A New and Sound Way of Making Physics; a Challenge for Excellent Computational Physicists and Programmers

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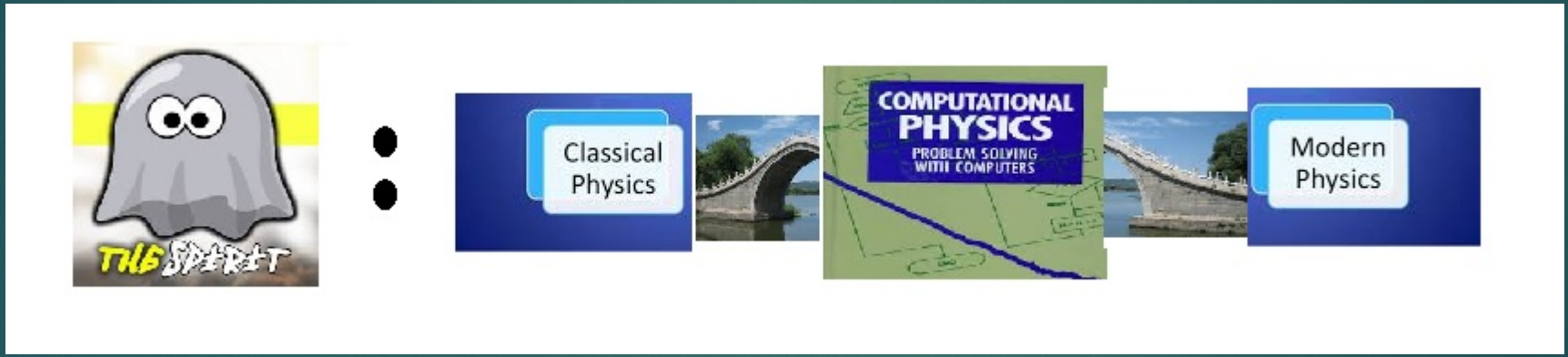
Its Spirit:

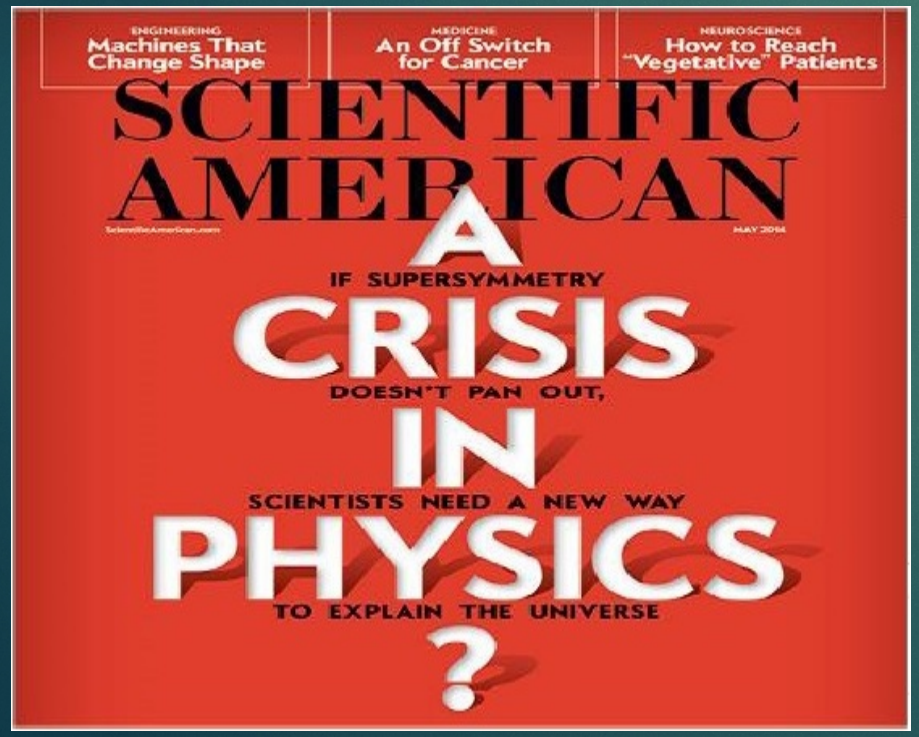
The spirit of the Project is to investigate the possibilities of describing the behavior of matter in atomic scale via the methods of classical physics with the help of high speed computers.



Justification:

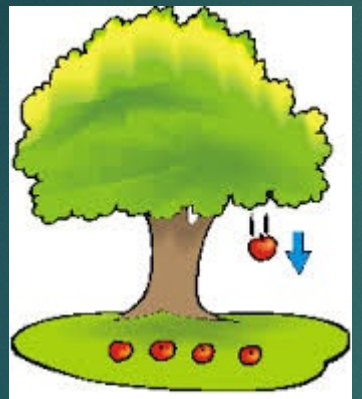
As Dr. Alfven underlined in 1986 ".. there was once a discipline called natural philosophy, unfortunately, this discipline seems not to exist today. It has been renamed science, but science of today is in danger of losing much of the natural philosophy aspect." [1].

- Physics the math has brought us to claim all things around us are illusions which is very probably an improper claim. We need to try to revitalize classics as done previously, though only to a certain extent possible at that time, which Figure 2 tries to stimulate.

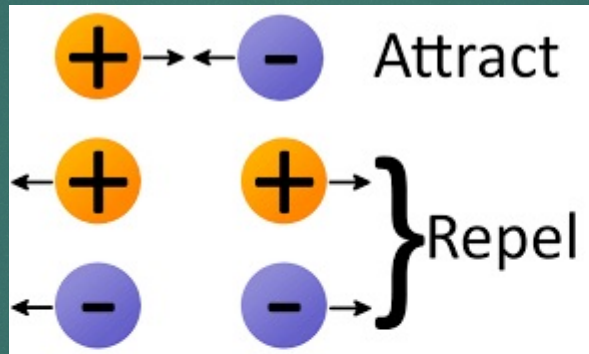


A fundamental conclusion of the new physics acknowledges that the observer creates the reality. As observers, we are personally involved with the creation of our own reality. Physicists are being forced to admit that the universe is a “mental” construction. Pioneering physicist Sir James Jeans wrote: “The stream of knowledge is heading toward a non-mechanical reality; the universe begins to look more like a great thought than like a great machine. Mind no longer appears to be an accidental intruder into the realm of matter, we ought rather hail it as the creator and governor of the realm of matter. Get over it, and accept the inarguable conclusion. The universe is immaterial-mental and spiritual .

