speed of the Earth the angle of the light beam changes (*Figure 3*). This is stellar aberration.

When the lateral speed of the Earth is added to the speed of the photon, then the speed of the photon in aether II becomes greater than the speed of light *c*. Experimental observations have shown that light never goes faster or slower than its limiting speed *c*. The speed of the photon in *Figure 3* must therefore be reduced to *c*. This adjustment causes the Doppler effect. The illustrated aberration and Doppler Effect in *Figure 3* leads to the following mathematical formulas:

$$\beta = \arcsin[\sin(\theta)/\sqrt{1+v^2/c^2+2(v/c)\cos(\theta)}]-\theta$$ for the stellar aberration

and

$$v_2 = v_1\sqrt{1+v^2/c^2+2(v/c)\cos(\theta)}$$ for the Doppler-effect.

Both formulas calculate exactly what is observed, which is convincing empirical evidence for the scientific possibility of the existence of dragged aether, consistent with the physical properties of vacuum.

The observed stellar aberration of a star is dependent on the position, angle of the star relative to the plane of the orbit of the Earth around the Sun; the inclination. In *Figure 4*, *Star A* is perpendicular to the plane of the orbit of Earth around the Sun and exhibits throughout the year, the maximum possible stellar aberration of 20.5 arcseconds. *Star B* is in the plane of the ellipse. The stellar aberration of *Star B* is in this situation nil.
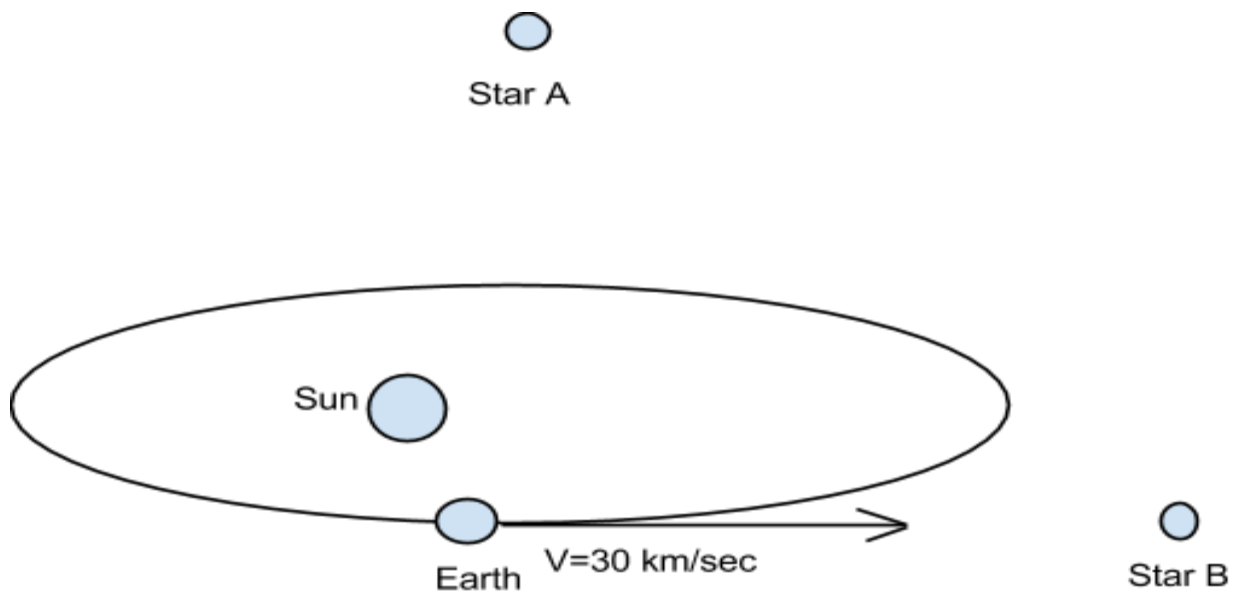


*Figure 4: Different positions of stars relative to the path of the Earth around the Sun*

The derived formulas for the stellar aberration and Doppler effect are generally applicable. The following *Figure 5* shows the maximum stellar aberration of the inclination of a star with the plane of the Earth around the Sun. The higher the star in the sky, the greater the inclination, the greater the aberration.
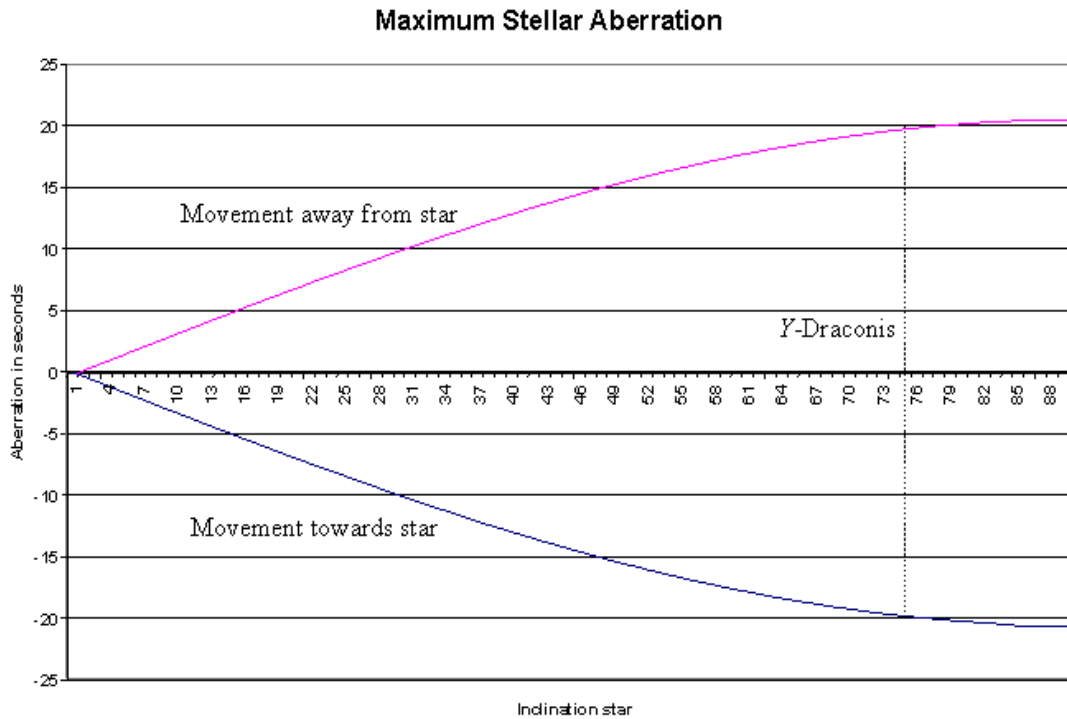


Figure 5: The maximum stellar aberration of the inclination

During the year that Bradley observed the stellar aberration of the star *y-Draconis* he recorded only the inclination of the angle of the star with the orbit of the Earth around the Sun. In *Figure 6* we plotted the calculated stellar aberration of the inclination of the star *y*-Draconis. The calculations correspond exactly to what Bradley registered.

**Theoretical Stellar Aberration y-Draconis during the year**

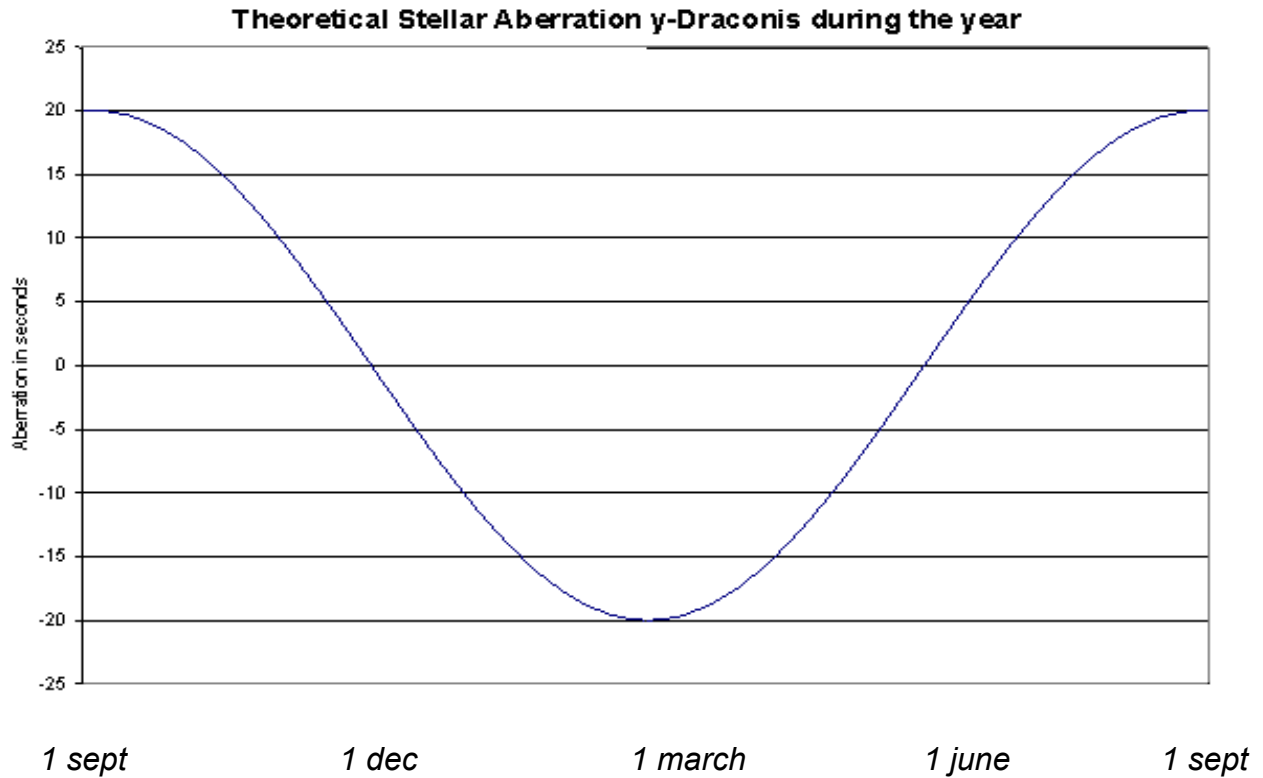1 sept      1 dec      1 march      1 june      1 sept

*Figure 6: The calculated stellar aberration of the star y-Draconis for one year*

In addition to vertical aberration, the aberration of the inclination, there is also horizontal aberration. In *Figure 4*, the Earth moves at maximum speed towards *Star B*. This star is located in the plane of the orbit of the Earth around the Sun. In the situation shown, where a star is in the plane of the Earth around the Sun, there is never any vertical aberration because the star is in the plane of the orbit around the Sun where the inclination is 0 degrees during the year. When the Earth, three months later, moves a maximal sideways relative to *Star B*, then the horizontal aberration is 20.5 seconds of an arc.

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When the calculated vertical and horizontal aberration of a star are determined, we can calculate the exact stellar aberration of any star during the year (*Figure 7*). At an inclination of 90 degrees during the year, the aberration amounts to a circle of 2 times 20.5 arcseconds. With decreasing inclination, an ellipse is obtained that becomes flatter as the inclination decreases, but of which, the long axis always covers 2 times 20.5 arcseconds. At zero degrees inclination the total aberration during the year is a horizontal line of 2 times 20.5 arcseconds.

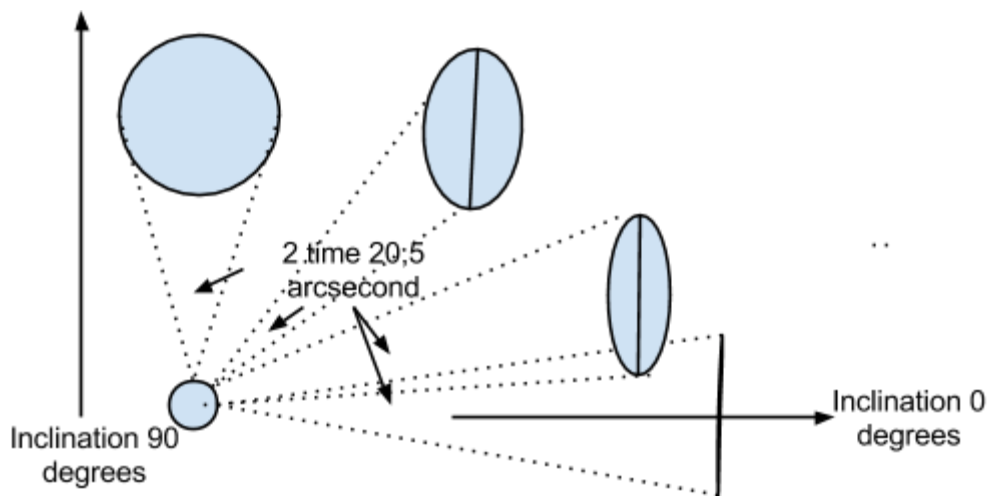The observed stellar aberration is now fully explained and described.



*Figure 7: The stellar aberration throughout the year as a function of the inclination*

## The apparent change in the direction of the photon

You, the reader, might be wondering how it is possible that an angle change takes place in a vacuum, which is unable to influence the direction and momentum of a light beam? The answer is that the photon does not actually change direction. In the following figure it is shown how it is possible that stellar aberration occurs, while the direction of the light beam remains unchanged.
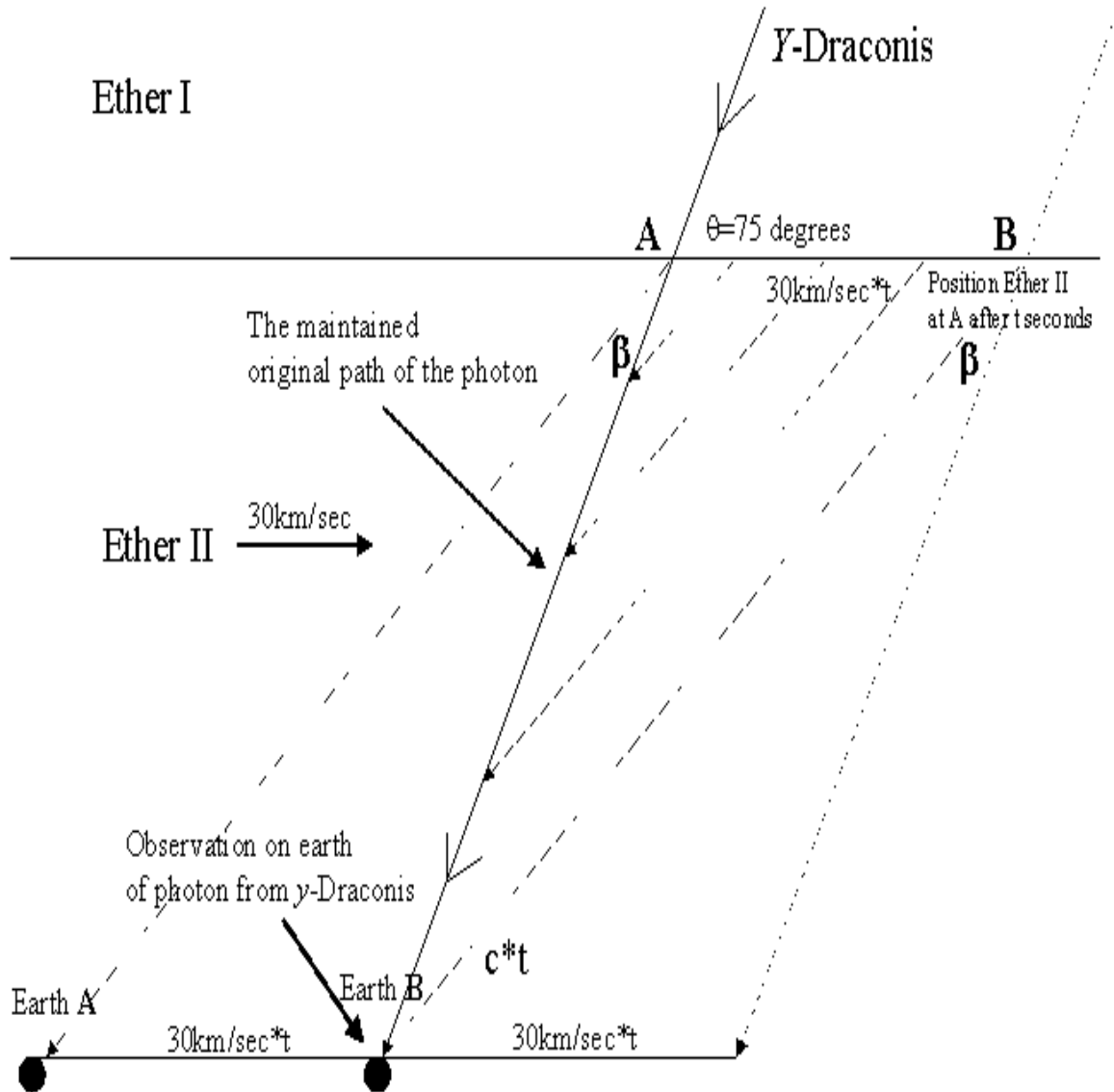


*Figure 8: The apparent change of direction of the photon*

At point *A* in the graph, the light beam enters the aether under the influence of the Earth. At this instant, the adjustment takes place as outlined in *Figure 3*. At the time the photon penetrates the aether under the influence of the Earth, the photon is at point *A* in *Figure 8*. At the moment the photon coming from *y*-Draconis penetrates the aether under the influence of the *Earth*, the *Earth* is at position *Earth A* in *Figure 8*. The photon needs time to travel from *A* to *Earth* to be observed. During the time that the photon is en route to *Earth*, the *Earth* moves to the right. When the *Earth* is at "*Earth B*" in the figure, the photon and stellar aberration, can be observed.

The photon seems to the observer to come from the direction of *B*, but that is an illusion. The beam has actually retained the direction it had in aether I. The direction of the light is not changed. The proposed aether explains exactly the observed stellar aberration. The physical process and the derived formulas describing stellar aberration is exactly what is observed; very convincing empirical evidence that aether exists.

The above physical process is observed by anyone when a plane flies over. The air around us is the medium in which sound propagates. When we hear a plane and look in the direction of the sound we do not see the aircraft. After some searching, the aircraft is clearly somewhere different than where we suspect the plane to be according to the direction of the sound. With sound, aberration also takes place and that is one reason why the plane is not located where we initially look.

The aberration of sound takes place in accordance with the previously described process. The air, the medium for sound waves, doesn't change the momentum and direction of a sound wave. The Doppler effect also occurs with sound waves. The pitch of an approaching train is noticeably higher, than when the train passed. The outlined physical process of stellar aberration and Doppler effect is not as strange or outlandish as you might have thought.

## The aether in absolute rest

Now you have to forget how stellar aberration occurs, because we're going back in time when scientists had no idea how it was caused.

The wrongful denial of dragged aether left open for science only the possibility of an absolutely quiescent aether. Absolutely at rest should be considered as not influenced by anything and thus this aether can, when it exists, be considered as an absolute reference frame in space. Light will travel in this aether, if it exists, in all directions with the velocity $c$. The Earth moves around the Sun at a speed of 30 km/sec. In a year, the time in which the Earth travels around the Sun, the Earth can never be continuously at rest with the quiescent aether. The motion of the Earth, when an absolute aether exists, must at a given time be observed.

In 1887 Michelson and Morley performed a measurement with which the motion of the Earth relative to an absolute quiescent aether should be observed. Michelson and Morley realized that when they turned the alignment of the apparatus 360 degrees, the effect should occur; so they did not need to wait a year for the results. The bewilderment of scientists was great when Michelson and Morley found a null result. They therefore must conclude that an aether at absolute rest can not exist. They found minimal deviation during the rotation of 360 degrees.

The Earth cannot move and be at rest at the same time. The conclusion must be that the aether at absolute rest does not exist. The negation of absolute aether and dragged aether only leaves the possibility of a vacuum with no medium for light in which to propagate. The panic was enormous, for how can light, gravity and electric fields manifest in nothing? There must be a medium through which forces can be transmitted remotely? How can the Sun attract the Earth without a medium? The experiment of Michelson and Morley was repeated many times, always giving the same result.

## Positivism

In the second half of the 19th century the philosophy of Positivism was widespread. Positivism is the philosophy that knowledge, science, can only be based on observable, empirical facts. Religious or metaphysical statements are not classified as knowledge by this philosophy. Observations are considered the only valid source of knowledge and scientific knowledge is only obtained by reproducible observations.

The logical interpretation of empirical facts can yield insights on how the experimental results can be explained physically. The logical understanding of empirical observations is the originator of theoretical science. Without a theoretical interpretation of empirical data there is only empirical knowledge, and no unification for scientific understanding.

Empirical knowledge is for example the observation that a boat floats, as long as it does not leak, or was capsized by being filled with water or was overloaded. Scientific insight is obtained by interpreting these empirical data. Archimedes, a Greek scholar of around 200 BC, concluded by observing and deducing that objects wholly or partially immersed in water encounters an upward force equal to the weight of the water displaced. This is the famous Law of Archimedes and is a theoretical representation of the insight obtained by deduction from empirical observations. All observations are undisputed when the measurements are done properly, are reproducible and are verifiable. The theoretical interpretation of empirical data is derived knowledge; deduced science. But theoretical science should be open for discussion because deductive errors can always be made, which makes it by definition, fallible.

At the end of the 19th century and the beginning of the 20th century, the science of theoretical physics was in very turbulent water. Seemingly inexplicable observations should have been explained, but the human imagination failed when logical solutions should have been found for stellar aberration and quantum mechanical observations. These failings to find logical explanations for physical observations changed the philosophical insights. When observations are reproducible, then there is irrefutable empirical evidence. This is obvious. Empirical knowledge is interpreted by humans as theoretical knowledge, understanding, but it is not infallible. Incorrect conclusions can be drawn.

Normally, incorrect theoretical conclusions will be rejected by means of logical reasoning when false theoretical interpretations are made. Logic separates foolish thoughts from those that make sense. Illogical, religious or metaphysical interpretations

would be filtered and rejected.

Due to an omission in reasoning, we have seen that science wrongly concluded that dragged aether can not explain the cause for stellar aberration and therefore, it cannot exist. Logical omissions can have very, very serious consequences and can relegate theoretical science to fiction. In theory, everything is possible. In theory God can exist and metaphysics can be precise!

## The lifeboat

Absolutely empty space (One of the original assumptions Einstein made when he derived the special theory of relativity-SRT) and the observation that the speed of photons is always the same, regardless of the motion of the light source, caused a problem. When the speed of the source disappears, is not observable, then there is something mysterious going on. SRT became inevitable when in 1887 Michelson and Morley's measurements crushed the last hope for science; an aether at absolute rest. Only absolute empty space was scientifically considered a possibility after both aether, dragged and absolute, were denied.

When there is no medium to account for the observation that light always travels with the same speed $c$, independent of speed of the source, there is an inconsistency. That an object moves is empirically observable and therefore knowledge. When the moving object emits a beam of light it is empirically demonstrated that the speed of the object is not observable in the speed of the light beam coming from the moving object. Observable and not observable, both empirically determined, should therefore both be right. This inconsistency must be eliminated.

SRT is basically no more or less than logic based on simple calculations. In the following illustration, *Figure 9*, Monkey 1 travels to Monkey 2 with speed $V$. Now the empirical knowledge comes into play, which states that for Monkey 1 and Monkey 2 the speed of light is always the same and amounts to $c$. This is a conclusive experimentally established fact. The distance from Monkey 1 to Monkey 2, at the time that the light leaves Monkey 1, is known to both monkeys and is $X$. Monkey 1 sees the light leave and knows that after $X/(c+v)$ seconds Monkey 2 receives the light beam, because the light moves away from him at $c$. And since the light, empirically proven, propagates with $c$ away from Monkey 1 the time for the light to reach Monkey 2 at distance $X$ must be $t_1=X/(c+v)$ seconds.

There is no discussion possible, because it is irrefutable empirical science that prescribes this. Monkey 2 knows that he will receive the light after $t_2=X/c$ seconds, because the light comes to him at $c$ and the distance is $X$. Anyone who can count knows that $t_1$ can not be equal to $t_2$. There is an inconsistency, an inequality, as Monkey 2 receives the light beam only once. So a mathematical synchronization must be conducted to ensure that both monkeys experience the event as one and the same.
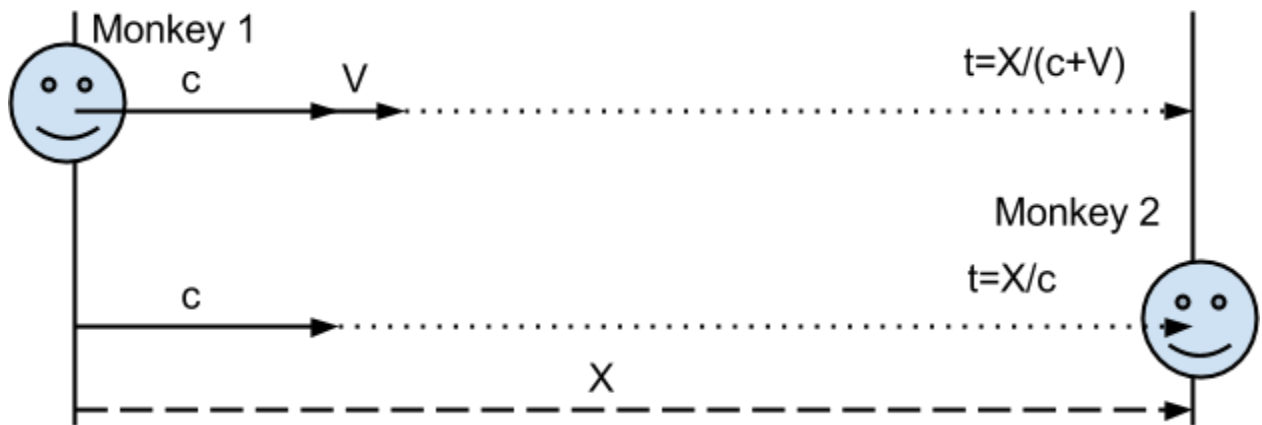
*Figure 9: Different perceptions by different observers*

Einstein could have solved the inequality by assuming that only the time is relative by removing $X$ from the equations for $t_1$ and $t_2$. The equations $X=ct_2$ and $X=(c+v) t_1$ show after elimination of the distance $X$, time $t_2$ in terms of time $t_1$: $t_2 = t_1(c+v) /c$.
Had Einstein's arithmetic addressed the problem this way then the conclusion from simple calculations would have been that only time is relative. Space would still be absolute. I use the above interpretation to show how arbitrary theoretical conclusions can be.

Before Einstein published his first article on SRT in 1905, the Dutch physicist Lorentz had already derived his Lorentz transformations. The derivation is mathematically based on the Michelson and Morley experiment. With the Lorentz transformations, the inconsistency, the arithmetic inequality, that both Monkeys appear not to simultaneously observe the same event is equally dispersed over time and distance. Einstein, who claimed not to have been aware of the derivation of Lorentz, came to the same mathematical result.

The difference between Einstein and Lorentz, is that Lorentz mathematically derives formulas to correct the inconsistency without making theoretical assumptions, while Einstein concludes theoretically that time and space for both monkeys are different.

## The Special Relativity Theory (SRT) and stellar aberration

Dragged and absolute aether are rejected by science as possible theories because of the inability to explain stellar aberration. SRT is widely accepted. You would expect, because this theory is accepted, that it explains stellar aberration in a satisfactory manner.
Which theoretical explanation does SRT actually give for stellar aberration?

The answer is that the SRT actually gives no logical explanation. SRT only contributes a mathematical factor known as the Lorentz contraction or Lorentz factor.

The Lorentz factor: $\sqrt{1 - v^2/c^2}$

With the Lorentz factor, when the speed of the Earth around the Sun and the speed of light *c* are substituted, the maximum stellar aberration of 20.5 arc seconds can be calculated. This and this alone is for the science theoretical physics, conclusive evidence to suggest that the SRT explains stellar aberration.

Only the fact that the Lorentz factor occurs in the formulas derived by Einstein is apparently enough evidence! A physical explanation how stellar aberration occurs with SRT remains a mystery. Actually scientists using SRT, are still completely in the dark how stellar aberration is physically achieved. But without the possibility of another scientific explanation, SRT is elevated to an absolute scientific truth.

Maximum stellar aberration is observed only at stars perpendicular to the plane of the orbit of the Earth around the Sun. Objectively, SRT only provides a factor by which the maximum observed stellar aberration can be calculated; that's all. No explanation is given for the dependence of stellar aberration on the angle of the star in the plane of the orbit around the Sun. Also no explanation is given for the dependence of stellar aberration with the seasons during the year. SRT does not explain in any way, how stellar aberration can physically be justified.

Although SRT provides no explanation how the stellar aberration is achieved, desperate scholars embrace it as the redeeming solution. After more than 175 years, finally, a "possible" explanation was provided and science embraced this opportunity. Science was after a very, very long time looking for an answer, and would uncritically accept any. SRT does not explain, in a logical manner, the phenomenon of stellar aberration. Science had become so despairing, that any explanation was better than none.

Besides a very dubious "explanation", SRT delivers many logical inconsistencies, and contradictions. Desperately the scholars embraced the very speculative mathematical interpretation of SRT and elevated the theory to scientific truth. Is it science or Faith?

## The dragged aether and the electric field

A week into my sabbatical and I have an excellent explanation for stellar aberration, by analyzing the influence of the motion of the Earth around the Sun and the inclination. Assuming that I'm not the only one that is considering the answer of SRT weak and that therefore also scientists would like to see a better explanation, I send an article about stellar aberration to different universities in the Netherlands addressed to scholars who lecture SRT. I expect positive reactions.

It will take some weeks before I will get an answer, so I decide to go on and investigate the physical properties that dragged aether should have to be consistent with phenomena such as the electric field. That an aether can exist is made plausible, but what properties does the aether have to possess to be able to explain other physical phenomena? What does the aether look like?

The electric field is a stable physical phenomenon. To be able to describe an electric field using aether, electric charge separation in vacuum is needed. When the aether is presented as a perfect fluid, with free positive and negative charges, then a positive or negative charge is immediately screened with the opposite charge from the perfect fluid.

The fact that electric fields and charged particles are stable, the conclusion must be drawn that in the aether, charge separation is possible, but also that the charges in the aether can not be completely free, because then charges would immediately be shielded and a stable electric field would not be observable.

Consequently, we assume that aether should consist of an entity, in which the positive and negative charges are trapped. We give the entity the name "point volume". In *Figure 10*, the vacuum is filled up with the proposed point volumes. The point volumes are stacked, while in the point volume there must be a "substance" in which charge separation is possible.
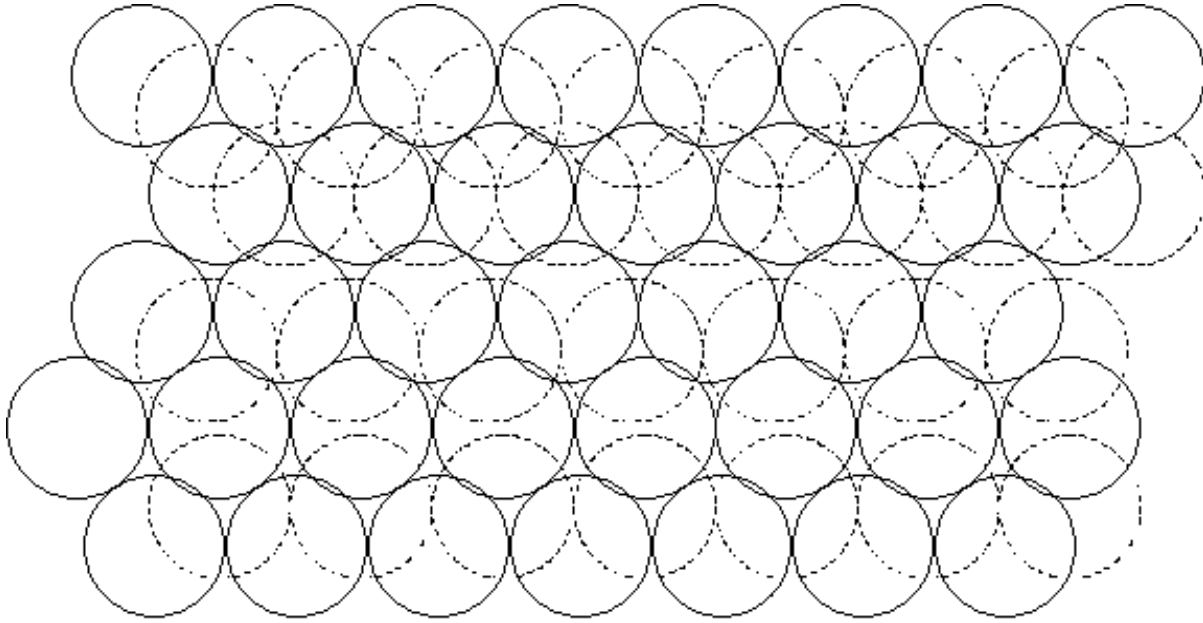
*Figure 10: Point volumes filling up space*

An electric field can now be presented and explained with the assumed point volumes in which charge separation can be realized. This charge separation is schematically shown in *Figure 11*. Each point volume again induces charge separation in the subsequent section of volume and so on. The assumed point volumes make it possible for the electric field to be stable and propagate in a vacuum.

The electric field between two capacitor plates can then be imagined as follows: In the point volumes at the negative plate, the positive charge is drawn to the negative charge while the negative charge is repelled. In *Figure 11*, the negative capacitor plate has to be positioned to the left. The total amount of charge on the negative capacitor plate is offset by the positive charge separation in the point volumes.
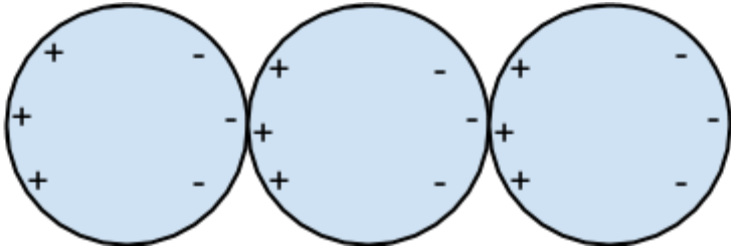


*Figure 11: Representation of charge separation in point volumes by an electric field*

In *Figure 12*, the charge separation, established by the charged capacitor plates in the aether, is shown as an overlap of the point volumes. Left at the positive plate, the negative charge in the point volumes is pulled to the plate, while the positive charge is repelled. The charge separation in the point volumes induce the same in the adjacent point volumes. The plates of the capacitor attract each other by means of the aether.
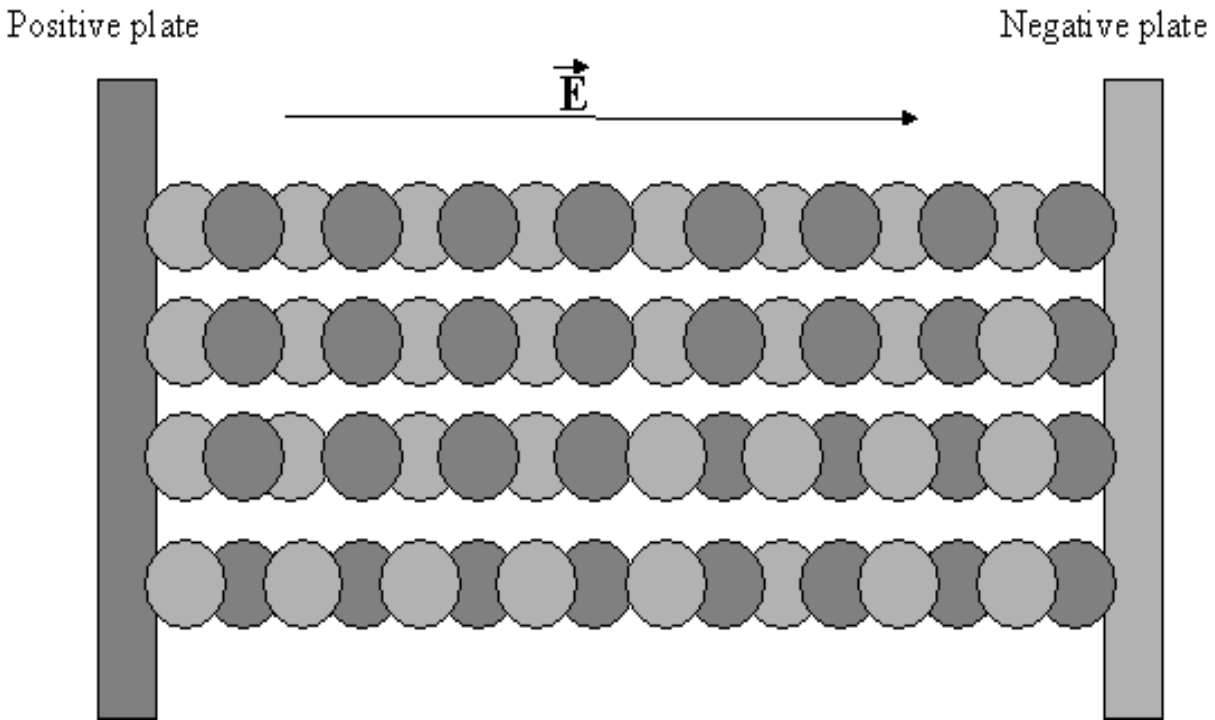


*Figure 12: Schematic representation of charge separation with aether*

When a neutral particle enters between the capacitor plates, nothing happens, but with a charged particle this is different. The electric field between the capacitor plates and the electric field of the charged particle will influence each other. A charged particle has an electric field around it that is symmetrical on all sides. There cannot be a resulting force on a charged particle when there is no other electric field with which to interact.

Suppose that a positive charge is placed between the capacitor plates. Then the electric fields of the capacitor and the charged particle will influence one another. The interaction of both fields results in a force on the particle and plates. The particle will accelerate in accordance with the laws of electromagnetic theory (EM-theory).
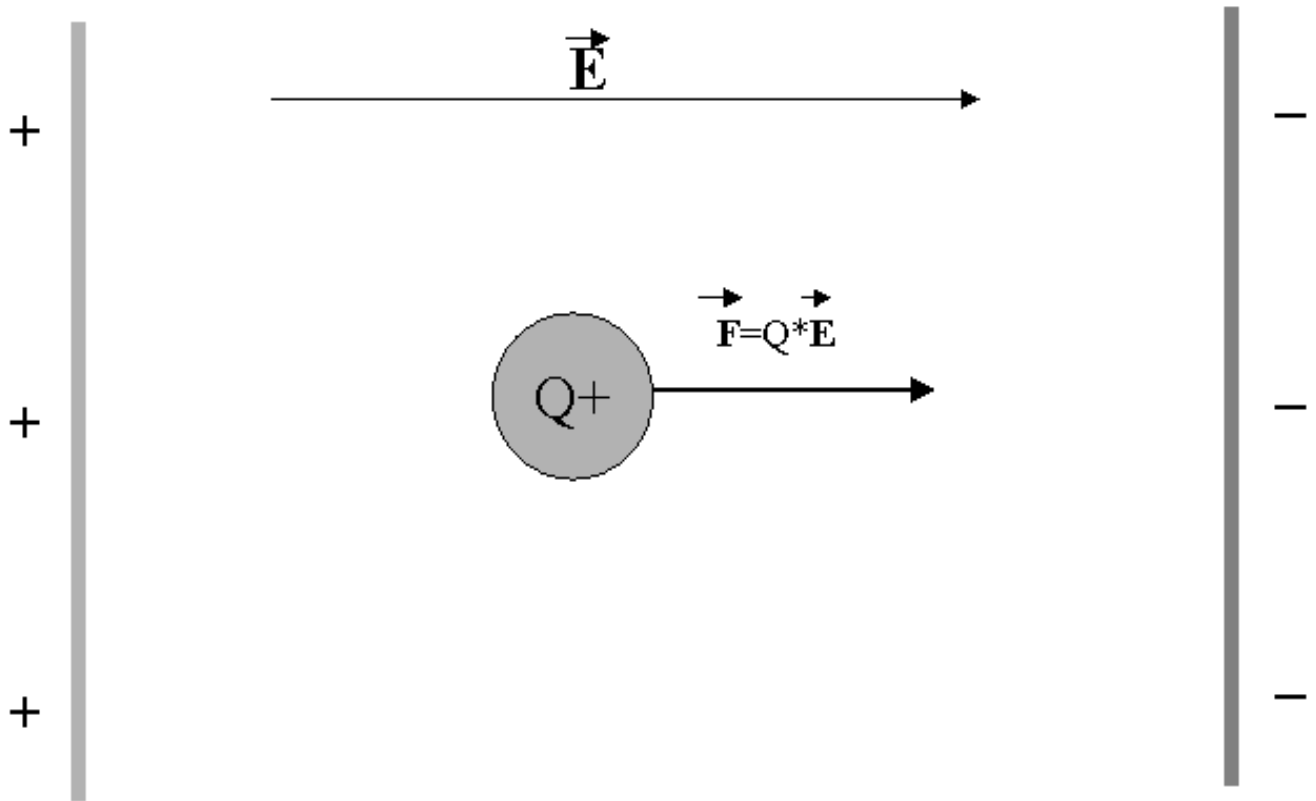
*Figure 13: The force acting on a positively charged particle in an electric field.*

The force **F** (*Figure 13*) will accelerate the positive particle in the direction of the negative plate. Charged particles in accelerators can never (experimentally proven,) be accelerated to the speed of light. This is seen by mainstream science as experimental confirmation of SRT, since according to it, the speed of the light can never be achieved by a massive particle.

With aether, the light speed of about 300,000 km per second, must be seen, in spite of the the incredible speed of light, as a limitation of the aether to transmit electromagnetic changes. In the point volumes, separation of charge will occur when an electric field is generated. Separation of charge in point volumes takes time, despite the enormous speed of light, which can be seen as the inertia of aether (vacuum,) to electrostatic changes.
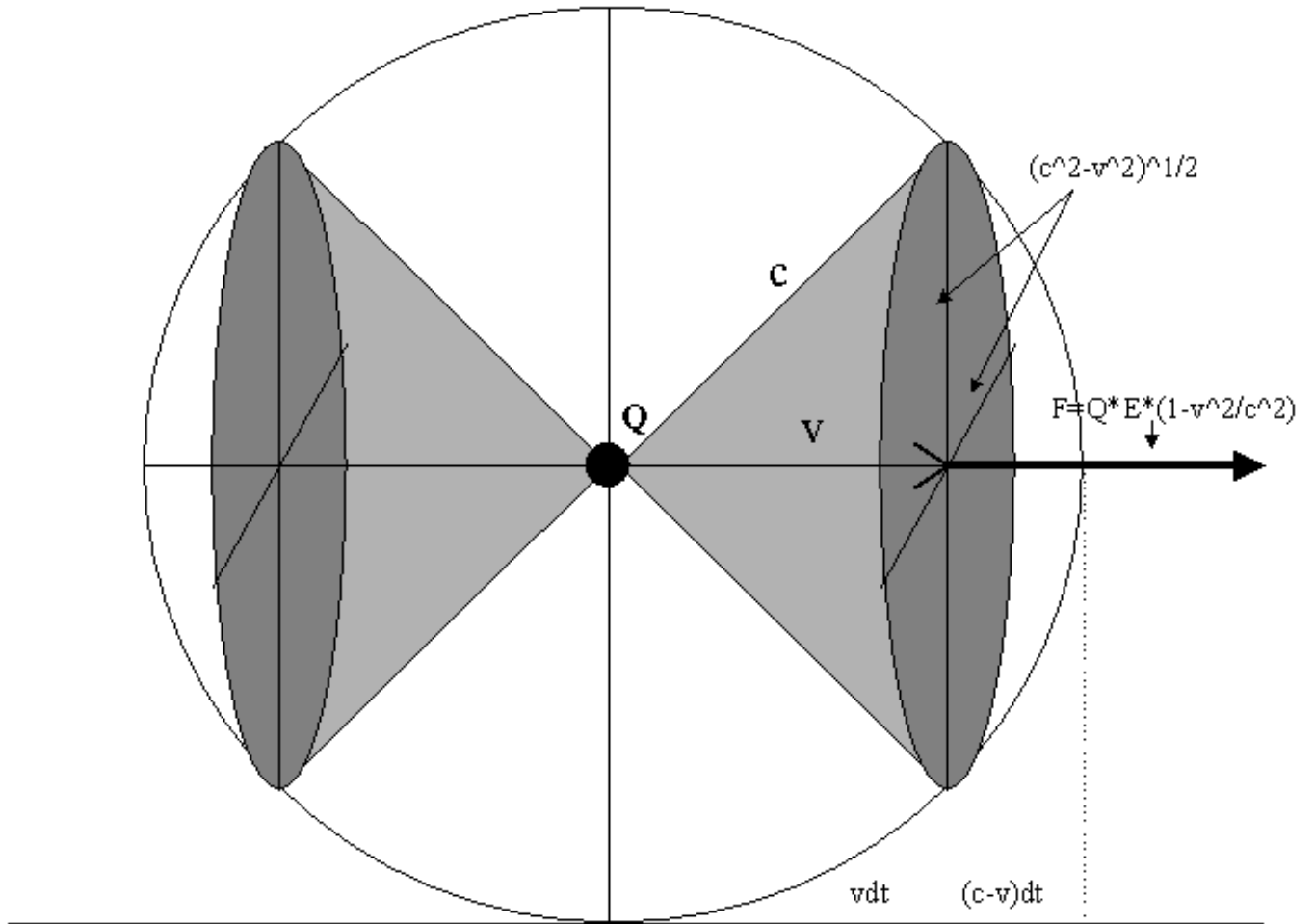
*Figure 14: The loss of force by the inert qualities of the aether*

When a charged mass in an electric field with aether is accelerated, then the particle can of course not be accelerated to the speed of light, because of irrefutable empirical knowledge. With aether, the cause for this does not lie with the relativity of time and space, but with the inert quality of the aether. It is conceivable that, when light velocity is the velocity by which the electromagnetic changes in the aether are transported, that it is physically impossible to accelerate a particle to or above the speed of light. In this context, the speed of light is the inert quality of the aether.

When a charged particle in the electric field is accelerated to *V*, then a portion of the electric field is no longer able to exert force on the charge when the particle is accelerated further. In *figure 14*, this is indicated schematically. The charge *Q* in the figure demonstrates that the particle in the electric field is only accelerated by a fraction of the electric field.

If the charge has a velocity $V$ in the electric field, then the particle will move in the direction of the electric field in a very short period of time, $dt$, a distance of $Vdt$ meters. Charge $Q$ is a distance $vdt$ removed from its original position after $dt$ seconds. The philosophical and empirical law that a reaction can only take place after the action has taken place, together with the inert quality of the aether, are the cause for the reduction of the exercised force. In *Figure 14* it is shown how the force decreases as speed increases.

With aether as a medium, the acting forces on the particle are transmitted by the aether itself. The force pulls and pushes the particle. When the particle is not moving, *V=0*, all the force and energy of the field is ceded to the particle in the form of kinetic energy. When the charge has a speed, the inert quality of the aether is responsible for the fact that not all of the energy delivered by the electric field is transferred as kinetic energy to the particle.

The effects of the inertia of the aether to the force which the field can exert, is shown in *Figure 14.* The surface of the dark circle still contributes a force, and transfers energy to the charge by increasing the speed $V$. The remaining electric field does not contribute anymore to the acceleration. This force and associated energy are "lost". "Lost" does not mean that this energy has disappeared.

When I was in primary school we shot paper balls in the classroom with a rubber band. Sometimes the wad of paper fell from the rubber band. Then no energy is transferred from the rubber band to the paper wad. The energy of the "field" is then "lost", not transferred to the speed of the the wad. The "lost" energy is manifested as vibrational energy of the rubber band. This is similar to the energy of the electric field that is lost. The charge has moved before the discharge energy of the electric field can be transferred.

*Figure 15* shows how energy is "lost". The law that reaction can only follow action, explains why the charged particle can not be accelerated to the speed of light. The particle moves with the speed $V$. After $dt$ seconds the charge moves $Vdt$ meters. A portion of the field (the elastic band that disengages from the wad of paper) is too late. The force/energy of the dark colored part of the electric field can not wield a force and transfer energy to the particle. The charge is already gone when this part of the electric field discharges. Energy can not be lost as the law of conservation of energy, forbids it.
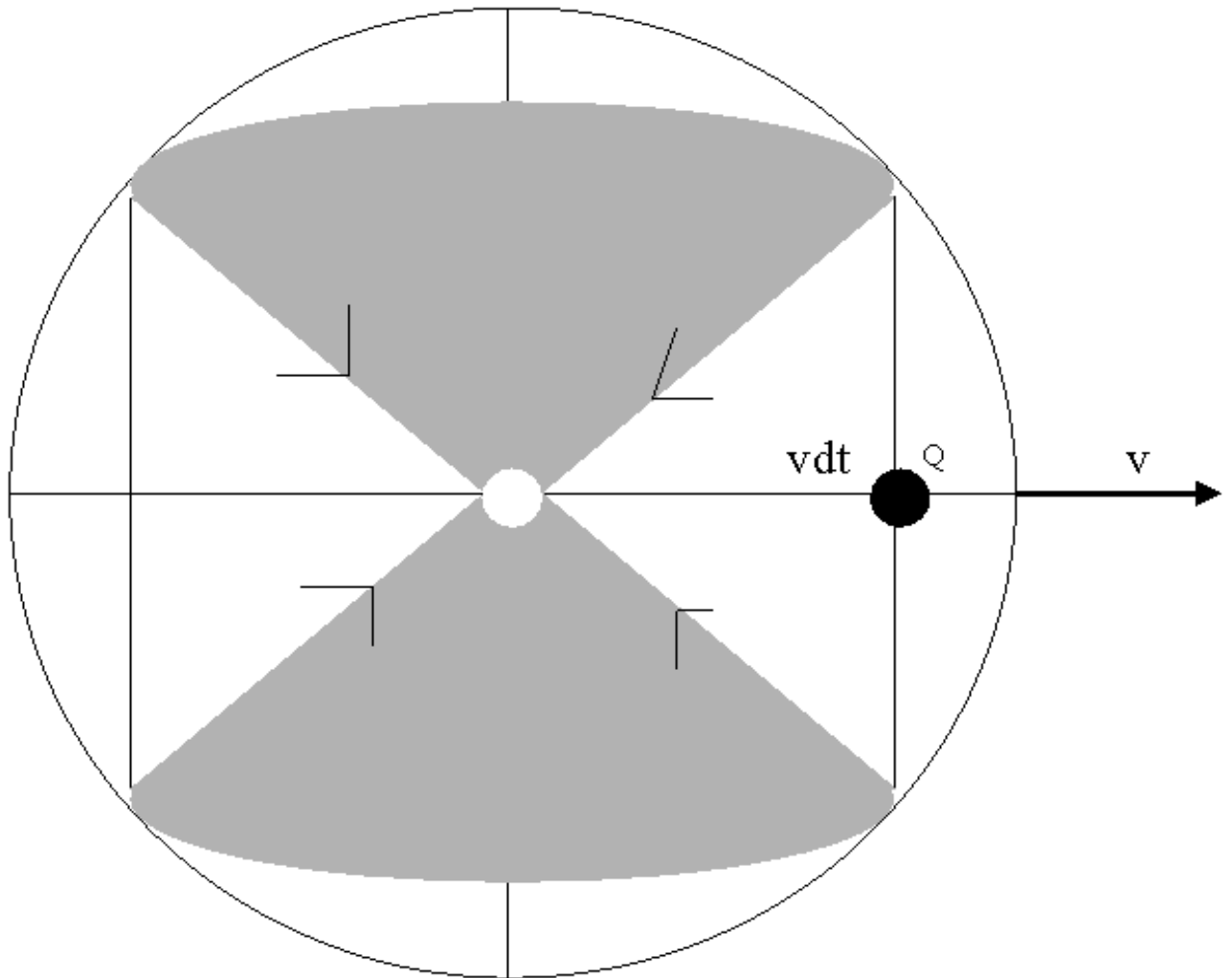
*Figure 15: The inert quality of the electric field and "lost" energy*

The charge has already passed when this part of the electric field unloads its energy. With aether space is not absolutely empty. The charge is gone, but there is still aether, point volumes, where the energy of the field discharges. The "lost" energy of the dissipated electric field excites the aether behind the particle. The relaxing electric field passes the energy to the aether in the form of electromagnetic vibration (radiation), at the spot where the charge was situated *dt* seconds earlier.

Electromagnetic energy travels at the speed *c* and will therefore overtake the charge. The particle moves at speed *V*, which is always lower than the speed of light *c*. The radiation overtakes the charge/particle and can be absorbed by the charge. This energy brings the particle into vibration. The energy "lost" does not accelerate the particle and presents itself as electromagnetic energy of the excited particle. This radiation energy is known in high energy physics as synchrotron radiation.