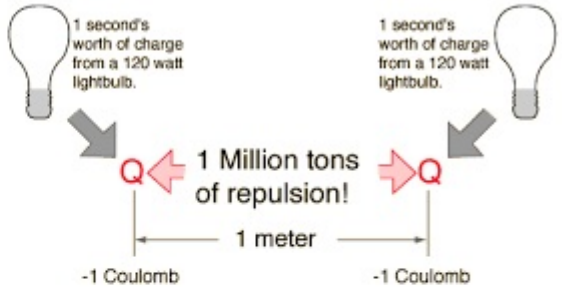
Classical semi-missteps on the way,



Kinematics is well formulated, reason still not understood.



Kinematics is well formulated, reason still not understood.
using a "-" sign is just like saying "donkey".



extremely strong in comparison with gravitational force.
emphasis is on "particle" as we call charged particle, charge handled as if it is/were an adjective.

Modern semi-missteps on the way

1. SPECIAL THEORY of RELATIVITY

The letter below is fake, but

The First Postulate of Special Relativity

Einstein reasoned all motion is relative and all frames of reference are arbitrary.

The Second Postulate of Special Relativity

The speed of light is constant regardless of the speed of the flashlight or observer.

EINSTEIN'S POSTULATES OF SPECIAL THEORY OF RELATIVITY

- **The First Postulate of Special Relativity**

The first postulate of special relativity states that all the laws of nature are the same in all uniformly moving frames of reference.

Is a point particle measuring the speed of light as it travels with .9 c ? If yes, how?

The Second Postulate of Special Relativity

Einstein concluded that *if* an observer could travel *close* to the speed of light, he would measure the light as moving away at 300,000 km/s. Einstein's **second postulate of special relativity** assumes that the speed of light is constant.

The postulates themselves don't have to make "common" sense. As with all postulates in science, the test of their validity is that they lead to predictions that we can test.

* Hannes Alfv´en NP for Physics in 1970 : Many people probably felt relieved when told that the true nature of the world could not be understood except by Einstein and a few other geniuses who were able to think in four dimensions. They had tried to understand science, but now it was evident that science was something to believe in, not something which should be understood [10].

UNIVERSITY OF BERN

06 June, 1907

Dear Mr. Einstein,

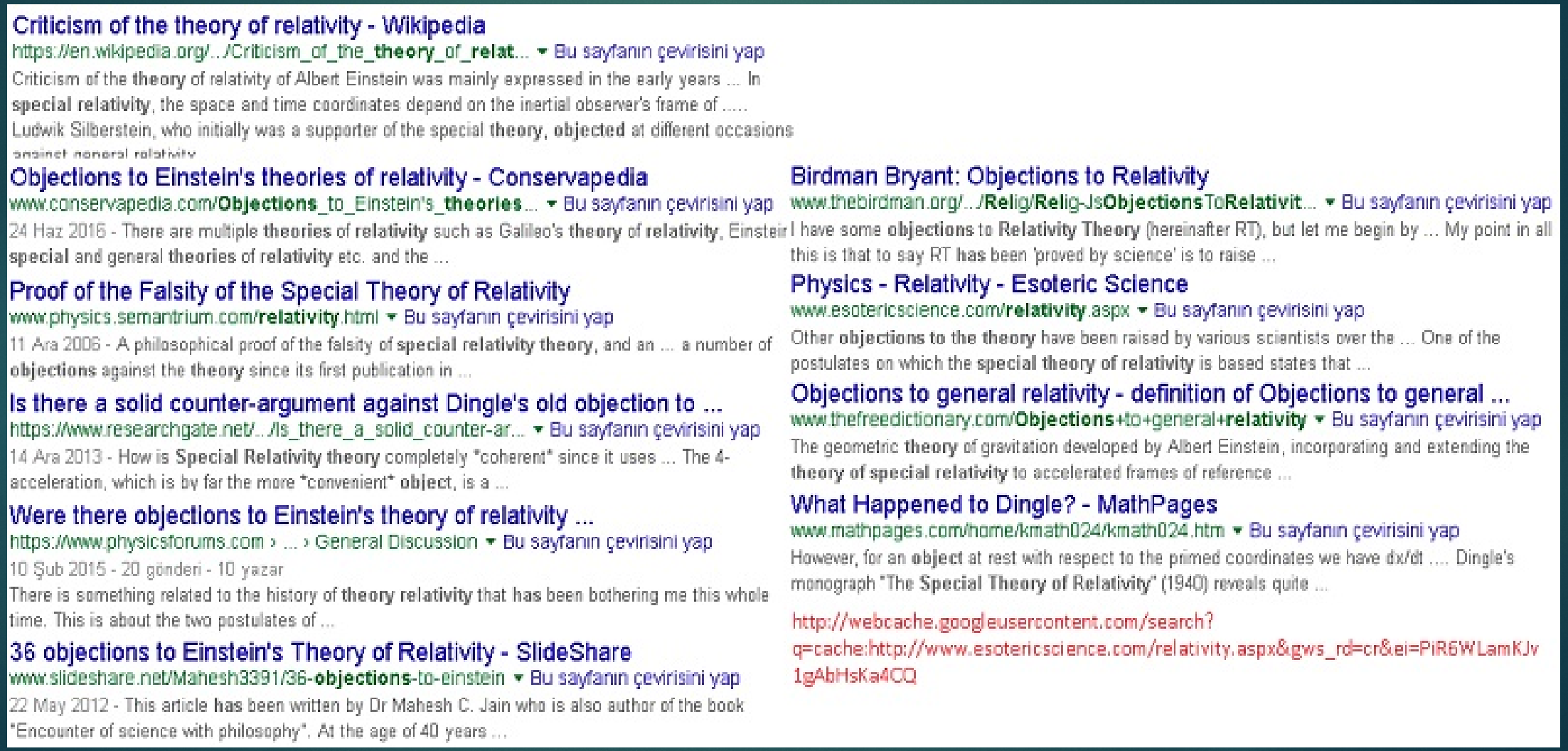
Your application for the Doctorate has not been successful at this time and as such you are not eligible for the position of Associate Professor.