Currently science sees synchrotron radiation as kinetic energy which the fast moving particle cedes when the charge is deflected from the straight path. Mainstream science supposes that the electric field transfers all its energy to the particle in the form of kinetic energy. With aether, the explanation is different. The "lost" energy of the electric field transferred to electromagnetic energy, catches up with the particle and brings the particle into electromagnetic vibration. This vibration energy is disposed of by the charge when the particle is deflected, since the absorbed electromagnetic oscillation has the momentum/ direction of the discharging electric field.

The part of the force/energy of the electric field that was "lost" manifests itself as synchrotron radiation is. The "lost" energy of the electric field yields:

$$F_v ds = (v^2/c^2)EQ ds$$

## Electromagnetic energy and the aether

The previous chapter presented how an electric field can manifest itself in the aether. With aether, electromagnetic energy must be seen as excess energy emitted by the aether or the particles.

Synchrotron radiation, with aether, is the discharge of an electric field where the energy is not transferred to a charged particle in the form of kinetic energy. To clarify the concept of electromagnetic energy with aether, we assume a negative electron. Around the charge -e of the electron the positive charge in the point volumes, attracts the positive charge in the surrounding point volumes and repels the negative charge. This is schematically shown in *Figure 16*.
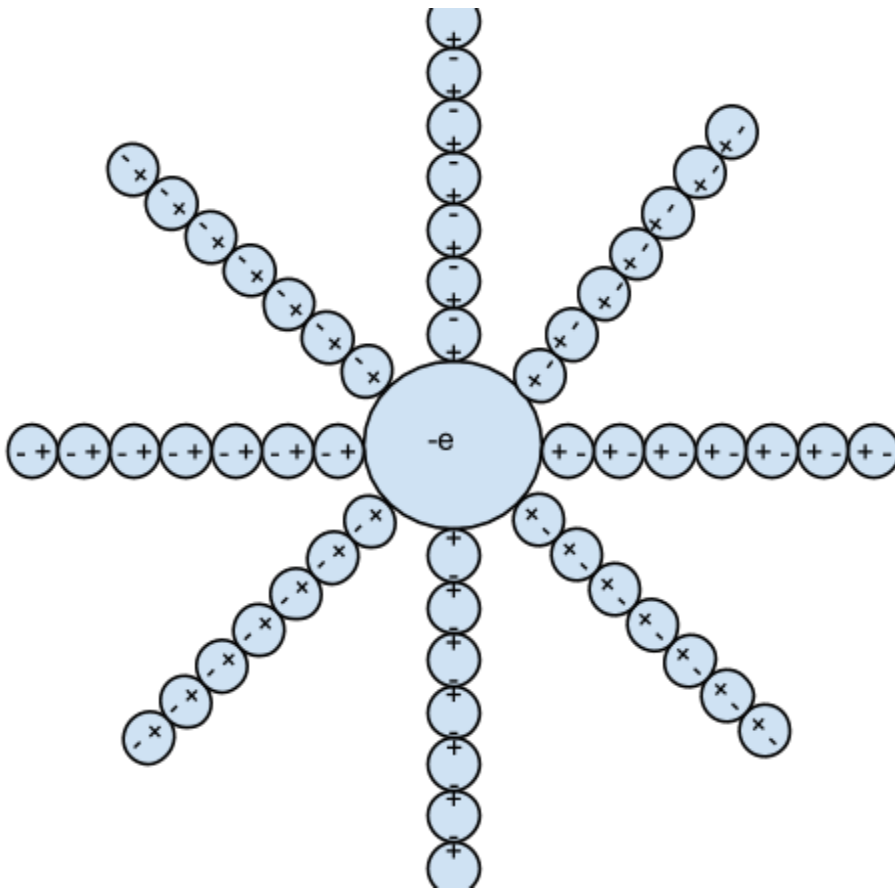


*Figure 16: Charge separation in the aether around an electron*

A high energy photon can split into a negative and positive (= positron) charged electron. The electron, as schematically shown in the above figure, has just been

created and polarizes the aether with the speed of light. In point volumes adjacent to the electron in the aether, the positive charge is attracted by the electron while the negative charge is repelled. The field around the created electron propagates with the speed of light $c$. The energy of the electric field represents the energy of the charge of the particle.

The electric field is maintained by the charge of the electron. The electric field can only exist, be stable, as long as the charge is present. Suppose that the electron suddenly disappears without a trace. The energy of the charge is still present in the aether, but the power that established and keeps the charge separation has disappeared. The electric field around charge -$e$ collapses with the speed of light $c$. The discharge of the electric field is opposite to the situation after the electron is formed. The discharge of the electric field is aimed at the point volume located where the electron could be found. The electron is gone, but there are still point volumes. The dissipative electric field is concentrated at the point volume where the electron was situated. The discharging electric field excites the point volume into an electromagnetic vibration.
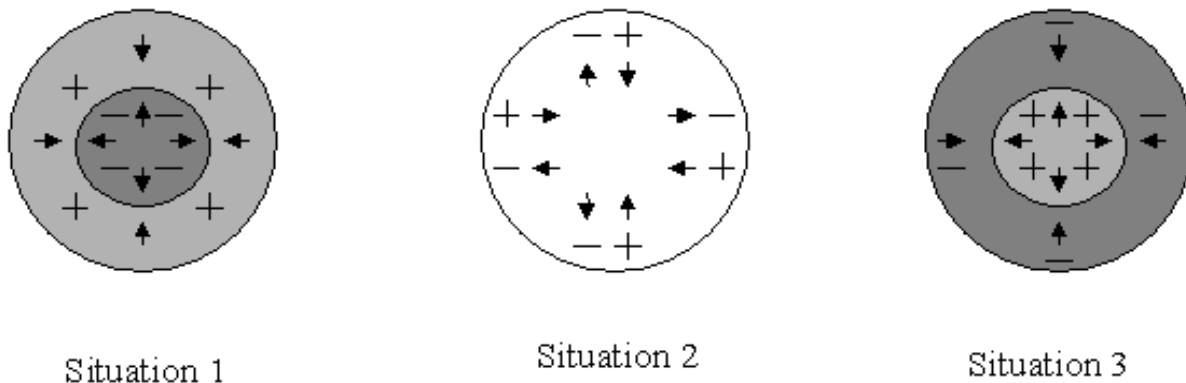


Situation 1          Situation 2          Situation 3

*Figure 17: Schematic representation of an electromagnetic vibrating point volume*

The electromagnetic vibration of the point volume can be imagined as follows: in situation 1, the positive charge is located on the outside of the point volume and the negative charge on the inside. In totality, the vibrating point volume is neutrally charged. The positive charge and negative charge in the point volume attract and are accelerated to each other. In situation 2 both opposite charges pass each other. The charges in the point volume overshoots to situation 3, where the negative charge is on the outside and the positive charge on the inside. The process is reversed and after the charges pass each other, situation 1 occurs again; the oscillation has run through a full cycle.

The electromagnetic vibration is not limited to the one point volume. Depending on the energy of the vibration with respect to the frequency of oscillation, and the inertia of the aether with *c,* the electromagnetic vibration expands across the aether. Depending on the frequency of oscillation in the central point volume, the charge separation in the adjoining aether is limited over space. The higher the frequency of oscillation, the shorter the volume with respect to distance other point volumes are polarized and are part of the electromagnetic oscillation.

This is because the central point volume, where the energy of the vibration is concentrated, oscillates with a higher frequency when the energy of the oscillation increases and therefore the oscillation can not spread further than the frequency allows the aether to be polarized.

The above argumentation does not presume to claim that a stationary electromagnetic vibration, as described, actually exists. The aim is to show that with aether, with certain properties, physical phenomena can be described. You might think: "Where should this paper lead? What is the meaning of all this?"

To be able to answer this question you must have patience. The analysis leads to insights that reveal the secrets of quantum mechanics. It's not just a speculative story. A sound scientific basis is waiting for you, but before this can be explained, you must first become familiar with the physical properties aether has to possess; as imposed by empirical observations.

## Magnetic energy

In the previous chapters we discussed the properties the aether must have in order to be responsible for physical phenomena, such as the electric field and electromagnetic radiation. Deduced, is that aether should have certain characteristics to be able to allow an electric field. The aether must be made of positive and negative charges and must be encapsulated in an entity we call the point volume.

Magnetic energy must also be plausible within aether. A charged particle induces an electric field in the aether. This charge separation, the electric field, is permanent as long as the charged particle exists. Consider now a charged particle that moves relative to the aether. The electric field alias the charge separation in the aether is permanent. When the charge moves the induced electric field, the charge separation, is entrained by the charge. The induced separation of negative and positive charge in the point volumes is dragged when the charged particle moves in the aether. This dragged aether is what we call the magnetic field and represents magnetic energy.
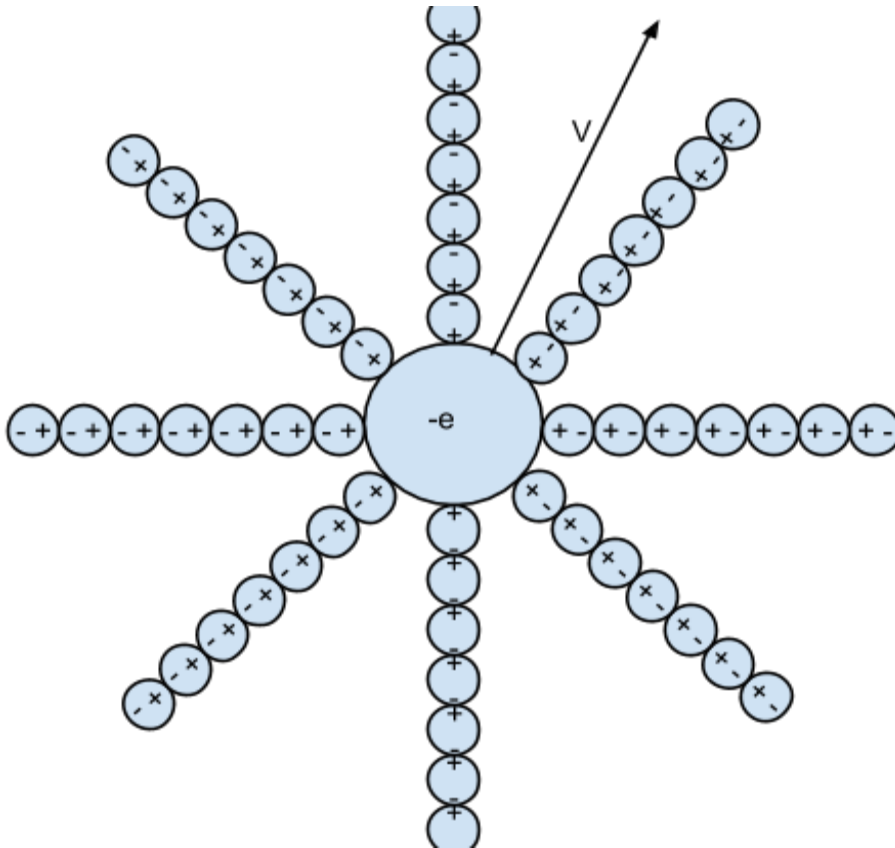


*Figure 18: The magnetic energy of a moving charge*

In the previous chapters, it is assumed that the positive and negative charges are trapped in the point volumes, otherwise a stable electrostatic field is not possible. The properties hitherto assigned to the aether are however not sufficient to explain and describe the formation of stable elementary particles such as electrons or the magnetic field. The assumption that the positive and negative charges in the point volume are locked in, can not be a fully correct representation.

The observation that electric fields are stable, implies that the aether must be locked down in an entity. Other physical phenomena indicate, however, that the aether also must be able to leave the point volume. After analysing the contradiction, that aether under certain conditions is confined to the point volume and the observation that aether also should be free in some way to be able to include the photon and the electron, yet allow it to be described, results in the realization that particles with mass must have specific characteristics.

## The electron

We mentioned that the positive and negative charge of the point volume can separate during an electromagnetic vibration of the neutral point volume. The observation that a high energy photon can split into an electron and a positron indicates that the charges in a point volume can separate indefinitely. Because the aether must be consistent with the observations we must therefore assume that a point volume can definitively split into a negative and positive volume. Furthermore, under certain conditions, the positive and negative charge must be able to leave a point volume.

You might wonder what the use is of all these speculations concerning "aether". For the moment that is for you, the reader, incalculable. However when all logically imposed assumptions lead to empirically observable and verifiable properties, then the deduced properties of the aether, at least partly, are confirmed experimentally. A little patience please!
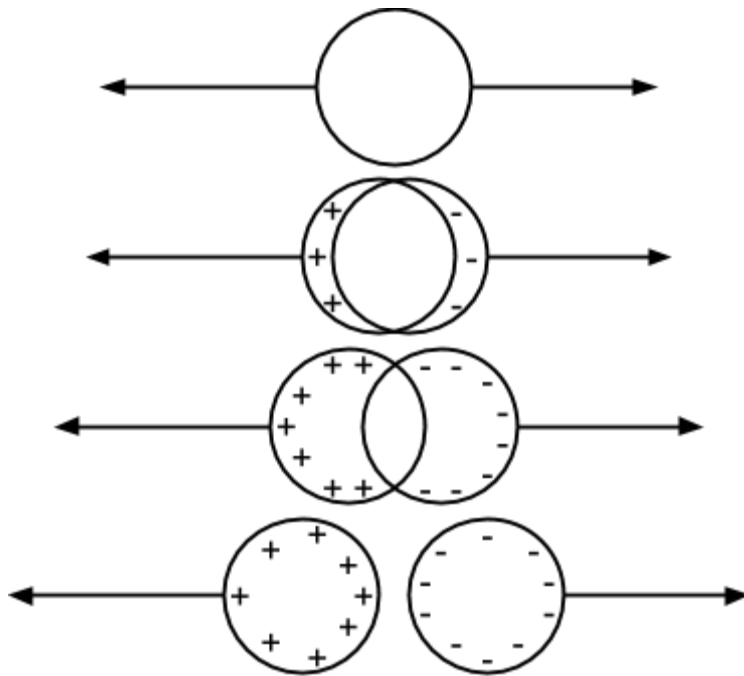


*Figure 19: Vibration and complete separation of the point volume*

Imagine a vibration of negative and positive aether in the point volume (*figure 19*), where during the vibration the positive and negative charge become completely separated. The separated negative and positive point volume have equal but opposite

charge.

Although we deduced that the negative and positive aether must be encapsulated in an entity we called "point volume" to be able to describe a stable electric field, we also had to conclude that aether must be able to leave the point volume to describe the magnetic field. This inconsistency, the contradiction of encapsulation and the ability to leave the point volume, must be answered.

When the oscillation energy of a point volume is large enough to separate the point volume completely into a negative and positive volume, the assumed ability of the aether to leave the point volume indicates that the separated charges will be annihilated. The separated charged volumes will attract and absorb, by means of the electrostatic force, the charge from the adjacent point volumes. The charges of the separated volumes will be annihilated and spread over space with the speed of light.

A separated point volume is therefore, with the necessary assumed physical properties, not stable. To be able to describe stable separated point volumes and particles, the charged volumes must possess spin energy. In *figure 20* we drawn a negative point volume with rotation energy. This rotation energy is pure magnetic energy; a movement of aether. Suppose now that the negative charged point volumes attract positive aether from the adjacent aether. The positive aether is absorbed and neutralizes the negative charge.
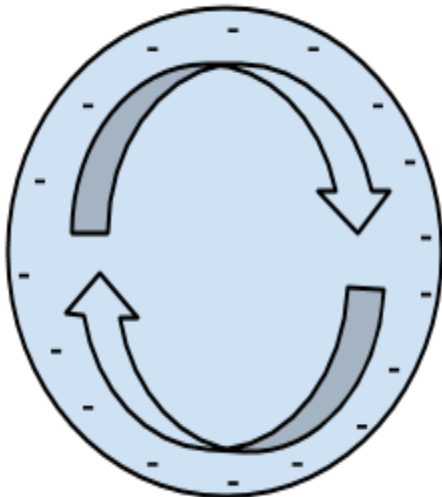


*Figure 20: The separated rotating negative point volume*

The adsorbed positive aether not only neutralizes the negative charge, but is also drawn, by means of the electrostatic force, into the spin. The absorbed positive aether, ceded by the surrounding point volumes, makes the adjacent point volumes partly negative charged. The now partly negative charged surrounding point volumes will attract those lacking positive charge from the surrounding aether and draw the absorbed positive aether into a magnetic spin. This process of ceding of positive charge by adjacent point volumes continues. The rotating, spinning negative volume expands further and further.
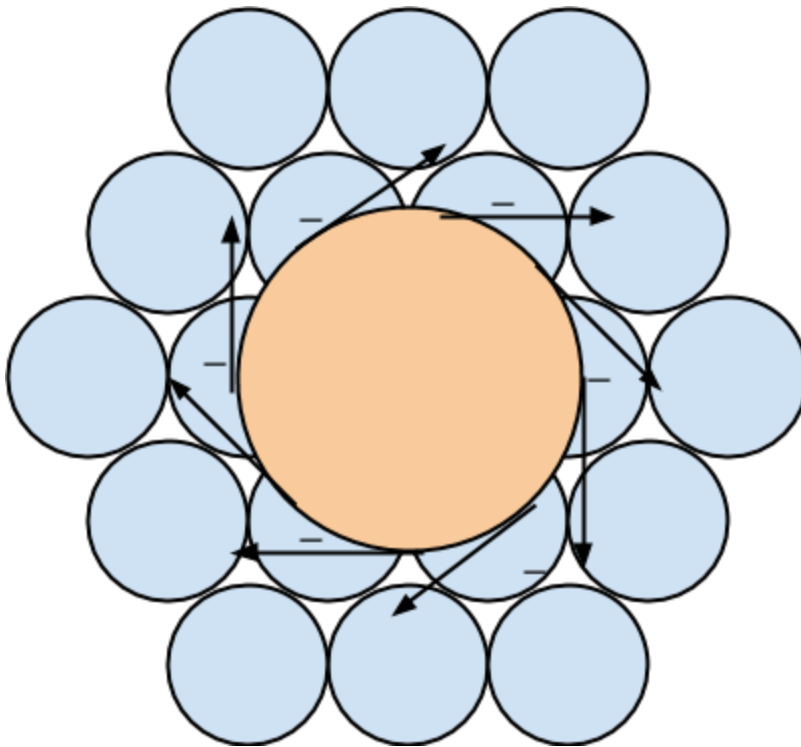


*Figure 21: The expanding rotating negative point volume*

The expanding negative charge is shown schematically in the figure above. On the outside of the spinning disk, the speed of the spinning aether is the highest. If the energy of the spin is large enough to achieve the speed *c* at the end of the rotary disk, then the negative spinning aether is not capable of continuing to entrain positive charges from the surrounding volumes. The inert quality of the aether, the speed of light *c*, is again the restrictive factor.

The inert quality of the aether, the speed of light *c,* prevents the adjacent point volumes to deposit positive aether. The electrostatic force is no longer capable of dragging

aether. The electrostatic force responsible for contact between the spinning disk and the surrounding aether is lost. The aether at the end of the profile is now spinning with the speed of light. The negative charge on the outside of the spinning volume can no longer drag positive charge from the adjacent point volumes. The negative charge of the point volume has attached itself to the surface of a sphere that rotates with the speed of light at the end of the profile.
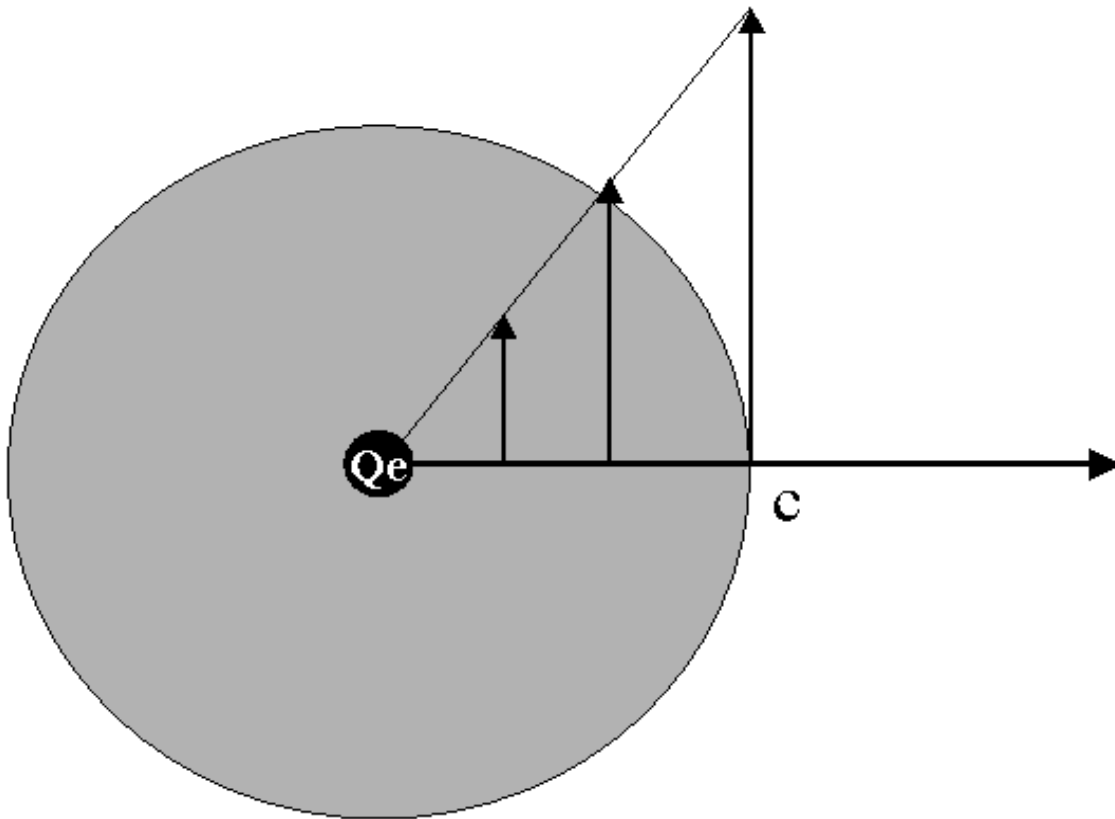


*Figure 22: Rotating and expanding point volume*

Calculating the magnetic energy of the spinning disk, moving at the speed of light *c* at the end of the profile, and the Compton-radius, the classical radius of an electron, then the magnetic spin energy equals to:

$$W_m = \mu_0 e^2 c^2 / 8\pi R_c$$

The negative charge of the separated volume is equal to the negative charge of the electron *-e*. This charge is positioned on the sphere with radius *Rc,* the Compton-radius. The electrostatic energy of a sphere with charge *-e* and radius $R_c$ is experimentally determined by:
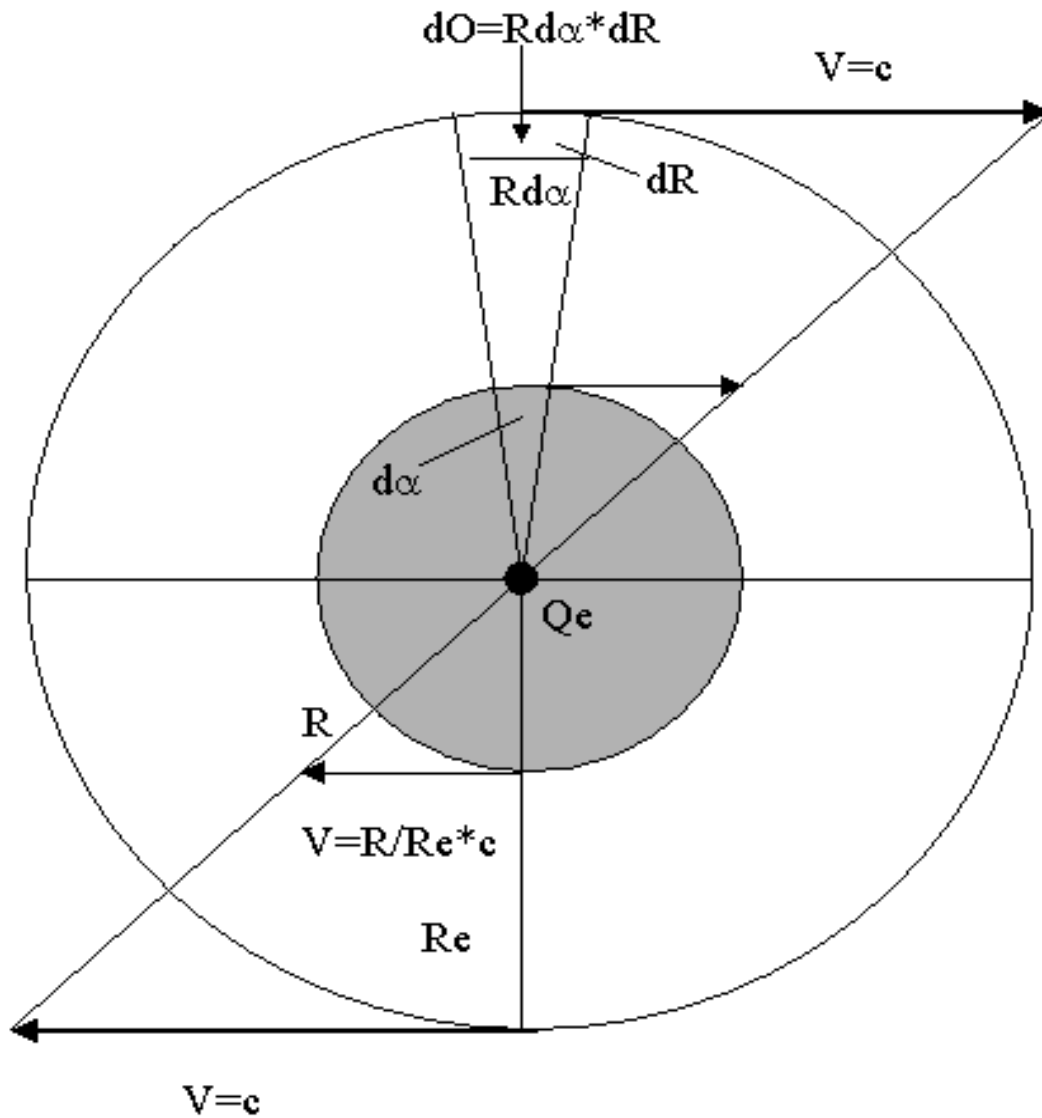
$$Wp = e^2/8\pi\varepsilon_0 R_c$$



*Figure 23: The electron spinning with the speed of light*

The sphere spinning at the speed of light with charge -*e* and radius *Re* has a total energy *Wt* equal to the magnetic energy *Wm* and the electrostatic energy *Wp*.

$$Wt = \mu_o e^2 c^2/8\pi R_c + e^2/8\pi\varepsilon_0 R_c$$

Is it a coincidence that the derived total intrinsic energy of the electron $W_t$, in the above formula, is exactly equal to the total energy /mass of the electron?

The above derived formula for the electron describes many aspects of the particle; the dimensions, the charge, the electrostatic energy, the spin energy and stability.
The energy of the electron is equally distributed among the two degrees of freedom the electron possesses; magnetic spin energy and electrostatic energy. It is no coincidence that the energy of the electron is evenly distributed over the two degrees of freedom. This is in accordance with the equipartition principle.

The equipartition principle is the observation, based on experimental information, that in thermodynamics the energy of a system is equally distributed on the available degrees of freedom. The illustrated electron has two degrees of freedom to store energy.

The electrostatic potential energy of the electron can be seen as energy that is present in the particle which wants to decrease. In general, we can say that potential energy has the urge to degrade to dynamic energy. A plane always tends to crash. This potential energy will, when the plane crashes, be converted into dynamic energy, the speed of descent. The potential energy of the electron, the electrostatic energy, also seeks degradation to magnetic energy. An electrically charged sphere tends to decrease its energy level by expanding.
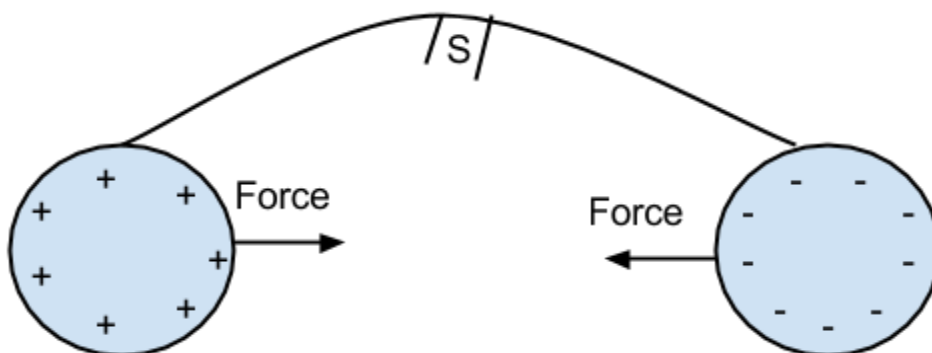


*Figure 24: The potential energy of electrically charged spheres*

In the figure above, the positive and negative charged sphere both possess potential electrostatic energy. This potential energy is released when the charges are annihilated. The potential energy in the illustrated electric circuit discharges when we short circuit.

When we switch S to open, the potential energy of the two spheres disappears. That nature always pursues the lowest possible energy level is something we see everywhere around us. Hot food cools, a ball rolls down, a battery drains and a positive and negative charge attract each other to reduce the energy.

The charge of both spheres can not level out (*Figure 24*) without contact or without an electric wire. The potential energy of the two charged spheres also decreases when the spheres expand. The electrons on the negative sphere want to be as far as possible away from the other electrons. The potential electrostatic energy wants to expand the sphere, but can not because the sphere resists the expansion.

We argued that when the expanding spinning negative volume reached speed *c*, at the end of the profile, the adjacent aether can no longer hand over its charge because the electrostatic force is no longer able to do so. The electron, a spinning bulb with radius $R_c$, wants to expand further even though no charge can be absorbed. The lack of absorption of charge does not imply that the charge of the electron does not want to continue expanding to decrease the energy level.

The spinning charge of the electron still strives after a lower energy level. The larger the bulb, the less dense the charge distribution is, the lower the energy level. In short, the stopped aether transfer does not stop the expansionism of the charge of the electron.

What then ensures that the electron will expand no further? It is the magnetic energy of the spin. Outside the electron the charge separation, the electric field, spins along with the spinning, charged, spherical electron. The induced magnetic energy in the aether around the electron was created when the spinning negative point volume expanded to an electron.

The rotation energy of the aether outside the electron, the spin, is allied with the charge of the electron. The electric field energy of the electron is connected to the negative charge. Charge and spin of the electron are entangled. The charge can not expand further because the magnetic spin energy does not allow it.

Mathematically, this is evident from the previously derived total energy of the electron.

$$Wt = \mu_o e^2 c^2 / 8\pi R_c + e^2 / 8\pi \varepsilon_0 R_c$$

In *Figure 25*, below, it is demonstrated schematically that the spinning charge

separation outside the electron is connected to the charge of the electron. In the above equation of total energy, we see that the magnetic spin energy (first term) has to decrease when *Rc* increases. When the electron expands further, the magnetic energy becomes less. So for the electron to be able to expand further the redundant magnetic spin energy must be ceded.
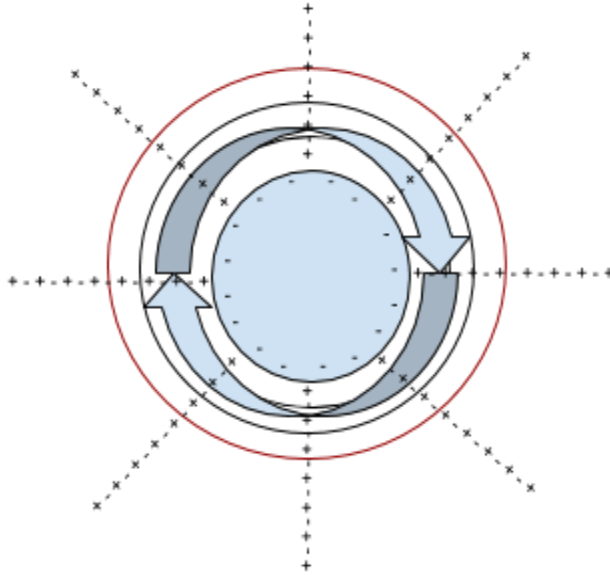


*Figure 25: The spinning aether surrounding the charged electron*

For the electron to expand, the superfluous spin energy must be transferred. However we see that the second term of the equation for the total energy of the electron, the potential energy, also decreases when the electron expands. So the expanding electron can not lose the energy allowing it to expand. The charge is trapped. The electron can not explode because both energies, magnetic and potential, decreases when the particle further expands; the magnetic and electrostatic are trapped. The proposed basic and very simple electron doesn't need to possess an internal structure to prevent it from enlarging.

It may be difficult to imagine how this is physically realized. However, there is a natural phenomenon, a phenomenon that is still a mystery, and that is, ball lightning. Ball lightning is the big brother of the electron in our macro-world.

The spinning magnetic field around the ball lightning traps the charge. Its magnetic field may lose energy by magnetic induction in objects near itself. Magnetic energy leaks away, decreasing the spin energy over time and the ball lightning eventually explodes. The energy of the electron spin is incapable of being transferred to another system, and

therefore the electron is extremely stable.

## The photon

Within aether the electron can best be regarded as a very small ball lightning, wherein the charge is held captive on a sphere with radius *Rc;* the classical electron or Compton radius. The magnetic field of the electron is the spinning electric field outside the electron. This magnetic energy keeps the charge trapped. The spin and electrostatic energy of the electron are entangled and together, constitute the particle.

The spin speed of the electron at rest in respect to the aether is externally equal to the speed of light *c.* When the electron is put in motion by an electric field, it moves with respect to the aether. When in motion relative to the aether, the situation arises that the spinning charge of the the electron exceeds, in relation to the surrounding aether, the speed of light *c.*



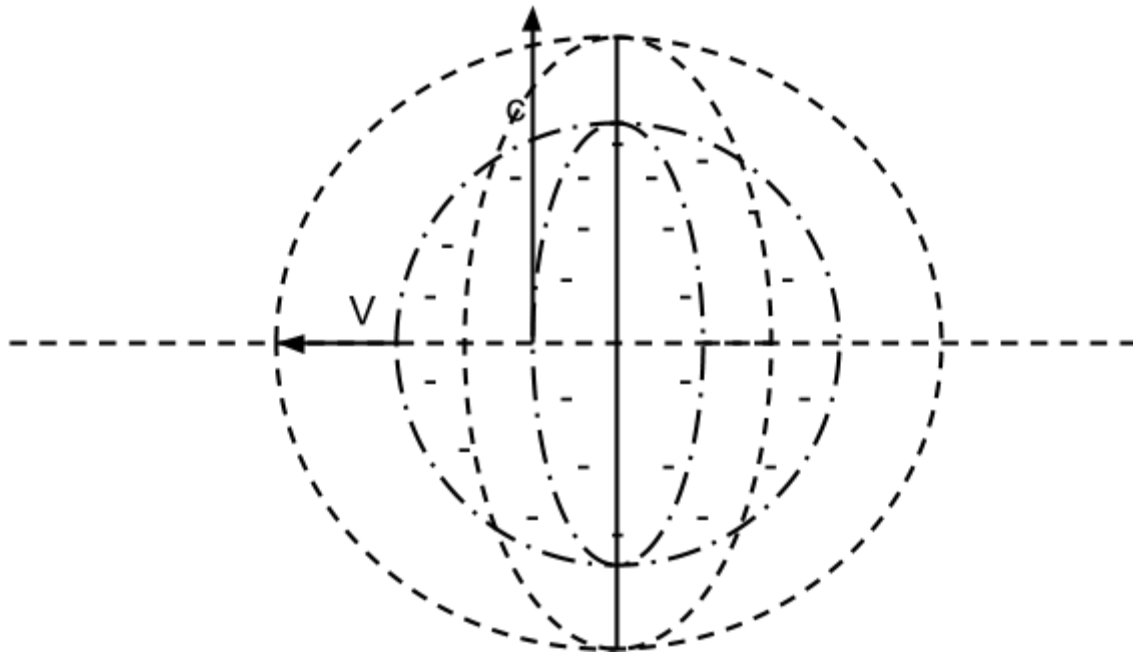*Figure 26: The with V moving and therefore shrinking electron*

The energy of the spin of the electron is fixed. The speed of the spinning charge on the outside of the electron in respect to the aether is *c.* When the electron moves with speed *V* relative to the aether, the speed of the charge on the outside of the electron will lose contact because the speed relative to the aether will be c+V.

50

The rotation speed inside the electron decreases proportionally to the radius (*Figure 23, 26 and 27*). The electron cannot expand, but can decrease in size. The size of the electron decreases proportional to the speed of the electron until the shrinking of the electron has compensated for the speed *V*.
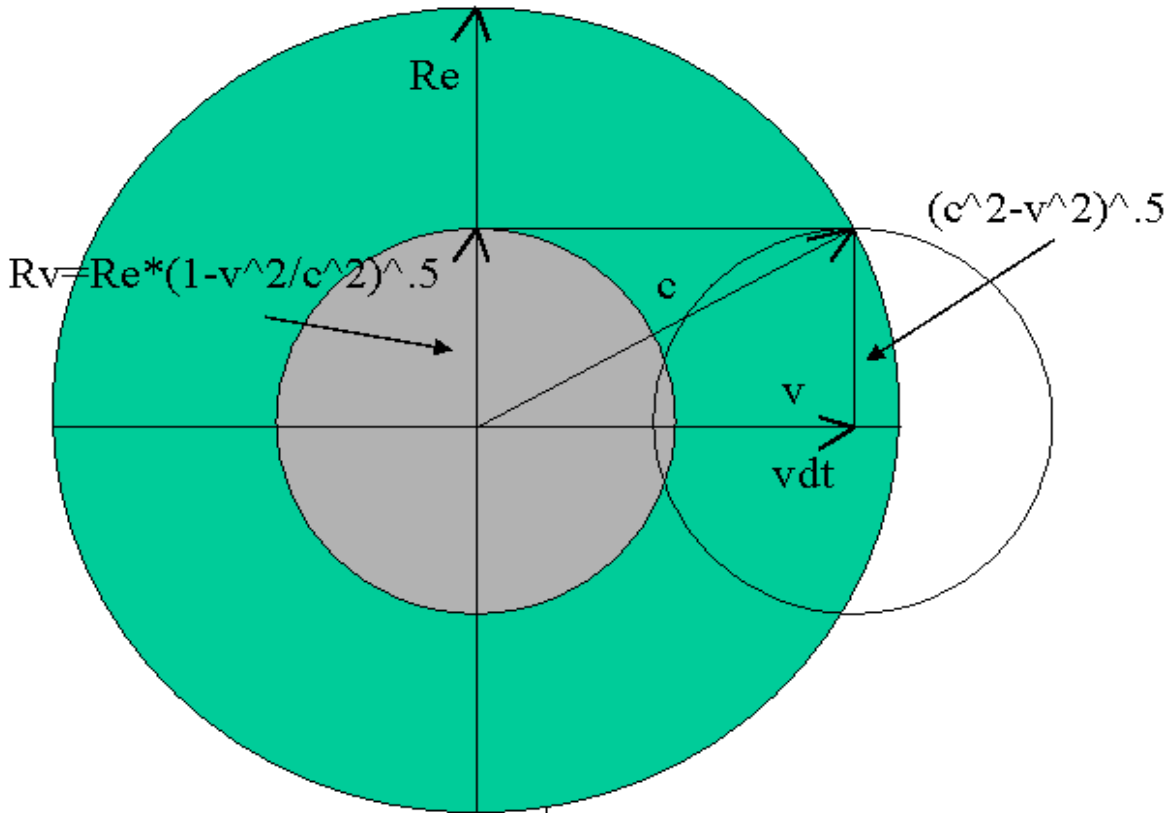


*Figure 27: The contraction of the electron in motion relative to the aether*

With the motion of the electron, the total energy increases with the kinetic energy. When the electron is in motion, it has a total energy that is equal to the intrinsic energy of the electron, namely, the magnetic spin plus electrostatic energy of the electron, and the kinetic energy. The total energy of the electron increases as it moves. Where does this energy of the electron originate?

To make things clearer, we present below the total energy $W_v$ of the electron moving with speed *V:*

$$W_v = \mu_o e^2 c^2 / 8\pi R_c + e^2 / 8\pi\varepsilon_0 R_v + \mu_o e^2 c^2 (R_c - R_v)/8R_c R_v$$

The first term is the magnetic spin energy. This energy remains unchanged when the electron accelerates. The second term is the electrostatic potential energy of the charge which increases when the radius of the electron decreases. The charge of the electron, being now positioned on a smaller sphere *(Rv<Re)* will represent more energy (second term)*. The last term is the magnetic energy that the electric field of the moving charge induces in the aether.

It should be noted that the increase in potential energy of the charge by the decrease of the radius of the electron, is equal to the magnetic energy of motion. Both forms of energy, potential and dynamic or electrostatic and magnetic, that the electron possesses are still equal. When the acceleration of the electron is finished, the electron will remain in balance with the aether as long as the electron is moving with velocity *V* in respect to the aether. The size of the electron remains in balance with the aether.

The decrease in the interaction between electron and aether continues to apply as long as the electron moves at *V.* If the electron slows down, it will enter into an electromagnetic vibration. Imagine that the electron moves at *V.* The electron collides and comes to a standstill. The interaction with the aether increases and the shrunken electron, with radius *Rv,* can expand. The potential energy is now too large for the magnetic spin energy to keep the radius of the electron at *Rv*. The electron dilates further.

The spin energy is sufficient to confine the charge on *Re*. The electron expands to *Re.* Now the spin energy is in accordance with the radius, but the electron expands further to *Rm* (*Figure 28)* because the decreased potential energy of the expanding charge is converted into magnetic energy. Due to the inertia of the system, the electron expands to *Rm,* after which the magnetic spin energy, now too large for *Rm,* compresses the charge again. The shrinking overshoots the radius *Re* to *Rv,* and the electron expands again. The abundance of potential electrostatic energy of the electron when stopped, is converted to oscillation energy.

The above-described oscillation relates to half of the kinetic energy of the electron. The other half, the induced magnetic energy, due to the charge separation and the motion of the electron catches up. The magnetic, kinetic energy reaches the vibrating electron when it is already expanding. Further speculation how the process varies is not useful. What should be noted, is that the magnetic energy of the electron has an impulse in the direction of motion of the electron before it was brought to a standstill. The vibrating electron causes an electromagnetic vibration in the aether.

The magnetic energy, with momentum in the direction of motion, drags the electromagnetic vibration with it. This process results in the ejection by the electron of a photon, in which the vibration energy of the excited electron is the oscillation energy of the photon. The magnetic energy of the electron represents the "kinetic energy" of the photon in the direction of motion.
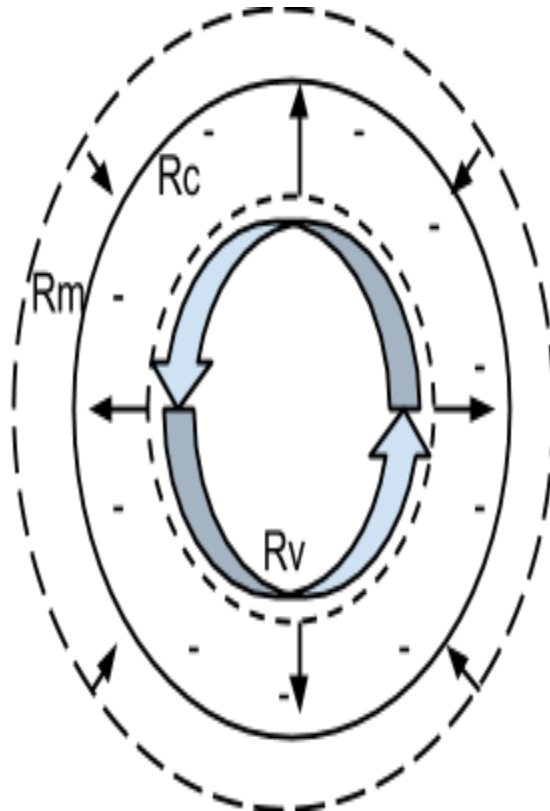


*Figure 28: The vibrating, excited electron*

The above argumentation is in no way scientific. How the aether precisely handles energy and photons in particular, can possibly one day be specified. The aim of the thesis is to show the qualities the aether must possess to be able to physically be responsible for phenomena. What I tried to accomplish here, is just a plausible explanation for physical processes. In no way do I pretend to present an exact accounting of the phenomena.

You must understand that I am now in the 3rd week of my sabbatical and I'm considering possibilities the aether offers for explanations of physical phenomena. Only later, when it becomes clear that the demonstrated capabilities of the aether were completely ignored by scientists, did I look for scientific evidence to support the story. This is later presented to you as the main dish.

## Time dilation

Time dilation is the observation that for fast-moving unstable particles, time seems to go slower than for particles at rest. This phenomenon is seen as very strong confirmation of the Special Theory of Relativity. According to scientists, the observed longer lifetime is the result of the slower ticks of a moving clock compared to a stationary clock.

Time dilation is observed in cosmic radiation particles such as μ-meson. The μ-meson has a half-life of 2.2 micro (millionth) seconds. This means that every 2.2 millionth second the number of mesons are halved by disintegration. Mesons, which penetrate the Earth's atmosphere are observed at 2000 meter altitudes. On average, there are 568 observed mesons per hour at that height. The speed of the mesons is nearly the speed of light. This means that it takes a meson 6.6 microseconds to travel from 2,000 meters altitude to sea level.

With a half-life of 2.2 microseconds one can expect that from the 568 mesons at 2000 meters there will be 568/8 mesons, or about 71 left over to be observed at sea level. The travel time of 6.6 microseconds is 3 times the half-life. The number of mesons will be reduced by half, 3 times before the remaining mesons reach sea level . The number of mesons observed at sea level is 412, almost 6 times as many as could be expected on the basis of the half-life. Science argues that, in the context of the Special Relativity Theory (SRT), this is an experimental confirmation that time is relative.

The scientific explanation given by SRT for this observation is that the mesons moving with a very high speed towards the Earth experience a slowing of time, according to the Lorentz-factor $t' = t\sqrt{1 - v^2/c^2}$ .
To observe 412 mesons, out of 568, at sea level implies, according to SRT, that the speed of the mesons is about 0.985 times the speed of light. Is this an experimental confirmation of the Special Theory of Relativity?

From the perspective of an aether, another explanation is much more logical. The explanation of SRT, by means of time dilation, assumes that the mesons that are stopped enjoy the same lifetime as the undetected mesons, which travel to sea level.

Given the perspective of the previous chapter, a high-energy particle that is brought to rest can be expected to absorb at least part of the kinetic energy it had originally. The very unstable meson, with only a half-life of 2.2 microseconds, that is forced to rest, enters into an excited state.

The electron is extremely stable and will release the excess energy by means of a photon when it is forced to stop. The meson is unstable. The kinetic energy of the meson that travels with 0.985 times the speed of light is enormous. So much so, that the kinetic energy of the meson is almost enough to create 6 new mesons! Once a highly unstable charged particle such as the meson with an immense amount of kinetic energy is brought to a standstill, one can expect with an aether, that at least part of the energy is transferred to the unstable particle in the form of vibrational energy, such as discussed in the previous chapter.

The disintegration time of a radioactive element, in aether, depends on the overflowing oscillation energy the particle possesses with respect to the most stable situation. The most stable situation is one where there is no excess of thermal energy present, ie at 0 degrees Kelvin, the absolute zero temperature of approx. -273 degrees Celsius.

The meson is raging through the aether, and as long as it can move freely it is in equilibrium with the aether. The half-life of an unstable particle will decrease when the thermal energy, the excess vibration energy is increased. When forced to a standstill the kinetic energy will be (partly) transferred into the form of vibrational thermal energy. The thermal energy of the meson with such extreme speeds will certainly increase when the meson is forced to stop in aether. The conclusion that the observed increase in half-life is caused by the relativity of time and space is premature. It is much more likely that the half-life of the meson, which travels undisturbed through the aether, is considerably greater than the half-life of the meson that is forced to stop.

It is plausible that the lifetime of an unstable radioactive particle decreases under the circumstances outlined. It can be expected that the radioactive decay is affected by the excess vibrational, thermal energy. The disintegration constant $\lambda$ of a radioactive particle can be expected to be dependent on the thermal energy as follows :

$\lambda = \lambda o\ (Ed + Ek) / Ed$

In the above equation $\lambda o$ is the disintegration constant at absolute zero. *Ed* is the energy necessary for disintegration and *Ek* the transferred kinetic energy in the form of thermal energy. The temperature dependence of normal radioactive decay will be difficult to measure, because the thermal energy under normal condition is much, much smaller than the required disintegration energy.The kinetic energy of the meson is extremely high, making it very likely that the increased temperature of the meson influences the disintegration constant $\lambda o$.

The interpretation of science based on SRT is that a meson that is forced to stop is still as stable or unstable as it was before. An understanding that seems anything but likely with aether.

## The proton and neutron

The story, so far, gives insight into fundamental physical phenomena. The proposed aether is fully consistent with experimental observations, and logical contradictions do not occur. That is to say, the physical and logical explanations, are plausible. This encourages us to continue. The electron circles in the atom around the nucleus. The nucleus consists of protons and neutrons. Would it be possible to describe nuclei using aether? The proton is about 1,800 times as heavy as the electron and has a positive charge.

In describing the process by which the electron is born, we have assumed that a neutral point volume can split into a spinning negative and positive volume. Expansion of the spinning positive and negative charge, gave the possibility to imagine the creation of the electron and positron. We consider again the derived formula for the electron. We notice that the intrinsic energy of the electron is inversely proportional to the radius.

$$W_e = \mu_o e^2 c^2 / 8\pi R_c + e^2 / 8\pi\varepsilon_0 R_c$$

An electron and positron can arise from a high energy photon. Conversely, when an electron and a positron merge, a high energy photon is created. Consider now an aether swarming with electrons and positrons. Imagine a situation where a positron and an electron merge, but before the photon arises, other positrons and electrons are available for fusion. Merging $n$ electrons and $n+1$ positrons, the formula for the new particle should be similar to the following:

$$W_{2n+1} = \mu_o e^2 c^2 / 8\pi R_{2n+1} + e^2 / 8\pi\varepsilon_0 R_{2n+1}$$

The radius $R_{2n+1}$, of the composite particle after fusion of $n+1$ positrons and $n$ electrons, is then $R_{2n+1} = Re/2n+1)$. The merging electrons and protons concentrate the energy more and more. The radius becomes smaller and smaller. It is not logical to assume that this merging can go on unabated, because the radius $R_{2n+1}$ is getting smaller and smaller as $n$ increases. The proposed fusion will have to stop, because the radius $R_{2n+1}$ can not logically be infinitely small.

We deduced that the aether can not be completely free and is therefore more or less confined to an entity we have called the point volume. The proposed merger will stop when the radius $R_{2n+1}$ reaches the size of the point volume. Further concentration of energy is no longer possible, or so we assume.

The proton is, like the electron, extremely stable. The charge of the proton is equal but opposite to that of the electron. The proposed merger of electrons and positrons come to an end when the energy of the *n +1* positrons and *n* electrons are concentrated in the point volume.

$$W_p = \mu_o e^2 c^2/8\pi R_p + e^2/8\pi\varepsilon_0 R_p$$

When we enter into the above formula, the total energy and the charge of the proton, we calculate the radius of the imagined proton *Rp* at *1.535.10⁻¹⁸* meters. The calculated radius of the presumed proton is the first indication relating to the dimension of the point volume.

A neutron is not stable. It expires on average in 900 seconds into a proton and electron or a positron and an antiproton. Let us imagine that the merger process of electrons and positrons above is not ended, but that after the proton has arisen, one more electron is fused and the neutron arises. The fusion of protons and electrons is a reality in a supernova explosion, when a neutron star arises. The formula for the total energy of the neutron becomes:

$$W_n = \mu_0 c^2 e^2/8\pi R_n + (R_n\mu_0 c^2 sin^2(2\pi vt) + R_n cos^2(2\pi vt)/\varepsilon_0)e^2/8\pi R_n^2$$

The first term is the energy of the neutron spin and the second term represents the oscillation energy of the neutron. We assume that the neutron energy is equally divided between the available degrees of freedom, namely spin and oscillation. Then we calculate the radius of the neutron and obtain *Rn = 1.533.10⁻¹⁸* meters.

The calculated radius of the neutron is slightly smaller than that of the proton. This is because the neutron possesses a slightly larger mass/energy than the proton. From the formula for the total energy of the neutron, its instability is perceived. The electron and proton both have a charge. When these particles are excited, the electromagnetic vibration of the charge in the aether causes the excess energy to be disposed of by means of a photon. The neutron is neutral, which implies that the neutron can not eject energy by means of a photon.