While you posed an interesting theory in your article publishe in "Annalen der Physik", we feel that your conclusions about the nature of light and the fundamental connection between spa and time are somewhat radical. Overall, we find your assumptio to be more artistic than actual Physics.

Sincerely yours,

Professor Wilhelm Heinrich, Ph.D.
Dean of Sciences

These and much more are real …



Criticism of the theory of relativity - Wikipedia
https://en.wikipedia.org/.../Criticism_of_the_**theory**_of_**relat**... ▾ Bu sayfanın çevirisini yap
Criticism of the **theory** of relativity of Albert Einstein was mainly expressed in the early years ... In **special relativity**, the space and time coordinates depend on the inertial observer's frame of ..... Ludwik Silberstein, who initially was a supporter of the special **theory**, **objected** at different occasions against general relativity

Objections to Einstein's theories of relativity - Conservapedia
www.conservapedia.com/**Objections**_to_Einstein's_**theories**... ▾ Bu sayfanın çevirisini yap
24 Haz 2016 - There are multiple **theories** of **relativity** such as Galileo's **theory** of **relativity**, Einstein **special** and general **theories** of **relativity** etc. and the ...

Proof of the Falsity of the Special Theory of Relativity
www.physics.semantrium.com/**relativity**.html ▾ Bu sayfanın çevirisini yap
11 Ara 2006 - A philosophical proof of the falsity of **special relativity theory**, and an ... a number of **objections** against the **theory** since its first publication in ...

Is there a solid counter-argument against Dingle's old objection to ...
https://www.researchgate.net/.../Is_there_a_solid_counter-ar... ▾ Bu sayfanın çevirisini yap
14 Ara 2013 - How is **Special Relativity theory** completely "coherent" since it uses ... The 4-acceleration, which is by far the more "convenient" **object**, is a ...

Were there objections to Einstein's theory of relativity ...
https://www.physicsforums.com › ... › General Discussion ▾ Bu sayfanın çevirisini yap
10 Şub 2015 - 20 gönderi - 10 yazar
There is something related to the history of **theory relativity** that has been bothering me this whole time. This is about the two postulates of ...

36 objections to Einstein's Theory of Relativity - SlideShare
www.slideshare.net/Mahesh3391/36-**objections**-to-einstein ▾ Bu sayfanın çevirisini yap
22 May 2012 - This article **has** been written by Dr Mahesh C. Jain who is also author of the book "Encounter of science with philosophy". At the age of 40 years ...

Birdman Bryant: Objections to Relativity
www.thebirdman.org/.../**Relig**/**Relig**-Js**Objections**To**Relativit**... ▾ Bu sayfanın çevirisini yap
I have some **objections** to **Relativity Theory** (hereinafter RT), but let me begin by ... My point in all this is that to say RT **has** been 'proved by science' is to raise ...

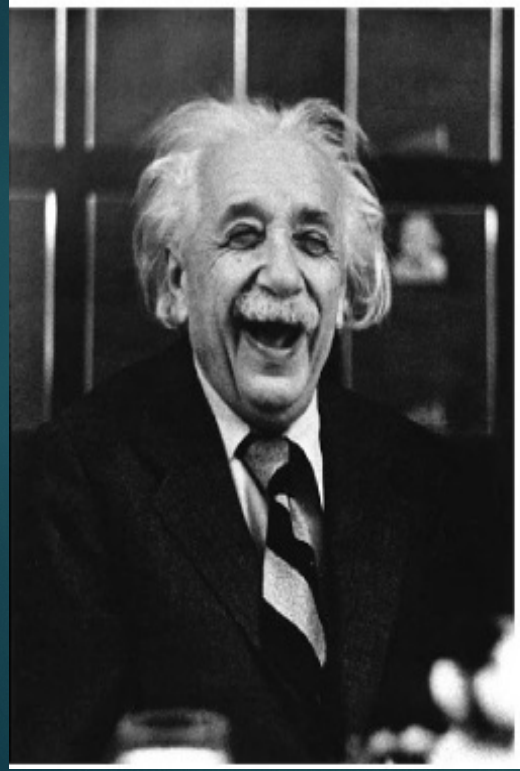
Physics - Relativity - Esoteric Science
www.esotericscience.com/**relativity**.aspx ▾ Bu sayfanın çevirisini yap
Other **objections** to the **theory** have been raised by various scientists over the ... One of the postulates on which the **special theory** of **relativity** is based states that ...

Objections to general relativity - definition of Objections to general ...
www.thefreedictionary.com/**Objections**+to+general+**relativity** ▾ Bu sayfanın çevirisini yap
The geometric **theory** of gravitation developed by Albert Einstein, incorporating and extending the **theory** of **special relativity** to accelerated frames of reference ...

What Happened to Dingle? - MathPages
www.mathpages.com/home/kmath024/kmath024.htm ▾ Bu sayfanın çevirisini yap
However, for an **object** at rest with respect to the primed coordinates we have dx/dt .... Dingle's monograph "The **Special Theory** of **Relativity**" (1940) reveals quite ...

http://webcache.googleusercontent.com/search?q=cache:http://www.esotericscience.com/relativity.aspx&gws_rd=cr&ei=PiR6WLamKJv1gAbHsKa4CQ

Best collection of objections to modern physics.