The electromagnetic vibration of the neutron and the impossibility of disposing the excess energy causes the instability of the neutron. A schematic representation of the idea which we have sketched of the neutron is shown in the following.
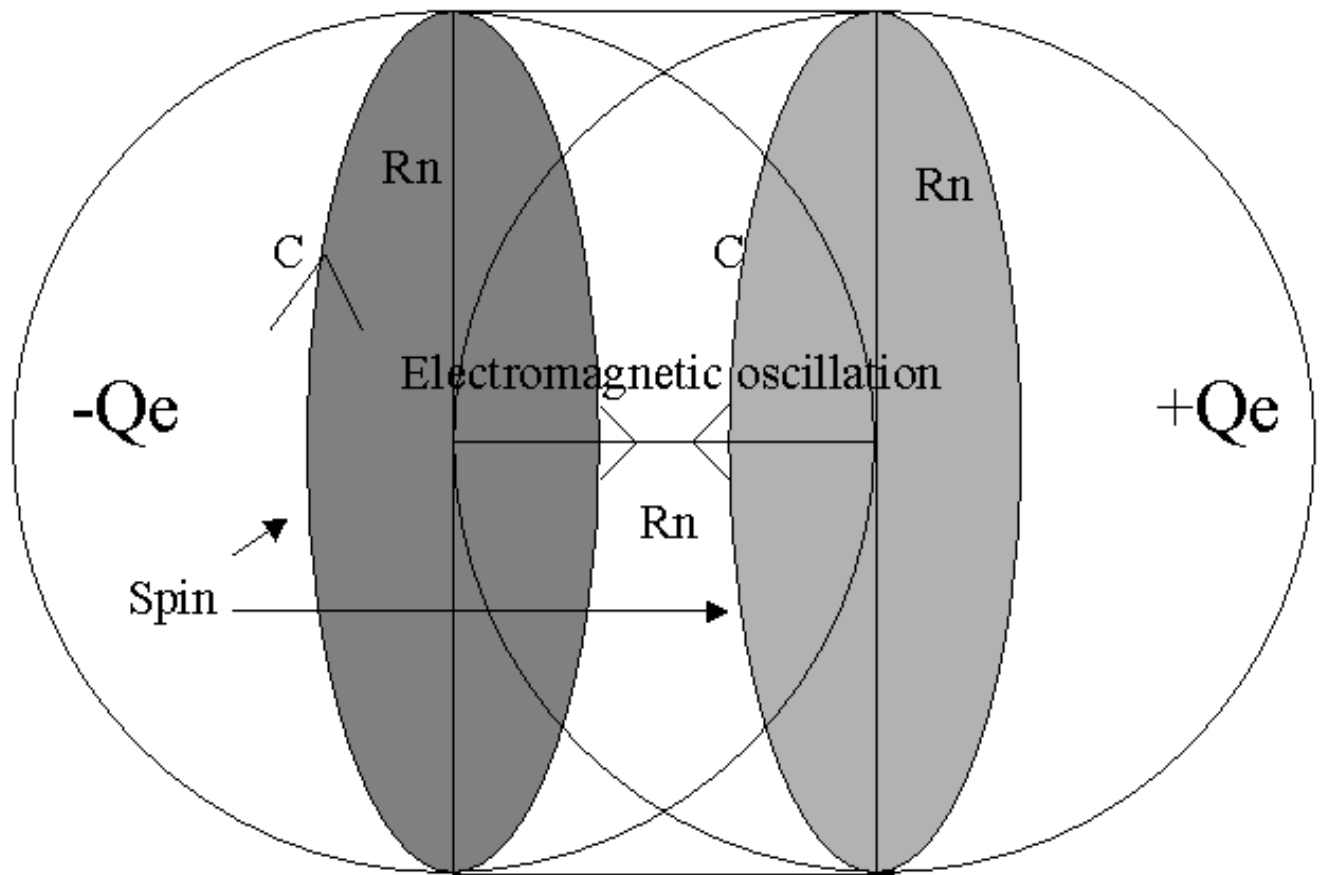
*Figure 29: The neutron*

The figure shows the situation where the negative and positive charge oscillate in the neutron, wherein the distance between the positive and negative charge in the neutron is maximum. As long as the neutron is in a stable oscillation, it will not fall apart. The neutron does not have enough energy to produce a proton and antiproton. If the oscillation in the neutron is disturbed by external influences, it is an average of 900 seconds before the neutron decays.

## Theoretical Physics and Positivism

The picture of the aether is perhaps far-fetched, but I do not think so. To me it makes sense, but I can not be called objective in this respect. The picture that is emerging is at odds with the insights of Quantum Mechanics and the Theory of Relativity.

The theoretical basis for Quantum Mechanics is the Electromagnetic Theory (EM). Later it will be shown that there are serious questions about the validity of specific assumptions in EM-theory. These assumptions are crucial for the physical validity of the science of Quantum Mechanics.

The foundations of Quantum Mechanics are derived formulas based on experimental observations. This means that scientists have been able to mathematically describe observations with great accuracy. The main advantage of an exact science like Physics, compared to Economics or Psychology, is that all experiments and observations (should) be exactly reproducible. The math can therefore in principle, exactly predict the outcome of physical experiments.

When scientists have been able to mathematically represent a particle with great accuracy, then a theory is created. I myself did not know what I heard when I was told this. A formula can be a theory without any theoretical basis as long as it describes observations. This is assumed to be a theory under the regime of Positivism.
When I heard this, I was stunned because I thought that a theory should be logically substantiated.

Why is a stand-alone formula to be considered a theory? The premise of positivism is that knowledge is only possible on the world of phenomena. Science is seen as the only valid source of knowledge and thereby only empirical observations and logical conclusions based thereon are considered valid knowledge. I can fully endorse the philosophy of positivism. The practice, however, is that there is no logic present in the mathematics leading to conclusions in the science of theoretical physics.

The mathematical formulation Einstein gives, for the relativity of time and space might seem logical but that is only because empirical observations have been interpreted incorrectly. The conclusion that no aether can exists is wrong, a fallacy. Consequently, all conclusions based on this erroneous omission, the whole theory of relativity, also the general theory where Einstein tries to explain gravity, becomes invalid.

In the science of quantum mechanics, the logical conclusions are based entirely on the empirically determined mathematical formulas. The logic used in quantum mechanics is not that of valid logical reasoning, but the "logical" implications of the empirically derived mathematical formulas. Mathematics is based on logic. When the understanding of the human mind fails, when the physics behind mathematics is no longer understood, positivism sees no problem. The philosophical logic is simply replaced with mathematical logic, because mathematics is logic.

In quantum mechanics, the philosophical logic of reasoning is replaced by the logic of mathematics. Vital for drawing valid logical conclusions from mathematical formulas is that the applied "mathematical logic" is also correct philosophically. Incorrect reasoning based on mathematics, leads to invalid inferences. An invalid inference is an argument that is not true, but is plausible. Mathematically invalid reasoning leads to incorrect inferences, to misconception. For correct inferences based on mathematical formulas, mathematical reasoning must meet the philosophy of logic.

Example of logical reasoning :

- All monkeys are brown.
- It is brown
- So it's a monkey

This is a clear example of a fallacy. It may be a monkey, but that is not certain, so the inference is invalid.

- All monkeys are brown.
- It is yellow
- It is not a monkey.

This time the conclusion is correct. It is impossible that it is a monkey.

Stellar aberration, according to science, is explained by the special theory of relativity in a valid logical mathematically way. SRT is, if this is the case, therefore empirically confirmed by stellar aberration.

The applied mathematical logic in the science of theoretical physics leading to the scientific conclusion that SRT is empirically substantiated by stellar aberration is roughly

as follows:

1. The stellar aberration depends on the angle of star with the plane of the orbit of the earth around the sun and the position of the earth in its orbit around the sun.
2. The Lorentz factor is a component of the derived formulas for the SRT.
3. The maximum stellar aberration is calculated with the Lorentz factor.
4. Stellar aberration confirms SRT

The applied logic leads irrevocably to a fallacy (4), because the dependence of stellar aberration on the inclination of the star and the position of the earth in orbit around the sun are in no way mathematically or logically explained by SRT.

SRT is basically a very simple theory, because there is only one explanatory variable: the relative velocity $V$ between two systems. The relative velocity can in no way give an explanation for the dependence of the inclination. It is also impossible with the relative velocity $V$ to determine the dependence of aberration with the position of the Earth in orbit around the Sun.

There is no doubt that the conclusion that SRT is empirically validated by stellar aberration is erroneous; a fallacy.

The applied mathematical logic that quantum mechanics elevates to inescapable scientific knowledge is even more dramatic as it is combined with fundamentally incorrect physical formulas. The world famous "Standard Model" is based on mathematical fallacies. For applied mathematical logic to obtain valid scientific conclusions, the same conditions apply as for valid philosophical conclusions. Just randomly combining empirical factors in a mathematical formula to create an empirical mathematical "theory" that correctly describes the observations is erroneous.

## Nuclei

The applied logic in nuclear physics is roughly as follows:

1. A strong nuclear force must exist to bind the protons and neutrons in the nucleus.
2. The observation that nuclei may be unstable means that also a weak nuclear force must exist.
3. The mathematical empirical formulas for particles are valid theories.
4. The Standard Model describes the mathematical relationship between the empirical formulas.
5. Interpretation of the mathematical relationships in the Standard Model leads to scientifically irrefutable physical findings.

The above applied mathematical "logic" leads, according to the science of theoretical physics, to the irrefutable scientific conclusions of the Standard Model.

The physical understanding of atomic physics is nil. There exists only mathematically derived "insight", sec based on *ad hoc* formulas. In aether theory, mathematics plays no more than a supporting role. The derived mathematical formulas are based on logical physical insight. The imagination can fabricate an endless number of possible solutions. Mathematical evaluation of possible solutions separates and determine which thoughts make sense and which don't.

A nucleus, in aether theory, can be represented as a geometrical configuration where protons and neutrons are affixed by a nuclear force. Introducing a weak force is not necessary, as the physically derived formula for nuclei are intrinsically unstable. The observed instability of nuclei does not need to be superimposed as a condition in the mathematical model. The derived formula, a derivative of the physical configuration, implicitly demonstrates the intrinsic instability.

Stability and instability of particles in aether physics is explained by an atomic force, the geometric configuration of protons and neutrons in the nucleus, the destabilizing effect of the positive charge of the proton(s) and the negative impact that the oscillation energy imposes on the stability. With aether, each nucleus, isotope and other particles have a very specific geometric structure.

The all-determining geometry of the aether is discussed later. It is essential, however, that every atomic nuclei in aether has a specific geometric structure. This gives insight

into how nuclear fusion can be realized. The way to create fusion with aether contradicts the thermonuclear approach in nuclear physics. The difference in approach between thermonuclear fusion and fusion with aether is metaphorically as follows:

*The command is: Merge two cats.*

*The thermonuclear approach is that two cats are put in a hydraulic press. The cats are in a brutal manner pressed towards each other. A terrible battle occurs, but with sufficient force and energy exerted the cats eventually merge into cat mush. The merger is successful!*

*The aether approach is as follows: Put a cat in heat in a pipe. Send a tomcat after it. The merger happens voluntary and the encounter results in a nesting*

The difference in method is great. I will not bore you with further speculation about the geometric configuration of nuclei, there is no empirical evidence for this. It is logical, yet remains pure speculation. The treatise on the aether up to "Proton and Neutron" is pure speculation, but later follows irrefutable proof that the applied logic must be valid to a certain extent because reality is properly described.

The realization that with aether, a completely different understanding of atomic physics is obtained has had great influence on my attitude. Until now, the investigation was a fun exercise, but by understanding how fusion comes about, the stakes are greatly increased. It is not only an interesting exercise anymore, a challenge, something else to do. The possibility that the insight concerning the nuclear fusion process that quantum mechanics offers is completely wrong, motivated me to continue.

Recognition that the logical arguments on which SRT is based are incorrect, also puts the general theory of relativity, as a possible explanation for gravity, at risk. This is not a very big problem, because with aether, a logical explanation for gravity emerges spontaneously. Again, the followed reasoning is logically, but speculative due to the lack of empirical testing. The explanation for gravity I will therefore abstain. ***This story is not about speculation.***

## What is science?

It's the end of November 1998 and I am 2 ½ months into my sabbatical. For me personally I found very satisfactory answers to questions on the relativity of time and space, which obviously do not exist. In addition, there are serious doubts about the correctness of quantum mechanics.

Now, about two months after learned gentlemen were informed concerning the full theoretical explanation of stellar aberration with dragged aether, I have received no response. It is time to make contact. In short, the result is that the highly learned men believe that SRT supplies a more than adequate explanation for stellar aberration and that SRT over the past 100 years is a conclusively proven theory. Aether is passé and the article is therefore irrelevant.

I do not consider myself a scientist, but the assumptions of SRT are distressing. All "proofs" are, when examined, not more than observations where the Lorentz factor is significant. The Lorentz factor is not a unique product of SRT. Other explanations, theories, such as the Lorentz theory or aether, provide the same factor. According to the logic of science, all theories (ie formulas), which in one way or another incorporate the Lorentz factor yield empirical confirmation by astronomical observations, synchrotron radiation, satellite navigation etc. As soon as the Lorentz contraction is used, science says SRT is experimentally confirmed. Yet contradictions are completely ignored.

The objective scientific interpretation of experimental data? They are fallacies, invalid, incorrect conclusions. The observations do not falsify SRT, and that is all. It is symptomatic that all the observations that do not contradict SRT are considered proof! What SRT really proposes, are the numerous logical inconsistencies and conflicting perceptions that are completely ignored or are called "paradoxes". Science is not able to even explain one paradox in a satisfactory way. The "logical" explanations provided for paradoxes always introduce new, even more improbable theories. Why do scientists so jealously maintain a fairy tale?

## The photon and Planck's constant

It is clear to me that science should look at the possibilities the aether provides to explain physical phenomena. Demonstrating that the aether was wrongly rejected, is not sufficient to interested scientists. Apparently, more evidence is needed.

It appears to my mind that Planck's constant $h$, is a very important constant of nature and when aether is inferred, should be able to be deduced theoretically. Planck's constant is the dominant natural constant in quantum mechanics. Elimination of this constant is a very, very strong argument for the aether theory. The constant is very accurately determined by experiment and identifies the ratio between the energy and the frequency of the photon.

$E_{foton} = h\nu$

The photon is an electromagnetic vibration presented as an alternating electric and magnetic field propagation in empty space at the speed of light. Science **assumes** that Maxwell's equations correctly describe electromagnetic waves. Much more is not known. The photon is for scientists, for the most part, still a mysterious phenomenon.

It has already been mentioned that a high energy photon can split into a negative electron and a positron. The charge of the electron is represented by the symbol -$e$, and is the smallest observed independent charge. That a high energy photon can split into an electron and positron does not exclude that in the photon a oscillation can take place between charges that are a fraction of the charge of the electron. That only electric charges are observable that are multiples of the charge of the electron doesn't rule out the possibility of a vibration in the photon between charges smaller than the charge of the electron..

The attractive force between two opposite electrical charges in physics is experimentally expressed as Coulomb's law:

$F = -Q_e^2 / 4\pi\varepsilon_0 R^2$

The charge $Qe$, in the formula, always exist in experiments out of multiple elementary charges of the electron -$e$. We now assume, however, that two opposite electric charges $e/n$ oscillate in the photon, where $n$ is an arbitrary number. We substitute these charges in Coulomb's law for $Qe$, then the formula for the Coulomb force between the

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two charges becomes:

$$F = -e^2/4\pi\varepsilon_0 R^2 n^2$$

In the formula, *R is* the distance between the two electric charges. When the energy of a vibration is calculated, then the force *F* must be integrated, added up, over the distance over which the force is active. The beginning and the end of the vibration must therefore be known.
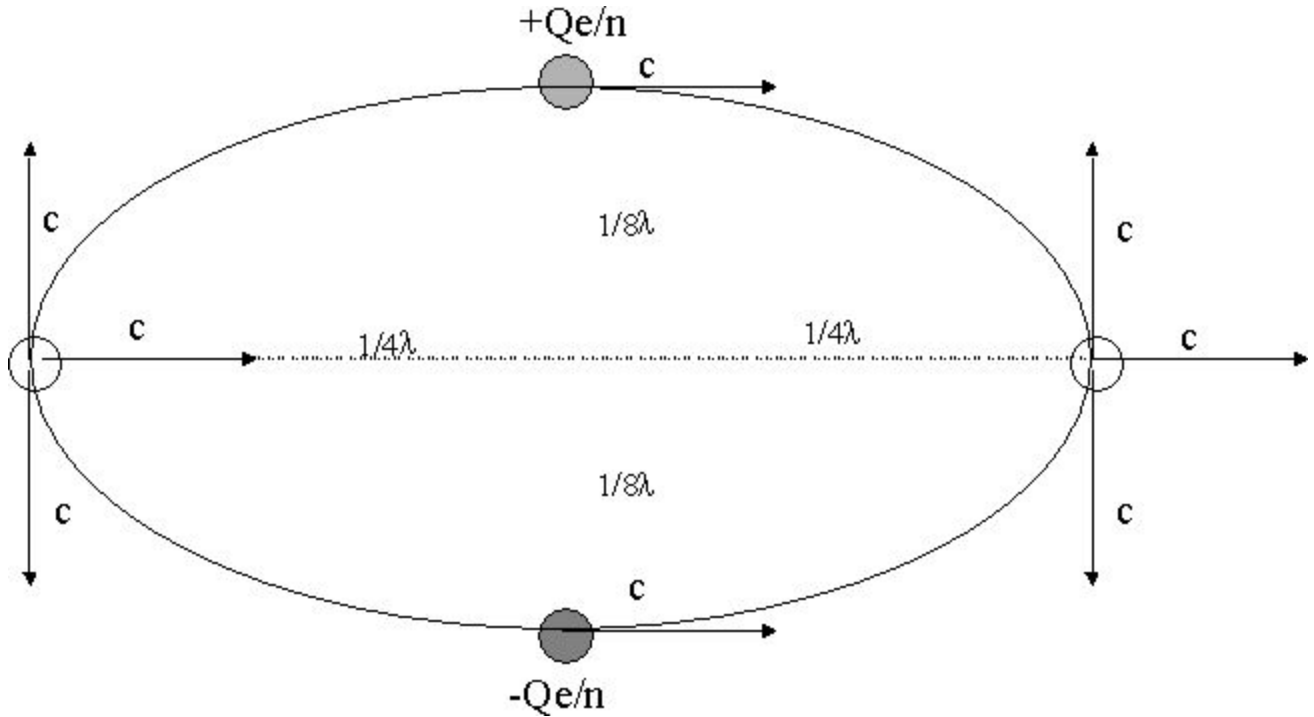


*Figure 30: Schematic progress of the photon*

The fraction *n* is unknown in the formula for the Coulomb force. Of the photon it is known that the wavelength is inversely proportional to the energy. If the wavelength is two times as great, then the energy is two times as small. From the above formula, we can deduce that the force between the two electric charges, and therefore also the energy of the vibration, is inversely proportional to *n* in the square. Therefore, the wavelength of the oscillation must be proportional to $n^2$. This means that the wavelength of the photon can be described according to: $\lambda = an^2$ where $\lambda$ (lambda) is the wavelength of the vibration. The unknown *n* in the Coulomb formula is now replaced by the wavelength and the unknown factor *a*.

We do not know the value of *a,* but what we do know is that when *n*= 1, the charge in the vibration is equal to the charge of the electron -*e.* The radius of the electron is known as the Compton-radius, the classical *Rc.* The most direct and therefore the most obvious value for *a* is therefore the Compton-radius *Rc.*
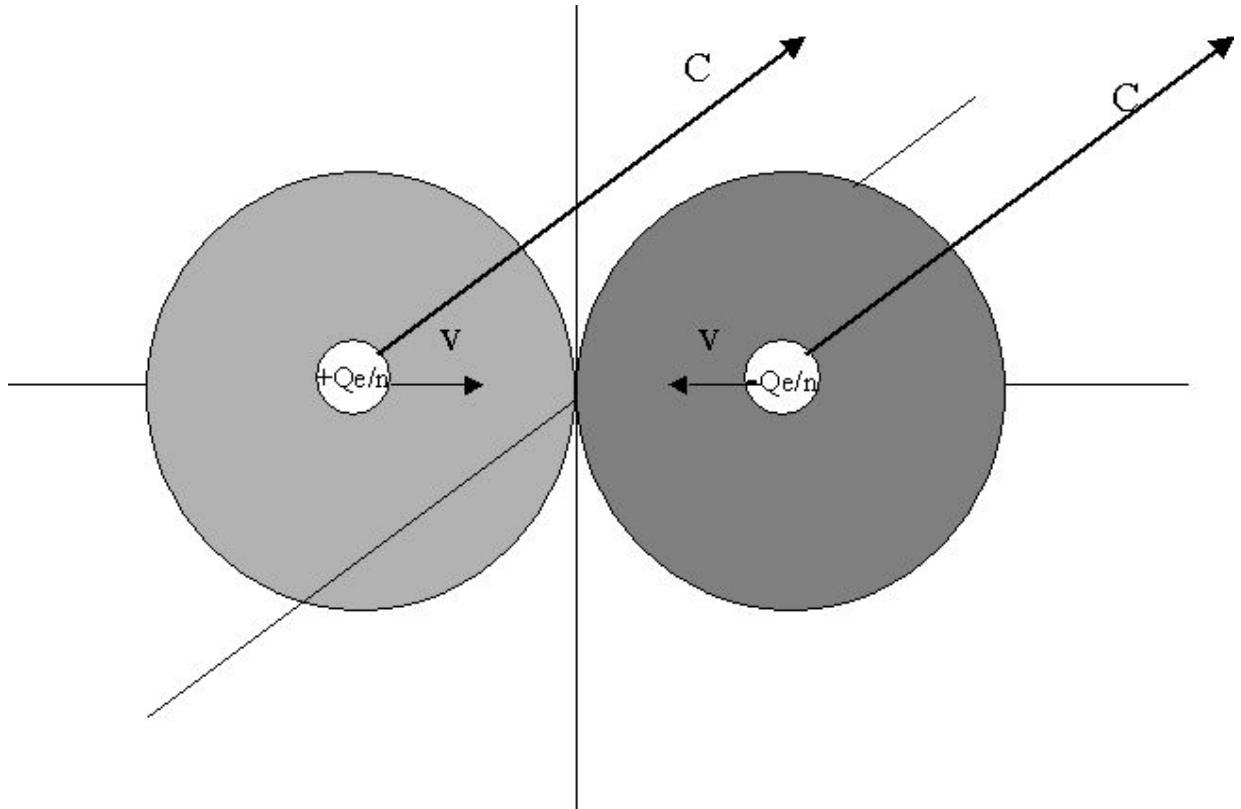


*Figure 31: A snapshot of the photon traveling through the aether.*

The distance at which the vibration reverses, when the charges are furthest from each other, is of minor importance for the determination of the energy of the vibration. The distance at which they separate is estimated ¼ Lambda. Lambda is the wavelength of the oscillation. There is now only one unknown factor left in the formula for the Coulomb force, which we have to determine before the energy of the vibration can be calculated and that is the distance between the two charges to which the Coulomb force is employed.

When the distance in the Coulomb formula approaches zero (*R=0*), the force becomes infinitely large and creates a mathematical singularity. It is assumed that aether consists of point volumes. No assumptions have been made with regard to the dimensions of the volume point. In the chapter *"The proton and the neutron"* we have speculated that the calculated size of the proton and neutron might be an indication of the size of the point

volume. If we now assume that the radius of the neutron *Rn* is an approximation for the size of the point volume, all factors in the Coulomb formula are known and the energy of the oscillation can be calculated at:

$$W_\psi = e^2 R_e / 16\pi\varepsilon_0 R_n \lambda$$

This equation represents the energy of the vibration as a function of the wavelength. The photon does not only vibrate. It also moves in space with the speed of light *c* and this motion also represent energy. The photon has two degrees of freedom to store energy: oscillation and motion. As in nature the equipartition principle distributes the energy equally over the available degrees of freedom, it can be expected that the kinetic energy of the photon is equal to the vibrational energy.
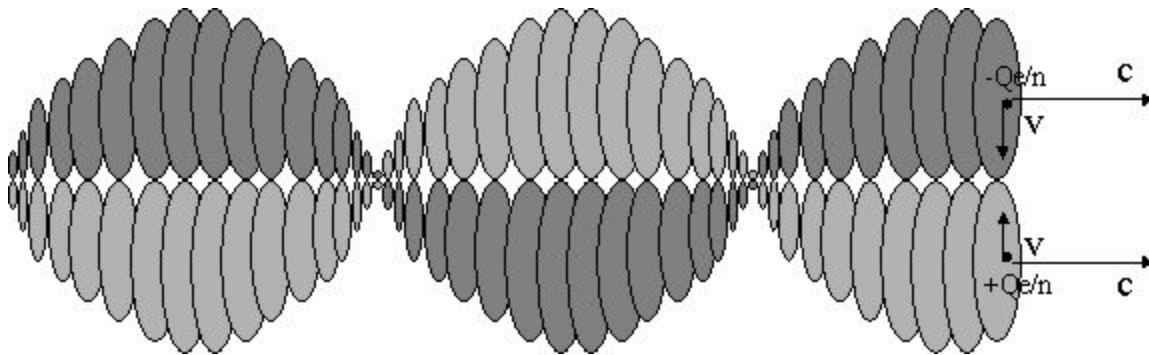


*Figure 32: The photon vibrating and moving through space*

The total energy of the photon becomes then:

$$Wf = e^2 R_e / 8\pi\varepsilon_0 R_n \lambda = H\nu$$

*H* is the theoretical calculated value of Planck's constant derived from the above formula, based on the calculated radius of the neutron *Rn.* Calculation shows that *H* deviates 6% from the experimentally determined value of *h.* A deviation of 6% means that no exact valuation took place. It might not be an exact equality, but a deviation of 6% is in a historical perspective, good enough for a postulated theory to say that the derived formula for Planck's constant is experimentally confirmed. The measurements of Fizeau, according to science, confirmed the drag factor of Fresnel when the deviation was 10%, so a deviation of 6% should be acceptable.

The thought that the point volume in one way or another "deforms", when it transforms from point volume to neutron or proton should not be excluded, so the hypothesis that the calculated dimensions of the neutron is an indication of the size of the point volume is reasonable.

When the assumption is verified that the neutron provides evidence of the dimension of the point volume, then it is, in turn, the experimental value of Planck's constant that provides a much more accurate measure of the dimensions of the point volume.
The value of the radius of the point volume based on the empirical value of Planck's constant $h$ gives the radius of the point volume in the formula:

$$R_{Planck} = Qe^4 / 32\pi^2 Me\,\varepsilon_0^2 hc^3 = 1.636393 * 10^{-18} meter$$

Given the highly speculative nature of the derivation and the realization that the point volume evokes an image of a "flexible" entity I am very satisfied. Remember that the derivation is based on assumption on assumption on assumption. The chance that with an accuracy of 6% Planck's constant is "accidentally" calculated is ***extremely*** small.

There is no doubt that I stumbled on something extraordinary. The possible social consequences, when I'm correct, can be phenomenal. The possibility of an aether ***must*** therefore be investigated by science. Even if the chance is only one in a million, then it is from a scientific, economic and social perspective opportune to explore the possibilities of aether in depth.

The imminent threat of global warming and the economic importance of an inexhaustible clean and safe source of energy to sustain the growth of the world economy, should be enough for scientists and politicians to pay attention to possible incorrect insights in theoretical physics.

## From Paradox to Paradigm

The following months I have tried to interest scientists to consider the scientific possibilities of an aether seriously. This proved impossible. Letters are not answered, commitments are not met. I am completely ignored and not taken seriously at all, at least that is the impression. There is enough evidence for science to at least consider the possibility of aether seriously, especially when the economic and social stakes are so high. Furthermore logical thinking scientists and people like you and me find a reality with only 3 dimensions, and a fundamental constant of nature $h$ less much more acceptable as reality than the current tales of the relativity of time and space, 7 dimensions, parallel universes, wormholes and the innumerable logical contradictions.

Therefore I decided that a book should be published. With the help of Anja and Renee we published in November 1999 the book *"From Paradox to Paradigm"*. The book was sent in advance to scientists, science journalists, newspapers, political parties, ministries, environmental organizations and all other imaginable characters. A contest was devised for the 10 invited scientific journalists in which they could win 10,000 guilders, in order to encourage them. The prize was guaranteed. In addition, 15,000 guilders was spent on marketing. A conference room was rented in Nieuwspoort. The turnout was disappointing, only Anja, Renee and I were present. There was at least enough coffee for the three of us.

In 1999, the Internet was not as pervasive as it is now. After the debacle of the press conference, someone advised me to explore the possibilities the internet afforded. He also noted that Dutch scientists, compared to their American brethren, are narrow and shortsighted. For Americans, the success rate should be a lot bigger, so I was told. Slowly I started to realize that my high expectations are the result of a great naivety on my part regarding the supposed independent thinking by others.

There is nothing else than to write a scientific article about stellar aberration and aether. In the year 2000, manuscripts for publication in scientific journals such as Science, Nature, Physics Letters and European Physical Journal were required in hard copy. A further condition is that the article, as long as it is under consideration, is not allowed to be offered to any other science journal. Most often, no answer was received from the journal. In other cases it took months to receive a rejection with the argument that the article is not relevant, not actual.

How can an omission 100 years ago, that put theoretical physics on the wrong track, ever be not relevant or not actual?

The 2005 article "*Stellar Aberration and the Unjustified Denial of Aether*" was published in the dissident scientific journal *"Galilean Electrodynamics",* after all mainstream journals had given no answer or no intrinsic reason to reject publication. *"Galilean Electrodynamics"* is considered irrelevant by the establishment, so the article is unlikely to lead to investigation.

Of course I have not been idle since the book was published in 1999. The book has been translated into English and posted on the Internet. I looked up thousands of addresses on the Internet of scientists, science journalists, editors etc., and sent them letters and/or mailings. After each mailing, which highlighted many individual logical inconsistencies of the SRT, visits to the website increased considerably, but did not result in much correspondence.

On one of my emails I got response from a Dutchman who had studied theoretical physics at the Free University of Amsterdam, and is now a professor at a major American university where he teaches the theory of relativity. The reason why he answered my email was not concealed. He wants his students to get acquainted with the arguments and reasoning of a real idiot, a crackpot. Someone who does not agree with the findings of Einstein. He said that if I am aware of why he is willing to correspond, I would not squander the opportunity to finally have the chance to tell a real scientist my story. The arrogance was palpable, but it did not prevent me from beginning a discussion.

The correspondence did not last long. He did not want to discuss my article about stellar aberration. Considering the empirical foundation of SRT, his opinion was that the theory was proven correct many times, while my argumentation was that the experimental data was only circumstantial. I asked him whether SRT explained the observed stellar aberration, upon which he conclusively answered that this was certainly the case. I argued that the only explanation SRT can provide is the relative velocity between stars and the Earth, since the relative velocity is the only explanatory factor of the theory.

Here he had to agree, because otherwise he would have to admit that the SRT can not explain stellar aberration. I argued that when that is the case, the stellar aberration of a binary star system must depend on the motion of the Earth around the Sun and the cycle of the binary star circling its companion.

In a binary star system one star orbits another star, similar to the way the Moon revolves around the Earth. When the relative velocity determines the observed stellar aberration, as science claims with SRT, then the stellar aberration of a binary star should depend on the orbit of the Earth around the Sun **and** the orbit of the binary to his partner. He agreed with this. I asked him to inquire at the Department of Astronomy whether this dependence is indeed observed by astronomers. This he would do immediately, as the astronomy faculty was around the corner. That was the last I heard from him. Emails were not answered.

It is irrevocable that when the only explanatory factor of a theory is relative speed and this explains stellar aberration, than stellar aberration of binary stars must differ from ordinary stars. The sad truth is that in astronomy, such an effect has never been observed. This observation empirically contradicts the validity of SRT and therefore falsifies the theory. Sadly this observation is systematically ignored by science!

It is a practice of theoretical physicists to ignore observations that falsify the theory, while observations that are circumstantial like time dilation, the necessary correction of global position satellites, astronomical data etc are used to verify the theory conclusively. The scientific substantiation the audience hears is strongly colored. Science or fiction?

# The equivalence of magnetic and kinetic energy

During my attempts to get the article about stellar aberration published, it became clear that it was not sufficient to motivate scientists to address the discovered inaccuracies. More scientific evidence is needed to let scientists realize that not everything is okay in theoretical physics. Another even more convincing article than "*The Unjustified Denial of Dragged Ether*" is necessary.

The analysis of physical phenomena with aether reveals that only two forms of energy, and associated forces, are necessary to describe all observed forms of energy and forces from the subnuclear to gravitational. This observation implies that kinetic energy must be identical to magnetic energy. If this is true, then all the kinetic energy of a moving car must be traced back to magnetic energy. This is however contradicting the findings of the science of quantum mechanics. This science states that the kinetic energy of an electrically charged particle, like a moving electron, can not fully be attributed to the magnetic energy of that particle.

During the second half of the 19th century, the electromagnetic theory (EM-theory) was in development. It describes the **assumed** relationships between electric charges, magnetics, electrostatics and electromagnetic fields. In 1881 the British scholar and Nobel Prize-winner Sir JJ Thomson (1856-1940) attempted to calculate the electromagnetic mass of the electron. For this he uses the developed vector calculations of EM-theory. Thomson calculated with the help of EM-theory, the impulse of a moving electron. He calculated the electromagnetic mass of the moving electron to be 2/3 of the real mass of the electron. The conclusion of science, based on this analysis, is that 1/3 of the mass can not be explained with the electromagnetic properties and that therefore the missing part of the mass must be "mechanical".

The judgement with aether is that a mechanical mass doesn't exist. For that reason I examined Thomson's work on this subject. I discovered that Thomson made a fundamental mistake during his derivation of the electromagnetic mass of the electron. This mistake explains exactly the 1/3 of the mass that Thomson missed, for the electromagnetic mass to be the equal to the observed mass of the electron.  (For the exact representation of the calculations and discovered error I must refer to the subchapter "*The Electromagnetic mass*" of the article "*The Equivalence of Magnetic and Kinetic Energy*" on the website).

Thomson is a famous scholar and Nobel Prize winner, and the question arises how this omission occurred and why this was not discovered? The answer is that the EM-theory, an empirical science, provides empirically derived formulas. The experimental formulas of EM-theory states scientific data when the **physical conditions are identical** to the circumstances when the experimental formulas were derived. An empirically derived formula supports empirical science, and is by definition, correct under the same circumstances. When the formulas are used in other situations, their validity should be questioned first, before conclusions are reached.

This was not done by Thompson. He used the empirically derived vector characteristics of the EM-theory under circumstances that are substantially different. The calculations of Thompson violates the most important physical law, the conservation of energy. The different circumstances exactly explain the missing 1/3 of the mass of the electron. This false analysis is also the cause of the well-known "4/3 problem" in physics.

In his derivation of the electromagnetic mass of the electron Thomson regards the energy density of the electrostatic field as a vector, while it is obvious a scalar. Therefore the applied vector calculations by Thompson are invalid, but the error is never discovered.

Now you may wonder: "Why was it never discovered?"

The EM-theory describes mathematically the empirical established relationship of electromagnetic fields. An electric current normally consists of an infinite number of electrons. Each individual electron makes its contribution to the magnetic field. This is a completely different situation than where Thomson takes only one electron and then uses the EM/vector calculations. There is an essential and fundamental difference in circumstances.

In the article *"The Equivalence of Magnetic and Kinetic Energy*" Thompson's error is irrevocably demonstrated. When Thomson's mistake is corrected, the calculated electromagnetic mass of the moving electron becomes exactly equal to the experimental determined mass of the electron.

The article *"The Equivalence of Magnetic and Kinetic Energy*" was sent for publication to all scientific journals. The rejections were again, not based on any inaccuracies, but based on the argument that the article was irrelevant, not actual!

The story becomes too technical, but it is necessary to mention, that the discovered erroneous vector/scalar interpretation is also represented in the famous, ***not empirically derived nor empirically verified***, equations of Maxwell.

Maxwell´s equations are the theoretical basis of quantum mechanics on which all the experimental formulas of Particle Physics are based. Maxwell's equations describe the supposed electromagnetic properties of the electromagnetic field. Maxwell's equations are mathematically correct, but it appears that the physical characteristics of the equations misrepresent physical reality. In them, the law of conservation of energy is violated.

Now the gate is completely open. The empirically derived formulas for particles in the quantum mechanics of nuclear physics are based on the electromagnetic equations of Maxwell. Maxwell's equations form the theoretical basis of sub-atomic quantum mechanics, the famous "Standard Model". The formulas for particles cannot in principle be correct, because a particle itself, can never violate the most important law in physics.

Now you may be thinking: "That does not matter because the formulas are empirically derived from measurements thus the formulas describe reality." Empirically derived formulas describe observations and indeed in this respect they are correct. However do the experimental derived formulas also validly represent the physical properties of the particle? Then one must unmistakably answer "No". The essence of what this book tries to make clear comes to the fore.

***Improper physical insights derived from empirical equations.***

The computational results of the formulas in quantum mechanics are correct, but the physical interpretation, the insight that the scholars deduce are false. A mathematical formula that calculates the mass of a particle correctly is fundamentally incorrect for deducing physical properties when that formula violates fundamental physics laws. The theoretical understanding of the physical processes of quantum mechanics is derived from the physical characteristics of the empirical equations, and these are, by definition, incorrect, when the formulas are physically impossible. The derived physical insights will then be false.

Mathematics is a powerful scientific tool that is available to scientists. For each observation there are basically many mathematical solutions. Are all these empirical, mathematical solutions theoretically correct? Of course not!

In physics, the mathematical solutions have to comply with the laws of nature. Physics therefore imposes restrictions on the use of mathematics when describing physical processes or phenomena physically correct. Mathematical solutions for observations can calculate correct results, but for physical correct conclusions the math **must also be** valid in physical sense. Formulas that describe observations 100% accurately can simultaneously be 100% physically incorrect.

The world-famous "Standard Model" consists of empirical equations derived for the different particles. The physical interpretation, the insight acquired, is incorrect because the mathematical representation of the particles is physical incorrect. The result of the calculations are correct, but not the physical interpretation.

It is therefore not a wonder the "scientific" conclusions of theoretical physics ends up in the "reality" of relativity of time and space, 7 or more dimensions, parallel worlds, wormholes, dark mass, dark energy et cetera.

## The science Theoretical Physics in discredit

You can imagine that theoretical physicists are not crying out for people that tell them that what they are doing is wrong. Over 100 years of relativity theory and quantum mechanics will not disappear because someone claims that they made really bad mistakes. It is therefore not surprising that the article was not accepted for publication by mainstream scientific journals. A referee who has performed 20 or more years of scientific research would then have to admit that his insights and scientific work are fiction. That an article is rejected for no scientific reason is unacceptable, but completely understandable from the human perspective.

It is humanly impossible for a scientist or Nobel laureate, to admit that throughout their careers they have not understood what they were doing. The inescapable scientific conclusions of the relativity of space and time, 7 dimensions or more, parallel universes, wormholes, string theories etc appear to be based on fundamental errors. Admitting the theoretical findings are incorrect is by no means in the self-interest of scientists. There is no motivation for them to publish the article. Self-interest, respect, honor, and whatever more, may motivate scientists to ignore the errors or deny they exist.

You'll be thinking that what is claimed is impossible to be true. Science can not be so terribly wrong?

## Quantum mechanics and the aether

After having written the article *"The Equivalence of Magnetic and Kinetic Energy"* I am well aware that acceptance of this article is extremely difficult, if not impossible. To sweep away a generally accepted scientific theory is virtually impossible as the resistance is enormous. At least an alternative theory should be offered. I must return to the drawing board and come up with even more convincing evidence.

Quantum mechanics mathematically describes physical phenomena at the molecular to the subatomic level. In the world of quantum mechanics, physical laws apply that are in our macro-world no longer relevant, but clearly mark observations. One of the quantum mechanical observations is that electrons circle in discrete orbits around the atom. The light that electrons emit, when they reach a lower orbit closer to the nucleus of an atom, is quantified, has a very specific frequency. Every atom emits its own very specific light waves; light quanta. Physically this phenomenon is to this day still a mystery. Quantum mechanics has of course developed a mathematical solution for this, but the physical explanation this solution implies is contrived and enigmatic. You'll see that with aether everything falls into place. The mystery of the atomic and molecular quantum mechanics is unraveled.

In the chapter *"The photon and Planck's constant"* the Planck constant is theoretically derived with an accuracy of 6%. This is a good indication that the analysis that underlies this derivation has a certain element of truth.

It has been demonstrated that scientifically, aether can not be ruled out. The vacuum, space, would then be filled with aether. This aether might consist out of point volumes with the radius indicated by means of the previously described and proposed photon. A much better indicator of the size of the point volume will be obtained with the formula, also derived in the chapter *"The photon and Planck's constant"*, where the empirical value of Planck's constant is substituted for the theoretical derived value:

$R_{Planck} = e^4/32\pi^2 M_e \varepsilon_0^2 hc^3 = 1,636393 * 10^{-18}$ meter

We will now fill up space with point volumes, which have a radius as shown above. What happens is startling!

The radius *Rc* of the electron follows from the equation for the Compton radius:

$$W_e = M_e c^2 = e^2 / 4\pi\varepsilon_0 R_c$$

In the equation for the radius of the point volume, the mass of the electron is present. Elimination of the mass $M_e$ of the electron from the two equations, gives a ratio between the radius of the electron and the point volume of:

$$R_c / R_{Planck} = 8\pi\varepsilon_0 hc/e^2 = 1722,045 \approx 12^3 = 1728$$

When we assume that the ratio between the Planck-radius and the Compton-radius is $12^3$ instead of the calculated value of 1722.045 we introduce a deviation of 1.003458. Remember the origin of this factor because it returns systematically in the following analysis.

If point volumes fill up vacuum, this will happen in the tightest possible construction, a hexagonal stacking. Similar to marbles in a very big bowl.
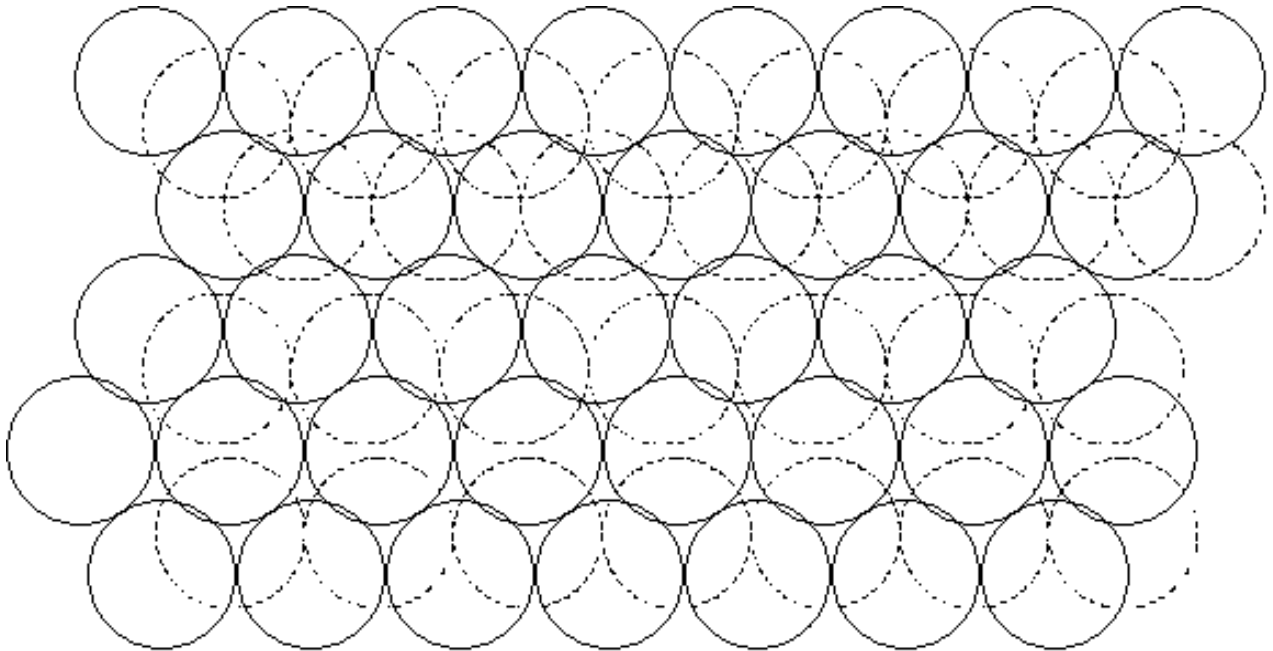


*Figure 34: Point volumes fill the vacuum*

The point volume will be in the vacuum in a rectangular grid orientation, as schematically shown in the above figure. If a positive nucleus is placed in the aether, then the positive charge of the nucleus will draw the negative charges/aether in the

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point volumes. The point volumes around the atomic nucleus become polarized and polarize the adjacent point volumes and so on. The aether around the nucleus polarize with the speed of light. An effect of the polarization of the point volumes surrounding the atomic nucleus is that the polarized point volumes are drawn toward the nucleus.

The point volumes around the atom's nucleus are drawn towards the nucleus by means of the electrostatic field. This has as a result that the hexagonal orientation of the aether (*Figure 34*) is lost around the nucleus and changes into a circular resp. spherical orientation. The arrangement of point volumes without and with the electric field of the nucleus differs substantially. The left small circle, below in *Figure 35* , around the atomic nucleus can still be found in the hexagonal orientation (*Figure 34*) without a nucleus, but the circle with 12 point volumes cannot. It is essential to realize that the geometric orientation of the aether around an atomic nucleus fundamentally differs from the stress free hexagonal orientation.
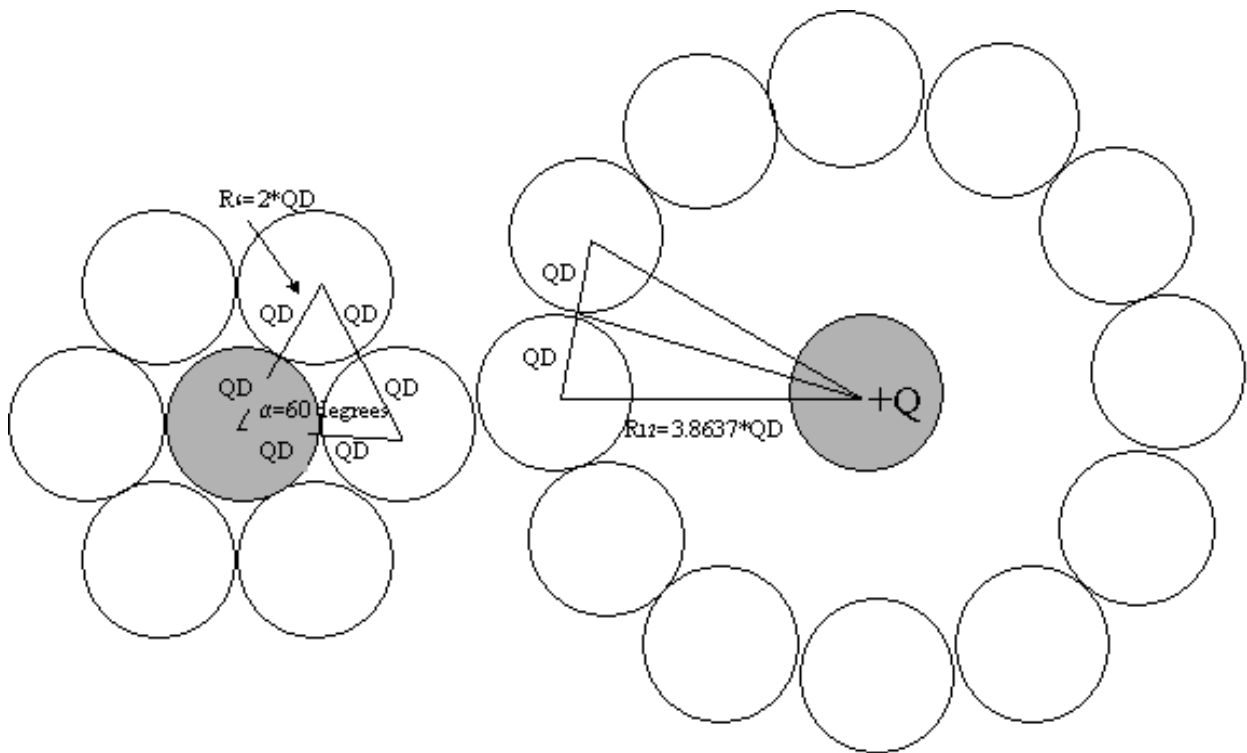


*Figure 35: Forced circle orientation of point volumes around the nucleus.*

All point volumes around the atomic nucleus are pulled towards the core. This has the consequence that point volumes, as much as is allowed, orient themselves in a circle around the charge. The radius of the point-volume, $R_{Pl,}$ is the smallest distance known. We will call the radius of the point volume in the sequel the Quantum Distance

(QD=$R_{Pl}$). We will see that the space around the nucleus is quantified by means of the forced circular orientation.

The electron occurs when a positive and a negative point volume, with spin energy, separate from one another. The charged spinning point volumes expand to the electron and positron. The radius of the electron $Rc$, is as we have seen almost a factor $12^3$ greater than the Quantum Distance (QD). The introduction of this small deviation is rewarded with insight into the geometry and symmetry of the space around the nucleus and thereby provide a clear understanding. This will become clear later.
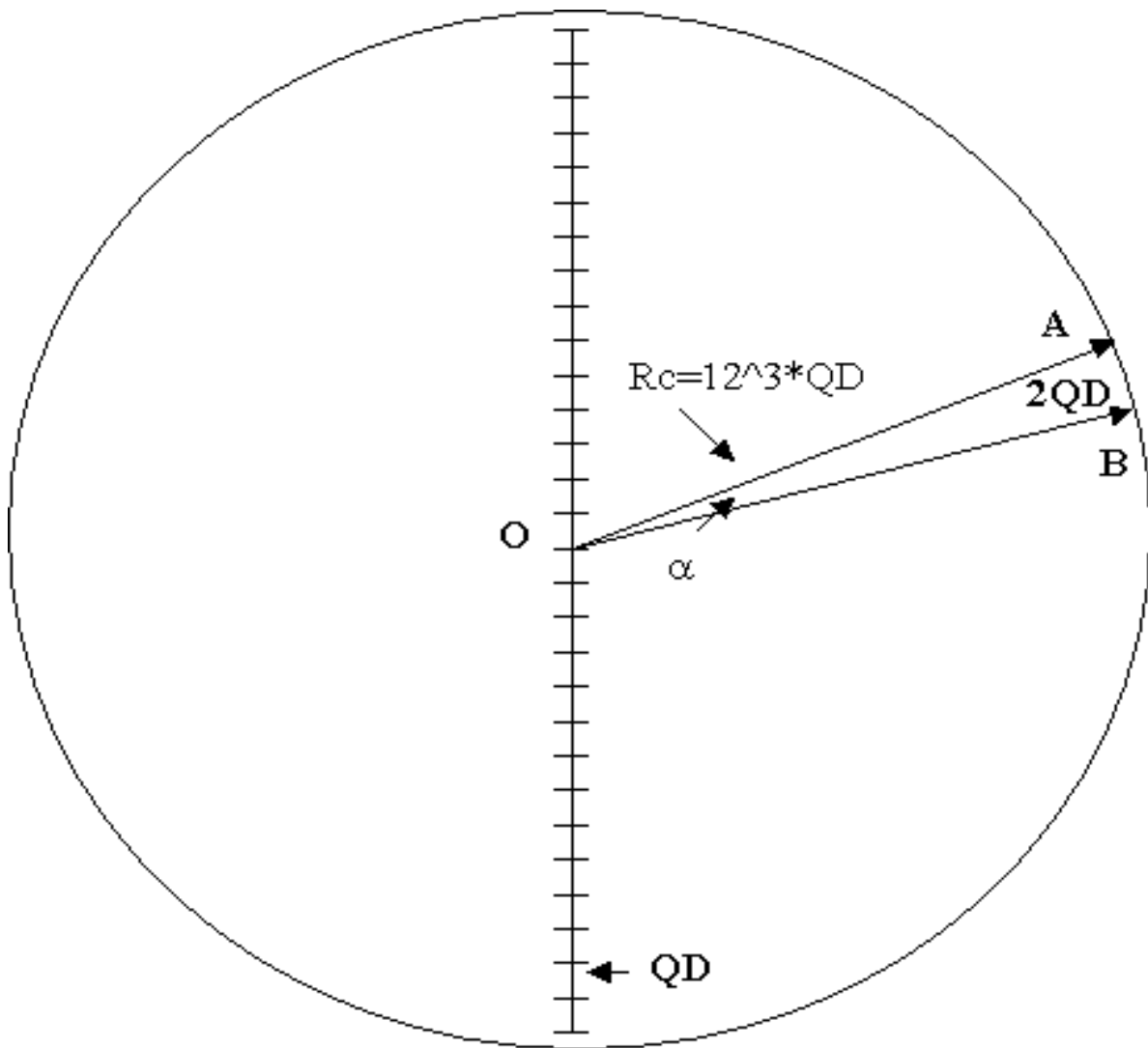


*Figure 36: The electron constructed out of $12^3$-1 point volumes with radius QD*

In *Figure 36* we have drawn schematically the cross-section of the electron. The drawn radius of the electron is $Rc=12^3$QD. The geometric center of the circle with radius $Rc$ is the point $O$. Bear in mind that the circle around $O$ is made up of point volumes, which have a circular orientation around $O$. A point volume, with a diameter of *2QD,* located at a distance $Rc$ from the geometric center $O$ includes an angle $α$. The angle $α$ can be calculated by:

$$tg(\alpha) = 2*QD/Rc = 2QD/12^3 QD = 1/864$$

The point volume comprises measured from point $O$ an angle of 25 arc minutes. In a circle of 360 degrees there are exactly $12^3/2$= 864 angles of 25 arc minutes. The circle with the radius $Rc$ can be thought constructed out of exactly 864 point volumes with a diameter of 2QD at distance $Rc$ of $O$.