Dr Faustus of Modern Physics

Preface

This book describes how modern physics based on relativity theory and quantum mechanics was born in the beginning of the 20th century from a collapse of classical physics. The new baby was the result of a couple of scientific paradoxes, which appeared unsolvable using classical deterministic continuum models, crowned by Maxwell's equations for electromagnetics formulated in 1865 by the British physicist Clerk Maxwell.

Theoretical science cannot tolerate paradoxes or contradictions, because in a contradictory theory everything is both true and false at the same time, and thus a paradox presented by some critics of a theory must be handled one way or the other by the proponents of the theory. A paradox can be deconstructed by showing that it is only an apparent paradox, not a real paradox, which is the only scientifically acceptable solution.

If this turns out to be impossible, a second defense line may be to simply deny the existence of the paradox, another to claim that even if the paradox appears to be a real contradiction, such as the contradicting wave and particle pictures of quantum mechanics, it can be accomodated as *wave-particle duality* or *wave-particle complementarity* as a form of augmented reality without contradiction.

I shall present evidence in the form of a little tribunal that modern physics never really resolved the paradoxes of classical physics from which it was born, and that this failure has developed into a trauma of modern physics with negative consequences in fact for all of science ultimately based on physics.

I have to chosen to present the key issues in common language without mathematical formulas to a tribunal with the reader as the jury, where the main "fathers of modern physics" Boltzmann, Planck, Einstein and Bohr, are faced with certain accusations, and the jury listens to confessions by the accused and to witnesses, all in the form of direct quotes from the scientists involved.

Claes Johnson

Modern semi-missteps on the way
2. Quantum Mechanics

Schrödinger's Equation

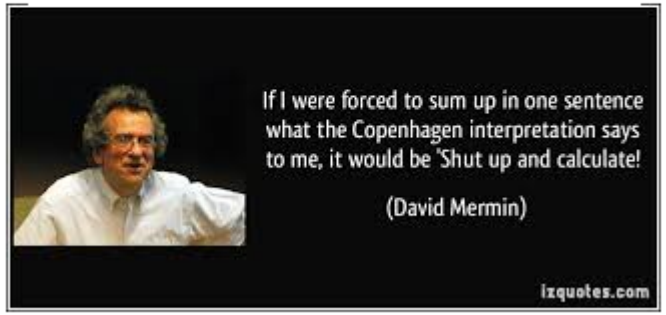
$$i\hbar\frac{\partial}{\partial t}\psi(\mathbf{r},t) = -\frac{\hbar^2}{2m}\nabla^2\psi(\mathbf{r},t) + V(\mathbf{r},t)\psi(\mathbf{r},t)$$

i is the imaginary number, $\sqrt{-1}$.
$\hbar$ is Planck's constant divided by 2π: 1.05459×10^{-34} joule-second.
$\psi(\mathbf{r},t)$ is the wave function, defined over space and time.
m is the mass of the particle.
∇^2 is the Laplacian operator, $\frac{\partial^2}{\partial x^2} + \frac{\partial^2}{\partial y^2} + \frac{\partial^2}{\partial z^2}$
$V(\mathbf{r},t)$ is the potential energy influencing the particle.

Basically Schroedinger Equation.
First order in time (diffusion)
Second order in space (oscillations)
Complex coefficient means exponential behavior also in space
No physical justification except for plausibility arguments

+

Copenhagen Interpretation of Quantum Mechanics



- A system is completely described by a wave function ψ, representing an observer's subjective knowledge of the system.
- The description of nature is essentially probabilistic, with the probability of an event related to the square of the amplitude of the wave function related to it.
- It is not possible to know the value of all the properties of the system at the same time; those properties that are not known with precision must be described by probabilities. (Heisenberg's uncertainty principle)
- Matter exhibits a wave–particle duality. An experiment can show the particle-like properties of matter, or the wave-like properties; in some experiments both of these complementary viewpoints must be invoked to explain the results.
- Measuring devices are essentially classical devices, and measure only classical properties such as position and momentum.
- The quantum mechanical description of large systems will closely approximate the classical description.

The Wave Function

3.1 QUANTUM MECHANICS

The best way to learn what something is is to calculate via/through it. Let us then give a summary of the calculations regarding the simplest atom, hydrogen. An excellent calculation is given in [14].

- Schroedinger equation is to be used and solved. It is $\hat{H}\Psi = E\Psi$. $\hat{H}$ is the Hamiltonian which is the total energy, i.e. kinetic + potential energies. The kinetic energy is obtained via $(p^2)/2m$. For p* and E their operator forms are used and how this is done is shown in [14] and [15].

  Why this is done is not well known. A kind of "c'est la vie" story. Eugen Merzbacher gives some justifications in his book of quantum mechanics.
- The equation is written in polar coordinates and separation of varibles is made, i.e. The wave function is written in the form $\Psi(r,\Theta,\Phi) = R(r) \cdot Y(\Theta,\Phi)$.
- Angular part is separated into polar and azimuth parts, i.e. $Y(\Theta,\Phi) = \Theta(\Theta) \cdot \Phi(\Phi)$ form is used.
- Azimuth part is solved. It includes the parameter m (the quantum number) and the imaginary number i as exponent and the form is exponential. That meana exponential decay and oscillatory behavior is to be expected.
- Polar part is solved for each quantum number m, the solution is Legendre polynomials.
- Radial part is solved and the 3 terms , each being a solution of a part, are put togeter.

For diffferent l , m and n the forms of wave functions are given in the Figure 3 . There we have problems. If we say Ψ is wave (amplitude) we have difficulties with negative values ; if we say its norm is to be considered, we can hardly avoid Schroedinger's* and my objections [16 (Section 5.2.)].

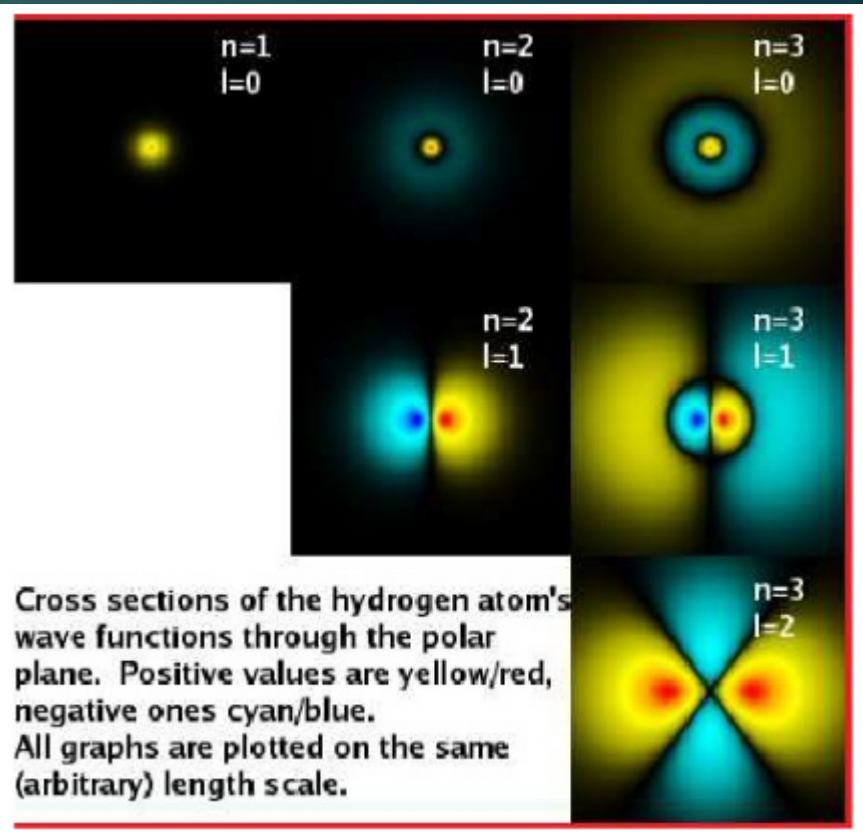


Figure 3 : Hydrogen atom wave functions.

* I can't imagine that an electron hops around like a flea (Schroedinger) [10]. Our objections are the same.

The Norm

There are two difficulties:

1. Electrons coming from outside as point particles can hardly get moving with the distributions seen on the figure. I can not visualize such a picture.

2. From the picture given we can never visualize/animate the way a photon is emitted. We can never get the picture of the photon emitted. The photon is not there, energy happens to be a photon.

Not being able to visualize means sacrifices from our prediction ability which should be the aim of making theories.

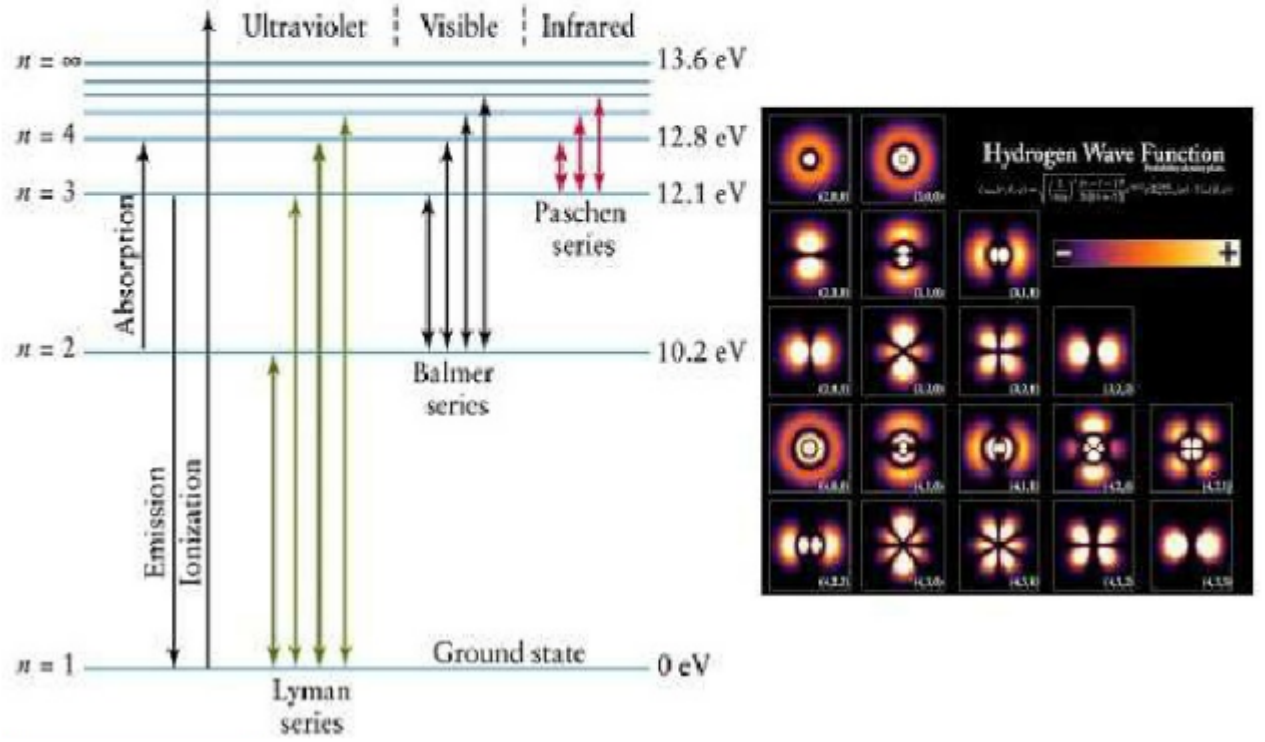


Figure 6. Energy Levles and Quantum States of Hydrogen Atom.