Now there is something strange going on. Keep in mind that arithmetic and mathematics are developed by mankind on the basis of observations: mathematics is an empirical science.

With $12^3/2$ point volumes in touch around $O$ at a distance $Rc=12^3$QD, a "perfect" circle can be created as is illustrated in *Figure 36*. When we calculate the circumference of the circle by adding up all $12^3/2$ arches of 2QD that are circular-oriented around $O$, we calculate that the circumference of the circle must be: 864*2*QD $=12^3$QD $=Rc$.

The circumference of the circle with radius $Rc$ around $O$ is equal to $Rc!$
This is remarkable because in our world, the circumference of a circle with radius $Rc$ is equal to $2\pi Rc$. How can $2\pi$ now equal to 1? The arithmetic calculation is correct. This can not be compromised. The mathematical solution to our world of experience is a factor $2\pi$ bigger and is experimentally determined and therefore also correct. How can this inequality be solved?

Calculating the surface of the circle of the imagined electron by adding up $12^3$ rectangular surfaces with height $Rc=12^3$QD and basis QD we calculate that the surface is also a factor of $2\pi$ smaller than the surface of a "normal" circle. How is this possible? Draw with a ballpoint or pen a small dot on paper. Look at this point and try to see a circle. The circumference of the tip is so small, that radius and circumference blur into one. A small dot has a diameter of 1/10 millimeter. The point volume has a radius of about the pencil tip of one tenth millimeter divided by a hundred times a million times a million and that's literally immeasurably small. There is no conception possible. The point volume is so small that it seems to have no shape or dimension.

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The only logical explanation for the arithmetic result, that the circumference of the circle is equal to the radius, and the mathematical calculation, where the circumference is $2\pi$ times the radius, is that a mathematical translation takes place from the Quantum Dimension (QD), the point volume, to our three dimensional world experience. If you do not find this acceptable, then there is only one other possibility and that is that the math is wrong, because mathematics is based on the arithmetic. The most "logical" explanation is that the Quantum Dimension (QD) transforms mathematically to our experience of surface with a translation factor of $2\pi$. The mathematical natural constant $2\pi$ must have its origin somewhere!

Let us now take the circle created out of point volumes around *O* in mind. All point volumes belonging to the circle are touching, as shown in *Figure 37*. What is striking is that the point volumes below and above the circle are no longer fully connected to the adjacent point volumes, as is the case with the hexagonal orientation (*Figure 34*).
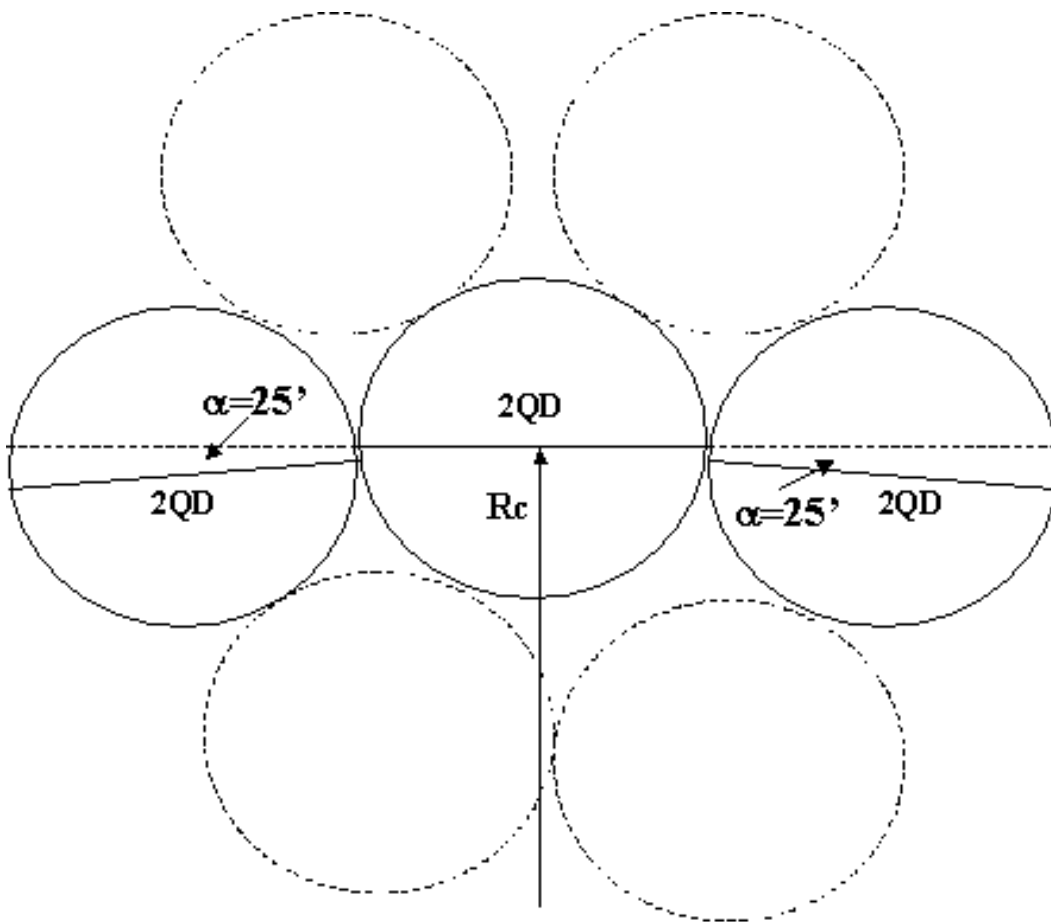


*Figure 37: The imperfect filling of space with point volumes*

Is it possible with point volumes to create a "perfect" sphere around *O*? No.
If we look from above the circles around *O* (*Figure 38*), then there is only room for two "perfect" circles. It is impossible for point volumes or marbles to form a "perfect" sphere.
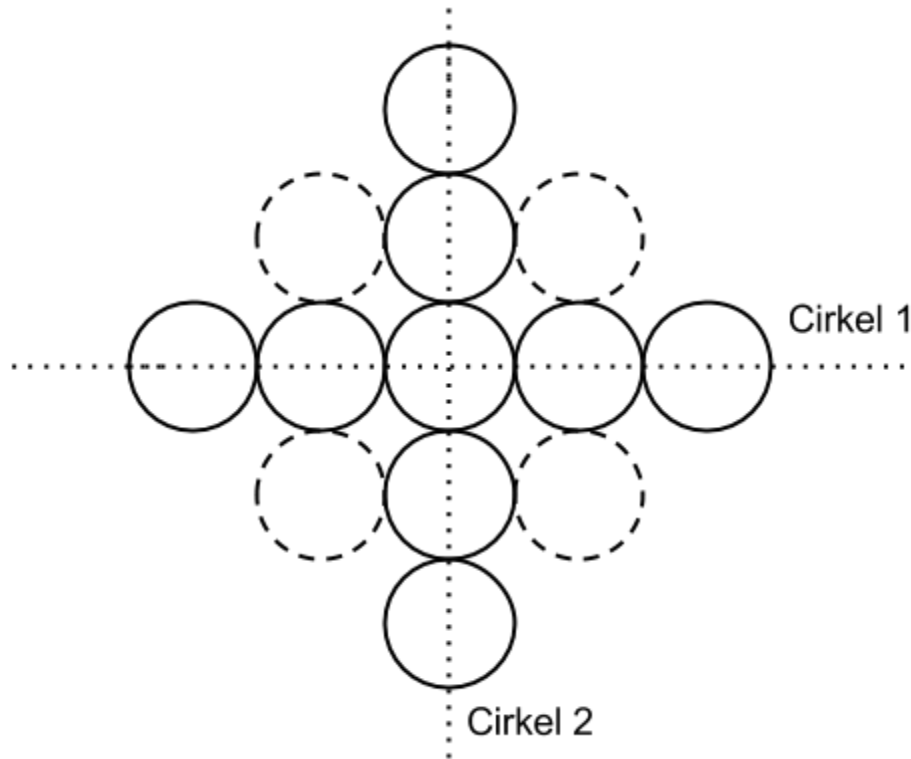


*Figure 38: Top view of 2 "perfect" circles Rc around nucleus in O*

Around *O* no more than two "perfect" circles can simultaneously exist when vacuum is filled with point volumes.

When we suggested that the electron emerged from the vibrating and rotating point volume and the expansion ended at the Compton radius, the radius of the classical electron, we had no answer yet to the question: Why *Rc*? Why does the electron has precisely this size?

The new- found geometry provides the basis for the stable electron. The two circles *Rc* each consisting of $12^3/2$ point volumes are perpendicular to each other and give the electron a stable three-dimensional structure. The charge of the electron *-e* is evenly spread over the sphere by the two stable circles. One of the "perfect" circles provides the basis for the rotation of the aether with the speed of light *c*, the magnetic spin of the electron.
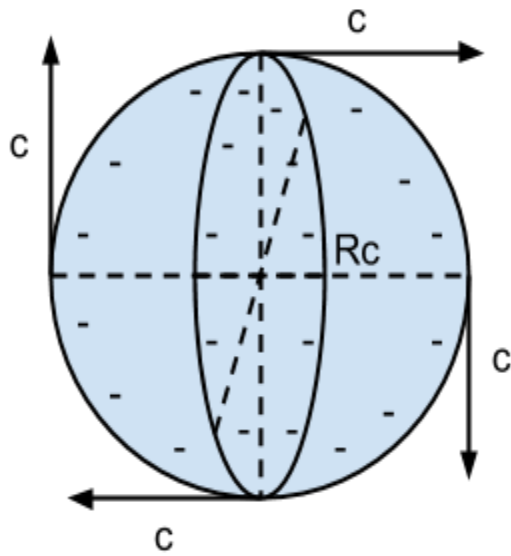
*Figure 39: Rotating negative charged sphere with radius Rc =12³QD*

Of interest for later explanation of physical phenomena is the observation that no more than two "perfect" circles around point O can be formed.

## The fine structure constant α

The fine structure constant α is a constant of nature which is directly related to the Planck constant *h*. What α means in physical terms is not clear to science. The fine structure constant is seen as the constant that determines the electromagnetic interaction, and therefore is responsible for the observed minimum differences in the frequency of photons of the hydrogen atom. We know only that α is very important in a physical sense, but what it actually represents is a still mystery.

In the previous chapter we have seen α , the fine structure constant, but we paid no further attention. We consider the electron again. $12^3$ point volumes at the distance $Rc=12^3QD$ form two "perfect" perpendicular circles. A circle has an angle of 360 degrees or $2\pi$ radians. The angle α shown in *Figure 40*, is the minimum angle at which a point volume (2*QD) from *O* can be fully observed. We calculate this angle and obtain the value α = $2\pi/(12^3/2)$= 1/137,54 radians.
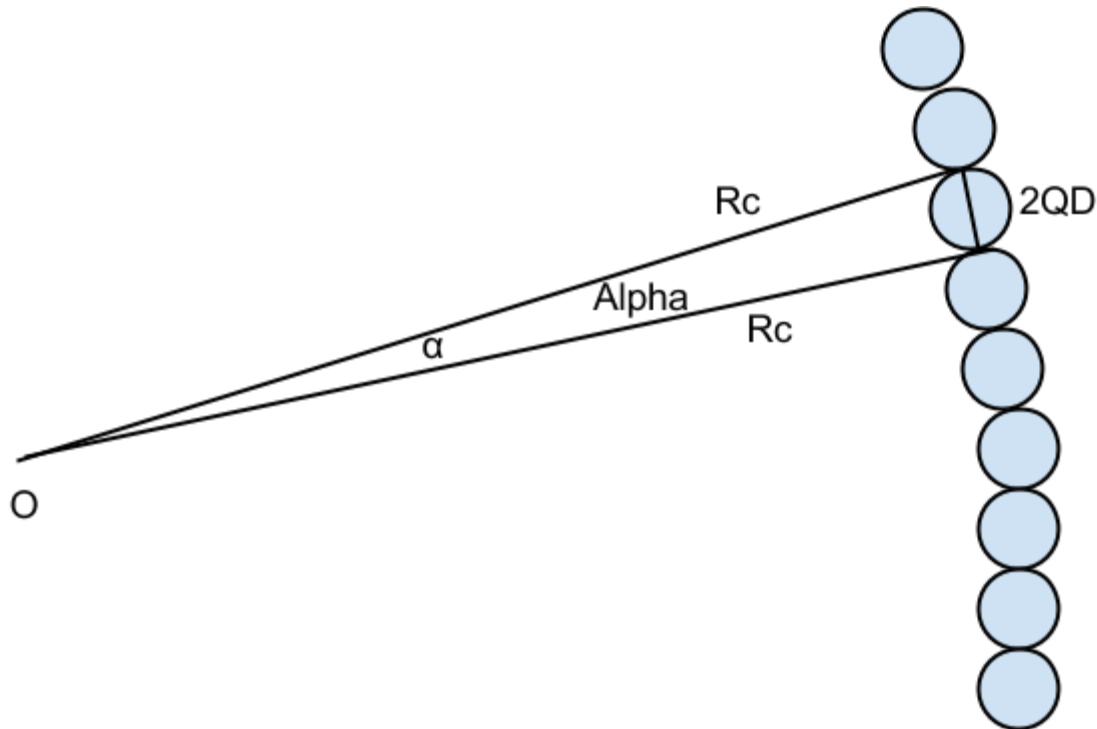


*Figure 40: Alpha, the fine structure constant*

The empirical value is very accurately determined at α= 1/137, 036. The deviation between the above derived value α = $2\pi/(12^3/2)$ and the empirically determined value for α is identical to the introduced deviation of 1.003458, when we argued that

*Rc/QD=12³.*

We shall see that the calculation of theoretically derived quantities systematically devolve to this factor. The assumption that space is filled with aether having point volume identities provides hitherto theoretically derived values for empirical parameters, such as *α,* which correspond exactly when taking into consideration the deviation of 1.003458.

## The ionization levels of the atom

The observation that excited atoms transmit light with a very specific frequency when electrons reach a lower ionization level, is one of the physical phenomena that indicate quantification of energy. To be able to explain this quantification, quantum mechanics must assume that the electron should be considered a duality, a particle as well as an oscillation.

The electron, in a stable orbit around the atomic nucleus, according to quantum mechanics, must be seen as a vibration, where the trajectory of the electron to the core is a multiple of the assumed wavelength of the electron. The electron is understood to be a particle and a vibration in quantum mechanics.

This assumption, the supposed duality of the electron, is necessary in quantum mechanics to be able to explain the physically stable ionization levels of the atom. According to current knowledge, it is not possible that the electron as a charged particle, can spin forever around the nucleus. The electron as a charged particle, loses energy, according to mainstream physics, when circling the nucleus (Bremsstrahlung) and will therefore eventually collapse into the nucleus. Because the electron doesn't collapse (empirical knowledge) the conclusion of science is that the electron therefore must be considered an oscillation when circling in the atom.

The situation is that the experimentally observed Bremsstrahlung, is a macroscopic phenomena; valid in our world but not at the subatomic level. The ionization levels around the nucleus are for the electron, in the circular bend space around the nucleus, resistance free "straight" paths.

So quantum mechanics assume that the electron is a particle and simultaneously a vibration, to be able to present a "consistent" story. This assumption is necessary in current physical insights, but are very strange, since the electron under all other circumstances is extremely stable.

With aether, there is no need for the electron or any other particle to be particle and vibration at the same time to explain observed physical phenomena. The electron is always just a particle. It can be excited, can vibrate, but that doesn't imply that there is a duality. The excited electron can be represented, for example, as a tennis ball that has been hit by a tennis racquet. The blow makes the tennis ball vibrate, but it remains a real tennis ball despite deformation, like the electron. The electron remains an electron

when excited. It is and remains a particle, which under certain circumstances can vibrate and emit excess energy with radiation.

When the electron orbits the nucleus and descends to a lower energy level, then the energy of the photon is very specific, quantified, for every atom. The electron can, with aether theory, only circle at discrete distances from the nucleus without resistance, without loss of energy. There are exactly 12 ionization levels. The ionization levels are to be found at very specific distances from the nucleus. The space around the nucleus is "quantified."

The quantification of light emitted by atoms is the result of the quantification of the space around the nucleus. The polarized aether creates at very specific distances from the nucleus tunnels where the electron can circle resistance free. The energy levels of the tunnels are in quantum mechanics called the principal quantum numbers. The principal quantum numbers n = 1,2,3 ..... represent the ionization levels or the energy levels of the atom. With aether the quantification is not mathematically determined, but physically by means of the inhomogeneous space around the charged nucleus.
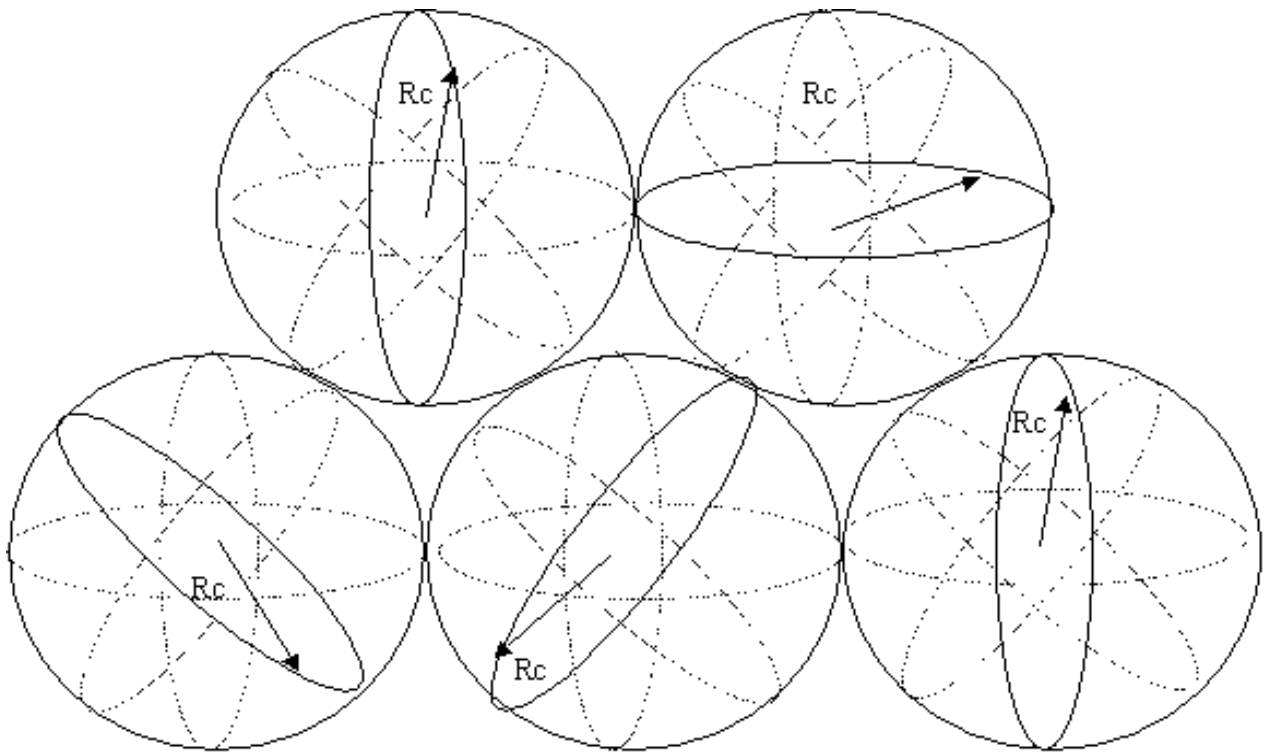


*Figure 41: Spheres with the radius of the electron Rc create the ionization levels*

Previous we constructed the electron with $12^3$ print volumes. We now fill up space accordingly, with bulbs with the dimensions of the electron ($Rc$). With $12^3$ bulbs with radius $Rc$ (*Fig. 42*) we can construct two perpendicular circles with radius $Rb$.
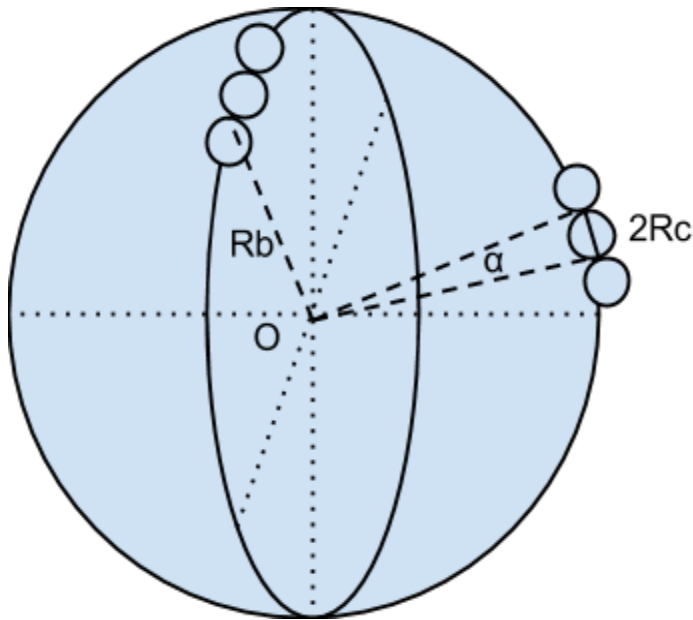


*Figure 42: $12^3$ spheres with radius Rc create 2 "perfect" tunnels with radius Rc*

The two created circles can be considered as two circular tunnels with the radius of the electron *Rc.* These tunnels are also perpendicular to each other. The electron can circle the nucleus in these two tunnels, since the cross-sections correspond with the diameter of the electron. At the Bohr-distance *(Rb),* there are two tunnels with the profile of the electron.

The two tunnels with radius *Rc* at *Rb*, the Bohr-radius, represent the lowest energy level in which the electron can circle in the atom. This corresponds with the main quantum number *n=1* of quantum mechanics. Since at the Bohr-distance *(Rb)* there are two tunnels with a radius *Rc* there is room for two electrons in the ground state.

By imagining the space around the nucleus to be constructed out of spheres with radius *Rc,* we can envisage where in the space around the nucleus, tunnels with the dimensions of the electron are created. When the distance *Rb* is constructed with $12^3$ spheres with radius *Rc* we can calculate the Bohr-radius of the atom with a precision of

0.05%. The proposed polarized aether around the nucleus is therefore fully consistent with the experimental findings of quantum mechanics.

When we calculated the surface of the electron, constructed with point volumes, we noticed that the perimeter of a circle in our world is a factor of 2π larger. It is therefore not surprising that at the start of three-dimensional space for the electron, the Bohr-distance, a mathematical correction takes place. This correction is 4 times the natural logarithm of e=2.71828 and explains the origin of the other mathematical physical constant of nature: the exponential growth constant e.

The total mathematical correction from QD, the point volume, to our three-dimensional world of experience is a factor 2π necessary for the transformation from the point volume (QD) to the Compton-circle and a factor 4e for the correction from the Compton-circle to our three-dimensional space. The necessary mathematical correction from the point volume to our world of experience is therefore:

$$2^3 *_e * \pi = 68.318$$

Summarizing we demonstrated that at the distance Rb of the atomic nucleus, the Bohr radius (n=1), two electrons can circle the nucleus resistance-free. Outside these two tunnels, the geometry of the space built up from point volumes is not in accordance with the structure of the electron. Outside the two tunnels, the electron must be deformed. The electrons are therefore trapped in the ionization tunnels.

When an electron circles in one of the tunnels, its speed is precisely so great that the attractive electrostatic force on the electron is exactly the required centrifugal force to let the electron circle in the tunnel. If the equilibrium position of the electron during its orbit is disturbed for example, by the absorption of a photon, then the speed of the electron and the electrostatic force will no longer match; the balance is disrupted. The electron is, due to the absorption of the photon, in an excited state.

When the electron absorbs a photon, it not only receives the energy, it also takes up the impulse. The speed of the electron, after absorbing the photon, is not in balance anymore with the centrifugal force necessary to let the electron circle exactly in the tunnel at Rb around the nucleus.
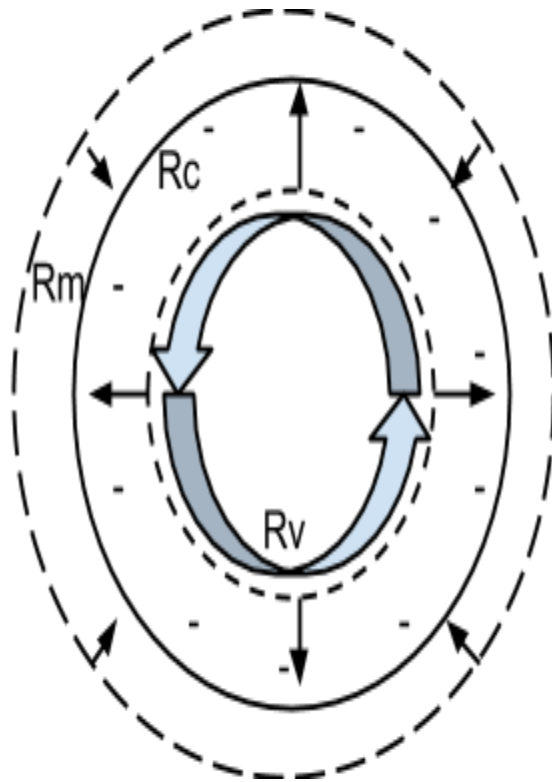
*Figure 43. The excited, vibrating electron.*

The balance of the orbit of the electron disrupted. The speed of the electron is no longer in accordance with the electrostatic force, which the nucleus exerts, to follow a perfect circle with radius *Rb* around the nucleus. The electron will now penetrate the space outside the tunnel. Because the space outside the tunnel is not in accordance with the geometry of the electron, the electron is pushed back. Depending on a number of factors including whether the energy increase of the electron is large enough to overcome the barrier, the electron can leave the tunnel and orbit on a higher level or even leave the atom ionized.