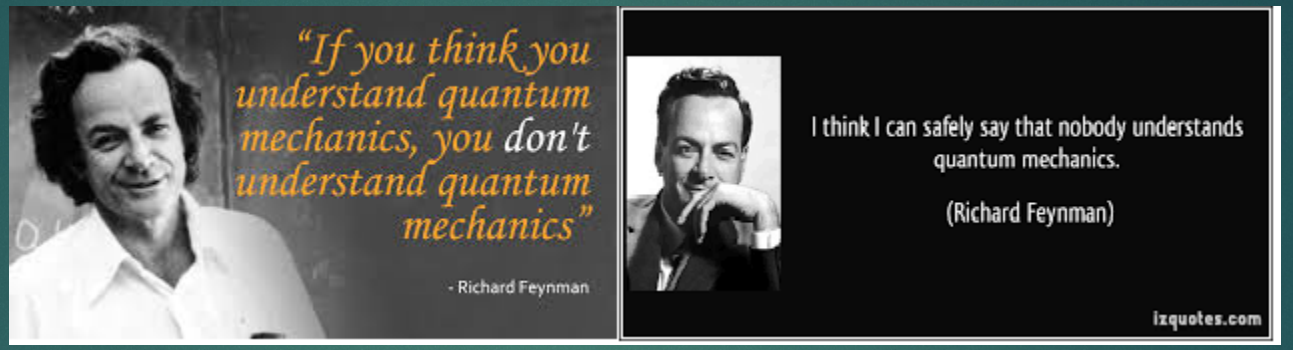
Objections

- As the theory of the atom, quantum mechanics is perhaps the most successful theory in the history of science. It enables physicists, chemists, and technicians to calculate and predict the outcome of a vast number of experiments and to create new and advanced technology based on the insight into the behavior of atomic objects. But it is also a theory that challenges our imagination. It seems to violate some fundamental principles of classical physics, principles that eventually have become a part of western common sense since the rise of the modern worldview in the Renaissance. So the aim of any metaphysical interpretation of quantum mechanics is to account for these violations.
- There is no quantum world. There is only an abstract quantum mechanical description. It is wrong to think that the task of physics is to find out how Nature is. Physics concerns what we say about Nature.

** It was really because quantum theory, and to a lesser extent relativity theory, were never understood adequately in terms of physical concepts that physics gradually slipped into a practice of talking mostly about the equations....To some extent this began as early as the 1920s when the astronomer Sir James Jeans proposed that God must be mathematician. Heisenberg later gave it enormous boost with his idea that science could no longer visualize atomic reality in terms of physical concepts and that mathematics is the basic expression of our knowledge of reality....Now I don't agree with these developments. In fact, I feel that the current emphasis on mathematics has gone too far [3].*

*** Quantum theory makes the most accurate empirical predictions. Yet it lacks simple, comprehensible physical principles from which it could be uniquely derived. Without such principles, we can have no serious understanding of quantum theory and cannot hope to offer an honest answer—one that's different from a mere "The world just happens to be that way"—to students' penetrating questions of why there is indeterminism in quantum physics, or of where Schrödinger's equation comes from. The standard textbook axioms for the quantum formalism are of a highly abstract nature, involving terms such as "rays in Hilbert space" and "self-adjoint operators." And a vast majority of alternative approaches that attempt to find a set of physical principles behind quantum theory either fall short of uniquely deriving quantum theory from these principles, or are based on abstract mathematical assumptions that themselves call for a more conclusive physical motivation [4].*

Objections



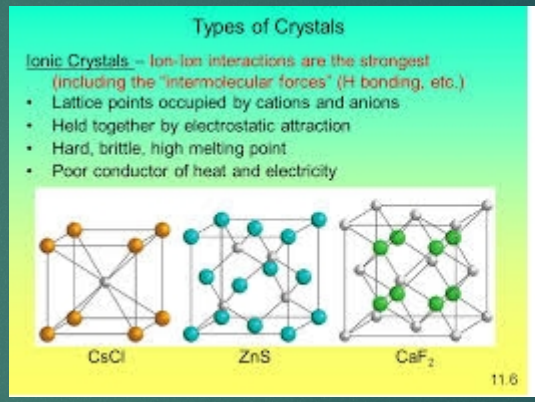
*** *A fundamental conclusion of the new physics acknowledges that the observer creates the reality. As observers, we are personally involved with the creation of our own reality. Physicists are being forced to admit that the universe is a "mental" construction. Pioneering physicist Sir James Jeans wrote: "The stream of knowledge is heading toward a non-mechanical reality; the universe begins to look more like a great thought than like a great machine. Mind no longer appears to be an accidental intruder into the realm of matter, we ought rather hail it as the creator and governor of the realm of matter. Get over it, and accept the inarguable conclusion. The universe is immaterial-mental and spiritual [5].*

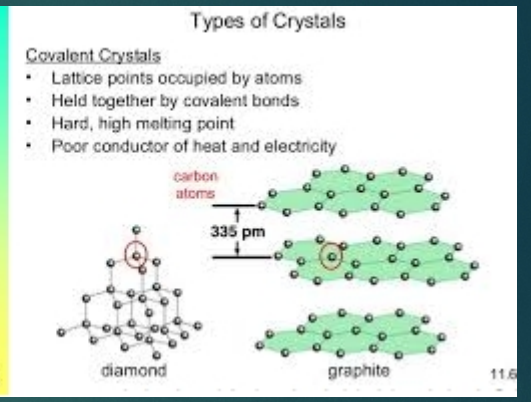
As Dr. Feynman has pointed out in in in 1956 the old problem of the relation of science and religion is still with us as difficult a dilemma as ever [1]. Without resolving this dilemma we will never know to which extent we are the Lord/ruler of the affairs on Earth; we will never know if we will soon be able to overcome difficulties of the day; we will never know if an afterlife is on the carpet; and we will never know what is expected from us.