When the electron is unable to leave the tunnel completely, it comes in on a "rollercoaster" ride. It vibrates in the tunnel, trying to leave but is pushed back again and again. Also, depending on a number of factors, the electron can immediately emit a photon (reflection), lose energy during the rollercoaster ride and emit a photon of lower energy (fluorescence) or lose all energy to a radiant heat conversion (absorption).

The structure of the aether is geometrically in accordance with the dimensional structure of the electron only in the two tunnels at the Bohr-distance. In order for the electron to get further away from the core, it must deform. As soon as the electron is able to leave

the tunnel it is pushed away from the nucleus by means of the imperfect geometry of space for the electron around the nucleus. When the distance of the electron to the charge increases, the imperfection of the geometry of the aether decreases. At what distance from the nucleus has the imperfection of the aether disappeared and therefore is the structure of the aether geometrically in accordance with dimensional structure of the electron, allowing it move freely?

For the electron to move freely, the space around the electron must be everywhere consistent with its geometry. At the Bohr-distance the first two tunnel are created corresponding to the dimensional structure of the electron. In the tunnel at the Bohr-distance the space is three dimensional. The first ionization level ($n=1$), the Bohr-distance, is the beginning of the three dimensional space for the electron. For space to be everywhere perfectly 3-dimensional, we need to be in the 4th Quantum Dimension.

Again, we build up space with $12^3$ spheres as we already did two times before, but now with spheres of the radius of the Bohr-distance; the first distance to the nucleus where space is according to the geometry of the electron. At the distance from the nucleus of $12^3$ times the Bohr-distance ($12^3Rb$) space has become homogenous for the electron. It can be no coincidence that the calculated distance ($12^3Rb$) is, apart from the repetitive factor 1.003458, exactly equal to the reciprocal value of the Rydberg constant.

## The remaining 11 ionization levels

The electron in aether theory is a sphere with radius *Rc.* The electric field of an atomic nucleus forces the aether around the core in a spherical orientation. The geometry of the electron does not fit, does not match the geometry of the polarized aether around the core. The electron must deform when it moves in the space around the nucleus, except in tunnels where the space is according to the geometry of the electron. The circular stacking of the point volumes at the Bohr-distance *Rb a*round the core create*,* the first ionization level where the geometry of the aether is consistent with the electron. At the first ionization level (*n=1*) two electrons can move free from resistance around the nucleus.

The radius of the electron, the Compton radius *Rc,* and the Bohr-distance *Rb* are found by filling up space around the nucleus with point volumes which are attracted to the nucleus by the Coulomb force. In the area around the atomic nucleus the geometrical configuration of point volumes is not homogenous for the electron. If we continue to fill space up outside the Bohr-distance than other geometric patterns will be evident, such as the attendant quantum numbers *l = 0,1,2, ..n-1.*

The number of ionization levels around nuclei according to quantum mechanics is,

$$n_\infty = 41.4975$$

Although there should be, according to quantum mechanics, over 40 ionization levels, experimental science can only observe 12 . The remaining 29 are undetectable! Why can the other ionization levels not be measured?
Quantum mechanics calculates the number of ionisation levels around an atom by means of the root of 1722.04 which is 41.4975

When we however fill up space around the nucleus with point-volumes we find 12 ionisation levels in complete agreement with the empirical found number of ionisation levels. In quantum mechanics, the maximum number of ionization levels is calculated by stating that $n_\infty^2 = 1722.045$ and therefore $n_\infty = 41.4975$. Quantum mechanics is with $n^2$ in the 2nd quantum dimension. With aether we are with the ionisation levels in the 3th (quantum) dimension for the electron: *1722.04 ≈ 12³.*
It can not be a coincidence that the deviation is again the systematic factor of 1.003458. The ionization levels are for the electron in the 3rd Quantum Dimension (*n³*). So there are not 40+ ionization levels, but exactly *12*.
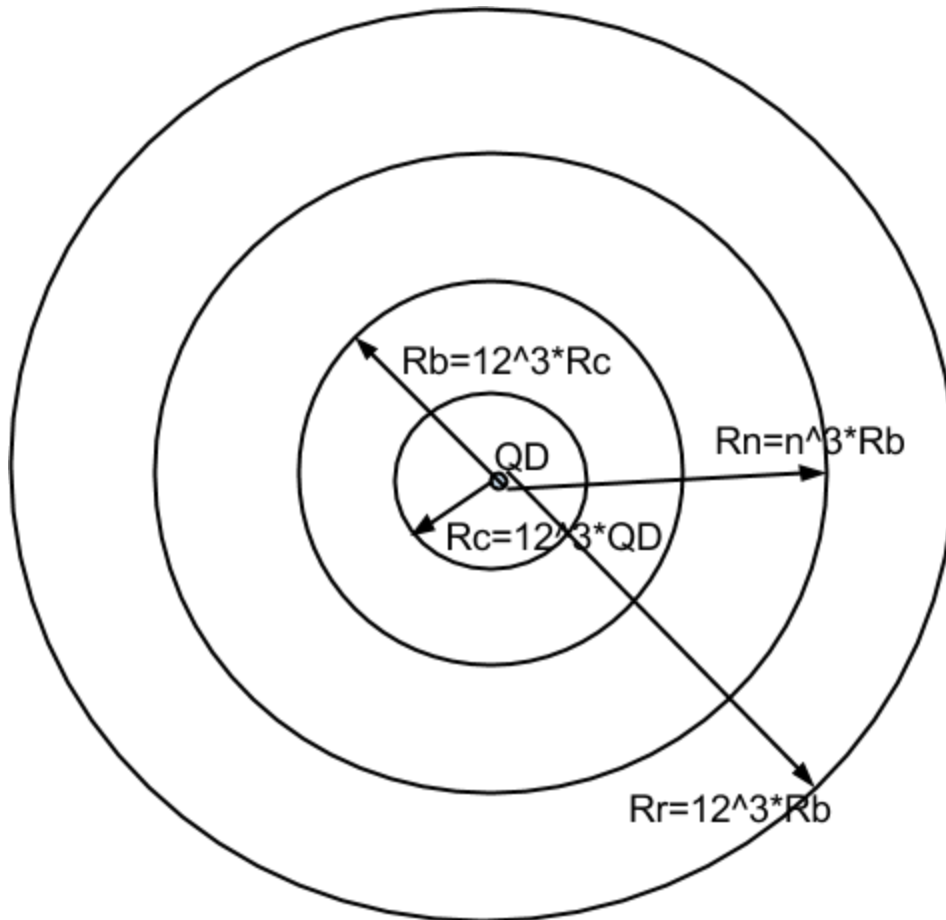
Why must we be in the third dimension?



*Figure 43: The geometry of the aether around the atomic nucleus*

Empty space is filled with point volumes with radius QD. In the polarized aether around the nucleus at a distance of $12^3$QD, the geometric shape of the electron is created. At a distance $12^3R_c$, the Bohr radius, two tunnels with the radius of the electron $Rc$ are realized. These tunnels are the first three-dimensional tunnels for the electron and the start of the 3th Quantum Dimension. Therefore, we must calculate according to $n_\infty^3 = 1722.045$ gives $n_\infty = 12$ (ignoring the factor 1.0003458).

The final result of all assumptions is a logical and understandable physical explanation for the great mystery of molecular/atomic quantum mechanics:

**Why do discrete ionization levels exist?**

Now the answer has become obvious. Space around a nucleus is quantified by the electric field of the nucleus. The above statement is not mysterious and incomprehensible. In the aether there are many, many geometrical configurations to be found providing explanations and the elimination of fundamental natural constants. The above analysis ultimately provides the Planck constant in terms of other constants of nature. *h* can be expressed as follows in the other remaining independent constants of nature:

$$h = 12^3 e^2 / 8\pi\varepsilon_0 c$$

The deviation of the experimentally determined constant of Planck *h* is the frequently mentioned factor *1.003458.* This divergence systematically pops up and arose when we assumed that the Compton radius of the electron and the Planck radius are geometrically related to *12³*.

Summarizing we found that the Rydberg constant is *12³* times as large as the Bohr-radius, which in turn is *12³* times as large as the Compton radius of the electron, which is *12³* time the Quantum Distance (Plank-distance).
This sequence of *12³* eliminates the natural physical constants for the Compton radius, the Bohr-radius and Rydberg constant.
In addition, the origin of the mathematically natural constants *π* and the natural logarithm *e* are found. Furthermore, we have obtained a clear physical explanation for the cause and position of the ionization levels.

***It is impossible that this is all just coincidence.***

The physics of aether is fully consistent with the experimental formulas of quantum mechanics within a factor of 1.003458. In quantum mechanics, the use of correction factors is not uncommon. A quantum mechanical "perfect" formula is when it deviates by a factor, and this factor is added to eliminate the deviation. We do not apply this "trick" to obtain a perfect match. Such conduct is cheating.

To be exactly correct, the systematic factor *1.003458* must be explained. A possible explanation for the factor implies for me a mathematical problem that is far beyond my expertise. In figures *37* and *38*, it is presented visually how the point volumes in the polarized aether around the atom's nucleus do not always touch each other. The hexagonal stacking of vacuum is replaced by a spherical orientation. The logical conclusion is that the hexagonal stacking can accommodate more point volumes, then an equal volume with spherical orientation.

When the hexagonal stacking of point volumes is forced by the electric field into a spherical orientation, then the space the point volumes occupy, increases. This may be the explanation for the factor *1.003458*. The magnitude seems intuitively correct. The mathematical determination of the factor by which the volume increases when a hexagonal stacking is transferred to a spherical orientation is beyond my skills.

The article *"Quantum Mechanics and the Aether"*, which is described in the final chapters, was sent for publication to all the leading scientific journals. It will not surprise you that this was not successful. The rejections of the referees can again be summarized with: - not relevant, not current.

I want to illustrate some comments briefly. Do not forget that the referees of scientific journals are the crème de la crème of science:

*"This paper does not contribute to the understanding of the physical phenomena and should therefore be rejected."*

*"The fine structure constant is, I believe, measured to many places of decimals, and it is not equal to 4\*pi/12\*\*3, as is implied by your formula. Therefore your formula is false."*

*"it appears that your manuscript is very far from what is usually published in our review. Therefore, we will not further consider your paper in ..."*

*"There is no justification, no physics. It does not deserve publication in ..."*

*"Moreover, by a purely logic stand, what the author "derived" is just alpha, not h."*

*"It would at least be more sensible to call it an attempt to derive alpha (which is in principle possible one day, but it will involve field theory) than an attempt to derive Planck's constant."*

*"If this paper would have been written between 1911 and 1924 it might have been an interesting contribution to science. But now that we have the Quantum Theory …..."*

## The many speculations of the science Quantum Mechanics

Negative reactions were expected, but I was still upset. I approached science and scientists always with respect. All theoretical physicists were trained with the belief that the science they practice is correct. The mentioned omissions were peddled as the undeniable scientific truth. The scientists are not to blame. The work performed by them remains brilliant and ingenious. It is just no longer science, but fiction.

From science, one should expect that discovered omissions are investigated. The publication of these articles should result in a scientific discussion whether the earlier conclusion that aether can not exist is really justified. Science is the search for the truth!

The arguments of theoretical physicists, that it is not interesting or relevant that aether exists, demonstrates incompetence. The reasoning that mathematically it has been proven that the existence of an aether does not matter, is even ridiculous. Scientists will say anything to prevent their incompetence from becoming known.

From a human perspective, it is perfectly understandable that scientists and certainly the epitome of the science, rejects revision of earlier scientific conclusions. It doesn't serve their self-interest when this happens. The geniuses presume my theories are "crackpot". Financial and other factors play an important role in leaving physics as it is. When the scientific truth is violated so brutally, then science must ultimately take responsibility, however painful that may be. After 7 years approaching scientists with respect, I judge it is time to question their competence and integrity.

What's the point of educating students in fiction for another 100 years,
what is the usefulness of research for fictitious particles that costs billions,
what is the use of blocking scientific advances any longer,
what is the benefit to society to withhold nuclear fusion,
what is the advantage to sell fiction as science?

Quantum mechanics claims to be the most successful theory of all time. In one sense this is true. Scientists have been able to find exceptional experimental formulas for quantum mechanical phenomena, which is admirable.

***How is it possible that quantum mechanics empirically is so successful, while the theories are fiction?***

If thousands of scientists worldwide, over years have searched for formulas that describe particles, then it is statistically expected that occasionally exceptionally good formulas are found. This is not the result of insight, but the result of coincidence.

Consider the famous Standard Model. This model is the mathematical relationship between different particles. The Higgs particle is "predicted", because it is necessary for the developed mathematical model to be "valid". Science needs, to make the Standard Model complete, 25 fundamental constants of nature such as the fine structure constant, alpha.

Nobody knows what these fundamental constants of nature really mean, but they are mathematically necessary. Science calls these mathematically necessary factors "fundamental constants of nature", but the phrase "no idea what they represent constants" would be an equally good name, except from the perspective of marketing of the Standard Model.

These 25 fundamental constants of nature are not sufficient because the Standard Model is not yet complete. Fundamental constants of nature are also required for the not yet discovered Higgs particle, dark matter, dark energy, ......

Dark mass, which science can not perceive and therefore do not know what it is, must account for, according to the theories (read formulas), no less than 84% of all mass. Only 16% of the scientifically necessary mass is known. The same applies to dark energy, unobservable and unknown, but which must present 73% of all energy known in the universe (or multiple universes?).

*Despite all this ignorance, science knows with certainty what they know!*

# A fundamental physics experiment

Now what? None of the scientific articles has been able to interest the scientists of theoretical physics to consider that the scientific conclusion that the vacuum is absolutely empty space may have been premature. Writing another article seems futile.

When their knowledge and insight is questioned, believers in quantum mechanics state that there is no doubt about the correctness of their beliefs. They say it is empirically, so incredibly successful, that the theory must be true!
Empirical significance is apparently in QM the only thing that counts. You would think that when irrefutable empirical evidence can be presented, that quantum mechanics is based on incorrect premises, this should be enough to get everything on its head.

The experiment that can cause this must be to so fundamental that no one can deny it. Scientists should not be able to say anymore ".... but quantum mechanics is empirically so successful that it must be true". The experiment should be so "basic", that someone with high school Physics understands that (sub) atomic quantum mechanics is based on incorrect assumptions.

In the article "*The Equivalence of Magnetic and Kinetic Energy*" is shown that Electromagnetic Theory (EM), the theoretical basis for subatomic quantum mechanics (particle physics), violates the law of conservation of energy. There must be something fundamentally wrong. Is there a fundamental erroneous assumption in electromagnetic theory, that can be stated empirically in a simple way?

Every high school student in physics knows that two parallel rectified electric currents attract each other and that two parallel but opposite electric currents repel by magnetic force. This is empirically and unambiguously demonstrated and forms the fundamental experimental basis for EM-theory.

What does the EM-theory state of two parallel streams of electrons and protons? It states that a stream of protons should be seen as an opposite flow of electrons. This means that if we have a stream of protons parallel but opposite to a flow of electrons the two stream of charges must be considered, according to the EM-theory, as two parallel rectified electrical currents.
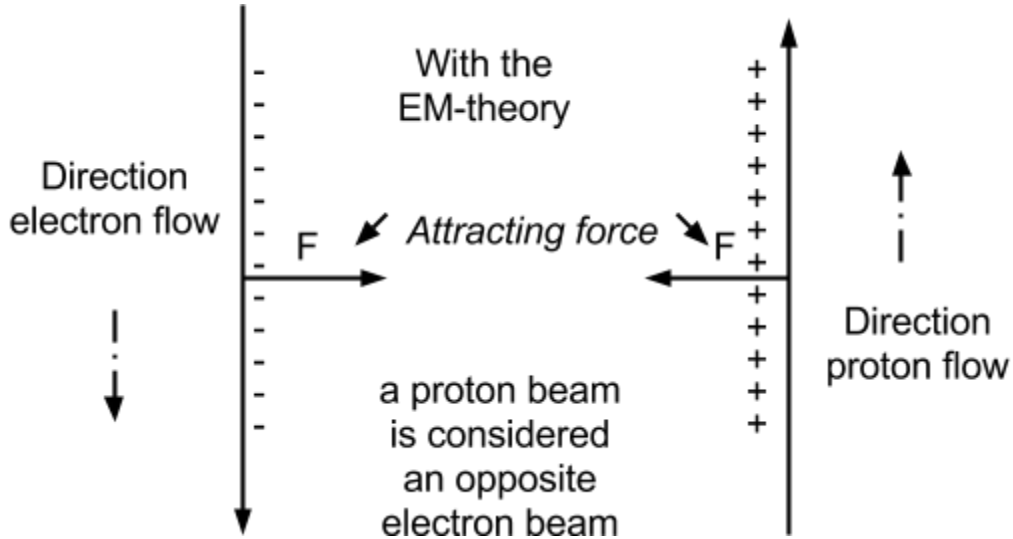
*Figure 44: The attractive force between a proton and electron beam according to EM.*

With aether, it clearly shows that two parallel streams of charged particles, regardless of the charge of the particles have to attract each other when the particles move in the same direction, and vice versa repel when the currents are opposite .
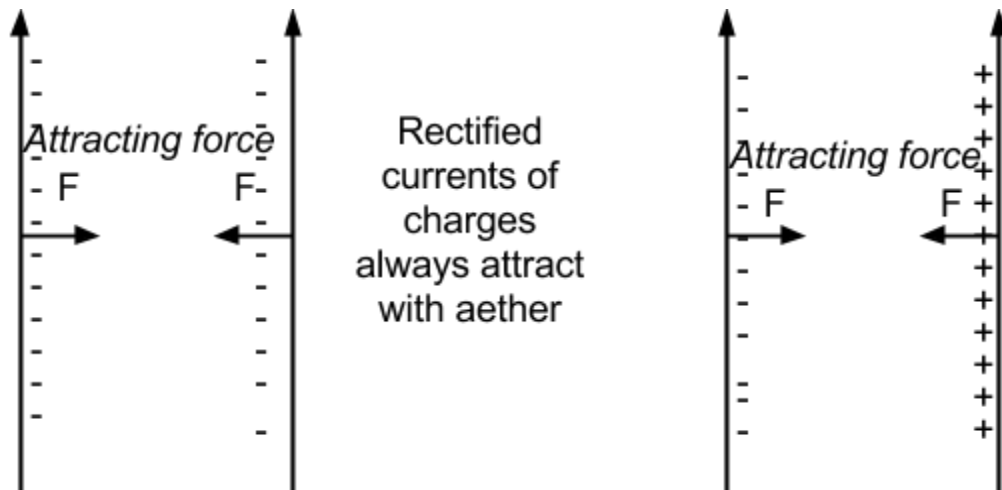


*Figure 45: The force between parallel streams of charged particles with aether*

The distinction between EM and the aether theory is obvious. A parallel flow of protons and electrons, wherein the particles are moving in the same direction, **must** repel according to the EM-theory, while the aether predicts that the beams attract each other. A very basic and simple experiment can therefore determine whether the EM-theory in this respect is correct or not.

You might wonder if this experiment has not already been performed? Remarkably enough, no. The experiment is basically very simple to implement. Place an electron gun, (which I think is present in any physics lab in high schools) parallel to a proton accelerator. The proton beam will not be detected visually, but that's no problem. It is known to which side the protons move. At the electron beam, the idea is to see whether attraction or repulsion takes place. Distortion by the electrostatic force between protons and electrons is protected by the Faraday cage, which is what the shell of the proton accelerator in fact is. The experiment is not at all stressful, since it can be performed even when the proton accelerator is in operation for other purposes.

Scientific institutions were not interested when I suggested this measurement. The argument that this experiment should be carried out in principle to confirm unverified assumptions of the EM-theory, was to no avail. Normally it is scientifically prudent to eliminate assumptions of a theory, if possible. Experimental confirmation of the mentioned assumptions has not been done, and are necessary according to the scientific method.

Scientific institutions fail. Possible an other party can perform the experiment. TNO in the Netherlands carries out measurements on assignment for third parties. I had heard that TNO can use the proton accelerator at the universities for measurements. I therefore asked TNO, on behalf of myself, to perform the measurement at my commission. The response of TNO is that they do not perform electromagnetic measurements. This answer surprised me greatly. I questioned whether an exception could be made but no response was received.

Even such a simple and inexpensive experiment is impossible to realize. Some science journalists remarked sarcastically, that then I must build a proton accelerator myself.

My esteem with regard to the scientists of theoretical physics and science journalists decrease, after unmotivated rejection of the articles and experiments. Not because errors have crept into science, because that is always possible, but the dominant morality that self-interest at the expense of everything must prevail. My previous respectful approach to scientists gives way to a cynical view of how scientists deal with knowledge. A cynical approach seems to me essential to shake up science.

One of the cynical mailings sent to thousands of scientists, universities, science journalists etc., with the title "*AAAS Tolerates Structural Science Fraud*" is to my surprise answered by a Nobel Laureate in Physics. In subsequent correspondence, the

article *"The Equivalence of Magnetic and Kinetic Energy"* and the fundamental physics experiment have been discussed.

Recapitulation of the conversation comes down to this:
When asked what he thinks of the experiment, the answers is: *"I'm not interested"*.
At the request to perform the experiment in his laboratory the answer is: *"Of course not."*

With regard to the article on magnetic and kinetic energy his last words are:
*"I'm not defending Thomson, that was nearly 130 years ago. I am defending my own understanding of EM and QM"*
([For the full correspondence I refer you to the website](#))

Even a Nobel Laureate in Physics has no legitimate argument raised why the article and the measurement are not relevant. The message of science is clear:

**No matter what arguments or evidence is found, previously acquired scientific knowledge is untouchable.**

# Epilogue

Fourteen years ago I had no idea what I was getting into. I was convinced that scientists are seeking the truth, because science is the search for truth. It has been sheer naivety to think that scientists have a morality that transcends self-interest.

The goal from the outset is focused on recognition of the knowledge that aether may exist. The scientific view that vacuum is absolute empty space, makes it impossible to obtain a subsidy for building a fusion reactor based on aether physics. This is impossible as long as mainstream science denies the possibility of aether.

Shortly summarized, we can conclude that stellar aberration is fully explained with dragged aether. If the article about stellar aberration was published before 1905 then Einstein would never have concocted SRT, because there would have been no need for such a theory at all. Where would science be if that had happened?

The theory of the point volume eliminates with the repetitive factor $12^3$ the physical constants as the classical radius of the electron $Rc$, the Bohr radius $Rb$ and the Rydberg constant.

The assumption that aether exists leads to an unambiguous explanation for the mystery of discrete energy levels of atoms and provides a physical explanation for atomic and molecular quantum mechanics. The physical cause for Alpha is revealed and the independent fundamental physics factor, the constant of Planck, is eliminated. As a bonus, the origin of the natural mathematical constants *Pi* and *e* appear, and that is according to scientists just all a coincidence!

The subatomic quantum mechanics (particle physics) have hardly been discussed, but it is shown that the EM-theory, on which the Standard Model is based, is at crucial points, fundamentally incorrect.

Geometry plays no role in the Standard Model, and is not at all applicable. With aether this is the opposite. The geometric configuration determines everything. For nuclear fusion the particles must be guided; manipulated. The chaos of the thermonuclear fusion approach seems far from optimal to achieve fusion when aether exists. According to the scientific discipline of nuclear physics, the radius of the nucleus is about $10^{-12}$ meters. At this scale, a nucleus includes about $10^{18}$ point volumes. With $10^{18}$ point volumes an infinity of possible configurations can be constructed.

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When I was writing the chapter *"Fundamental physics experiment"*, CERN came with the announcement that the Higgs particle is most likely found. The first thing that comes to mind is: "History repeats itself". In 1727 Bradley discovered stellar aberration. In 1905, over 175 years later, there was still no physical explanation at all. The distraught scientists embraced SRT and Einstein as the savior, while the experimental evidence and theoretical consistency of the theory are very suspect.

More than 40 years after the prediction, and after many, many billions are spent, the Higgs particle is not yet found. The particle is absolutely necessary for the validity of the Standard Model. In recent years, doubts grew whether the Higgs particle exists. The scientists are again "desperate" to "prove" their science is not fiction.

The Higgs particle must have specific characteristics. Very likely it is now found, or so says science. What exactly is found is not known, but it is the last hope for the Standard Model.
If the particle does not have the right features, they can still devise a mathematical solution; a new renormalization of the Standard Model, so everything can be fixed mathematically.

It is **always** possible to find mathematical solutions to any problem. Maybe now "anti-parallel sub-dimensions" are going to be the scientific reality. Who can tell?

## Conclusion

It is really not up to me to draw conclusions in this book now. That is up to you, the reader. With what I wrote, I tried to make clear the inaccuracies and limitations I experienced.

It is my intention to alert the non-scientist, as I consider myself to be as well, on the doubtful conclusions science has drawn. I hope that you, after reading the book, will not accept unthinkingly everything that theoretical physics sell as the indisputable truth. It convinced the world that common sense cannot fathom the subatomic world. This is, according to this science, only granted to individuals who are able to comprehend higher mathematics.

By relative simple mathematics and common sense I think I have demonstrated that the practitioners of theoretical physics are not omniscient. In the past 14 years, scientists have refused categorically to answer my questions, whereas I'm convinced I didn't just talk nonsense. Theoretical physics has established such distances between men and science that scientists per definition consider a scrupulous questioner an idiot.

It is important that one should not consider it impossible that scientists have little notion of what they're up to, and that they therefore don't understand how the subatomic physics can be explained in a logical way. There is the possibility that science will oppose scientific, economical, social and meteorological developments by unmitigated overestimation for many decades to come. From which point of view, the described subjects are considered, the conclusion is,

***Unbelievable****.*

*P.s. There is a conclusion I dare to make and that is that Science will not correct the mistakes unless they are forced to do so; it is all too embarrassing.*

*If you agree Science must correct the omissions, please forward the link of "Unbelievable" (http://www.paradox-paradigm.nl/wp-content/uploads/Unbelievable.pdf) to persons who are interested. The public opinion is the only option left that is able to force Science to adopt the necessary changes.*