Scientific consequence:
The theory is of almost no use, experiment (trial and error) leads (extremely expensive, isolde)

When trying to learn something about solids, the biggest problem one encounters is that a macroscopic solid contains very many (10^{23}) atoms. It is therefore impossible to solve any equations of motion, classical or quantum, in a direct way. The key for a quantitative description of the electronic and vibrational properties of solids is the fact that most solids are crystals and the crystal symmetry can be exploited to greatly facilitate the solution of the problem. This Chapter thus reminds you about the description of crystals in real and reciprocal space and it explains some basic ideas relating the surface properties to those of the bulk.

We divide the properties of a solid into electronic contributions and lattice vibrations. This division is not without problems: In principle one would have to solve the Schrödinger equation for the whole system, with the co-ordinates of all the electrons and all the ions. The reason why separating the electronic and vibrational degrees of freedom works well, is that the ions are so much heavier and slower than the electrons. When the ions move out of their equilibrium-position the electrons follow quickly but they stay in their ground state. They just move to another ground-state with higher energy. When the ions are moving back, the electrons follow to their initial ground state. The good approximation that the electrons remain in their ground state is called *adiabatic* or *Born-Oppenheimer* approximation.





The details of neither electrostatic forces nor covalent bonding is well understood, as our interest tends to consider domains of dimensions below a nanometer, we have difficulties.

General consequence

As Dr. Feynman has pointed out in in in 1956 the old problem of the relation of science and religion is still with us as difficult a dilemma as ever [1]. Without resolving this dilemma we will never know to which extent we are the Lord/ruler of the affairs on Earth; we will never know if we will soon be able to overcome difficulties of the day; we will never know if an afterlife is on the carpet; and we will never know what is expected from us.

Alternative 1

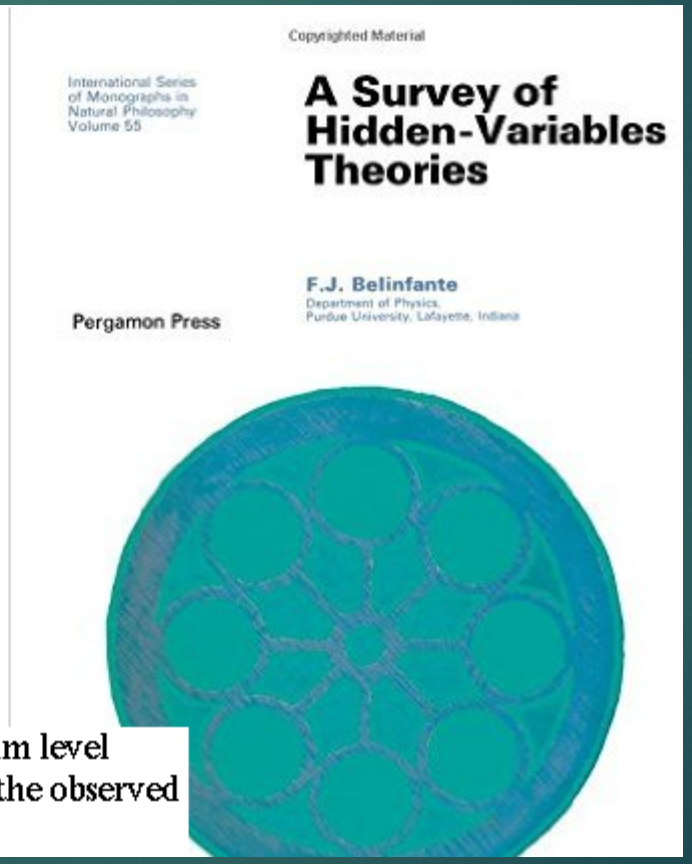
Hidden variables

- Local hidden variable theory
  - *Locality*
    - Principle that an object is only directly influenced by its immediate surroundings
  - EPR paradox – showed non-locality of quantum mechanics
    - Two photon that separated so far apart
    - The measurement of one photon ⇒ determining the other one's states
  - *Local hidden variable*
    - a quantity whose value is presently unknown with local property

"Spooky action at a distance!"

Quantum Mechanics(14/2) *Hoseong Lee*

The hidden variables hypothesis assumes that far below the quantum level lies deterministic parameters, unseen to the observer, that control the observed quantum numbers.



None Successful To date.

Alternative 2

De Broglie's double solution theory is a sketch of an interpretation of quantum mechanics. The core idea, put forward by Prince Louis de Broglie is that there is alongside Schrodinger's equation, a second wave (this one obeying a non-linear equation) which he called a "matter wave". De Broglie proceeded by analogy to hydrodynamics, working to formulate a new wave equation that would give him soliton-type solutions for the matter wave that would represent "particles" — this whole wave would then be guided dynamically by the Schrodinger wave.

II. The double solution theory and the guidance rule

I cannot review here in detail the present state of the double solution theory. A complete presentation may be found in the referenced publications. However I would like to insist on the two main and basic ideas of this interpretation of Wave Mechanics. A/- In my view, the wave is a physical one having a very small amplitude which cannot be arbitrarily normed, and which is distinct from the ψ wave. The latter is normed and has a statistical significance in the usual quantum mechanical formalism. Let v denote this physical wave, which will be connected with the statistical ψ wave by the relation $\psi = Cv$, where C is a normalizing factor. The ψ wave has the nature of a subjective probability representation formulated by means of the objective v wave. This distinction, essential in my opinion, was the reason for my naming the theory "Double solution theory", for v and ψ are thus the two solutions of the same wave equation. B/- For me, the particle, precisely located in space at every instant, forms on the v wave a small region of high energy concentration, which may be likened in a first approximation,

The Theory of Double Solution by L. de Broglie

III. Further study of the double solution theory

Following the sketch of the double solution theory considered above, its fundamental equations will be hereafter developped starting with Schrödinger and Klein-Gordon's wave equations, i.e. without introducing spin. The extension of what follows to spin 1/2 particles as the electron, and to spin 1 particles as the photon, may be found in books (3*a*) and (3*b*). The study will be limited to the case of the v wave following the non-relativistic Schrödinger equation, or the relativistic Klein-Gordon equation, which for the Newtonian approximation ($c \to \infty$) degenerates to the Schrödinger equation.

It is well known that an approximate representation of the wave properties of the electron is obtained in this way.

First taking Schrödinger's equation for the v wave, U being the external potential, one gets :

$$\frac{\partial v}{\partial t} = \frac{\hbar}{2im}\Delta v + \frac{i}{\hbar}U.v \qquad (6)$$

This complex equation implies that the v wave is represented by two real functions linked by the two real equations, which leads to :

$$v = a.\exp(i\phi/\hbar) \qquad (7)$$

where a the wave's amplitude, and ϕ its phase, are real. Taking this value into eq. (6), readily gives :

$$\frac{\partial \phi}{\partial t} - U - \frac{1}{2m}(\overrightarrow{\text{grad}}\,\phi)^2 = -\frac{\hbar^2}{2m}.\frac{\Delta a}{a} \qquad (J)$$

Not Successful

Our proposal

And the new assumptions are:
1_N. Matter is made up of uncreatable and undestructible infinitely hard tiny microspheres moving in space with a constant speed which is equal to the speed of light.
2_N. During collisions the motion of the center of mass is conserved. İn case of collisions with stationary center of mass, angles of incidence (the angle between the direction of incidence and the tangent plane to the point of collision) and reflection (the angle between the tangent plane to the point of collision and the direction of reflection) are equal.

Advantage:

- Nobel Price in Physics is guaranteed in case of success.

Disadvantages:

- Extremely heavy calculational load.
- Great deal of unkowns.
- Use, if any, will be made by the indutrialised countries.
- Will be of some use for Turkey if connection to a known natural resource like Boron can be made by nanotechnology (cathalytic converter).

Justification 1

- There exist a couple of dozen of particles called elementary particles. Most of them live short and only two of them, electron and proton, live eternal within the limits of our measures.
- Light, as well as all of the other elementaries, behave both wave-like and particle-like. They behave like a wave as they get accelerated to higher velocities.
- There are some conservation laws and within these laws particles are transformable to each other.
- Every particle has an antiparticle and coming under definite conditions together a particle an an anti transforms into light. The reverse is also true. It is possible to create a pair out of light.
- If mass is annihilated, other forms of energy behind light may begin to come into existence and then be radiated.
- It is not possible to accelerate matter beyond speed of light. Acceleration gets harder as the speed increases.
- If mass is destroyed, the amount of radiated energy is equal to mass times the square of the speed of light which is to be mathematically expressed as equation (1).

$$E=m*c^2 \qquad (1)$$

The last property by itself would directly remind of particles traveling with the speed of light if it were half of the given product. Knowing the validity of equation (1) the following cases should be considered:

1. the velocity of the hidden particles is square root of two times the speed of light and the velocity of the wave is c.
2. if mass of an ordered bundle of particles gets randomized, the number of hidden particles getting randomized is twice the number inside the bundle
3. hybrid cases

Our approach is in reality a trial-and-error approach. We do have no possibility to determine the physical properties of these assumed particles since they are the means to observe and the observed and most probably indistinguishable. The sound approach can only be assumptions-calculations-verifications associated with the bulks. All

Justification 2

The problem is that particles and fields are being handled as separate entities , an integral handlings fails which was prone to fail before the properties of elementary particles were discovered *. Let us investigate further via some simple calculations regarding the electric forces between two stable particles, electron and proton (disregarding magnetic force for the time being and assuming one of the particles are forced to stay at rest).

Electron's mass: 9.1×10^{-31} kg

Proton's mass: 1.67×10^{-27} kg

Magnitude of the force at 1 F : 230 N

Magnitude of the force at 2 F : 57.5 N

Focusing on classical e-e interaction:

Average acceleration and force between 1 and 2 F: 12.86×10^{31} m/s^2 and 115 N

Time required for displacement: $.39 \times 10^{-23}$ s

Final velocity if initial is 0: 12.86×10^{31} m/s^2 x $.39 \times 10^{-23}$ s = 5.07×10^{8} m/s

Kin. E. : $.5 \times 9.1 \times 10^{-31}$ kg x 25.72×10^{16} Joule = 1.17×10^{-13} Joule

E=force x way=115 N x 10^{-15} m = 1.15×10^{-13} Joule

r. m. energy of electron = 0.82×10^{-13} Joule

That is, more energy than the rest mass energy of an electron is needed to accelerate an electron at rest from 1 to 2 F under the force of another electron forced to stay at rest. This energy is supplied by the field which was previously vacuum and created by the presence of the charge of an electron, a point particle without any structure, and how this energy is created is obscure. Quite an interesting scientific description of the event.

If a proton forced to stay at rest accelerates the electron only about 1 promil of its rest mass energy will be required to achieve the same effect.

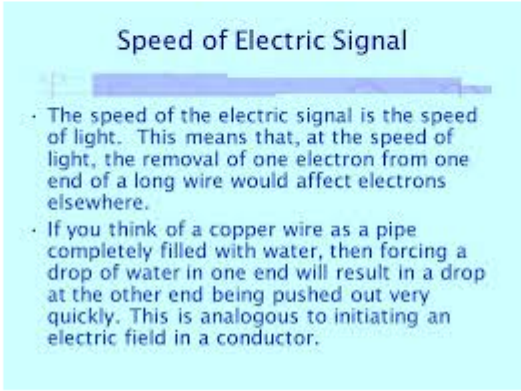
Justification 3

What is the speed of electric current?

If i switch on light, how will i know how much time it would take for the light to glow?

the speed of light, often called "c", in the lower case, commonly refers to the speed of light in a vacuum, which is the fastest it will go. Its about 300 million meters per second.

The propogation of electric field, or electrical signalling using electrical signals in a wire is a bit slower. It can be anywhere from about 50% of c to 99% of c, depending upon the wire and insulation composition and construction. See the wiki article



Done 1
Angular scattering

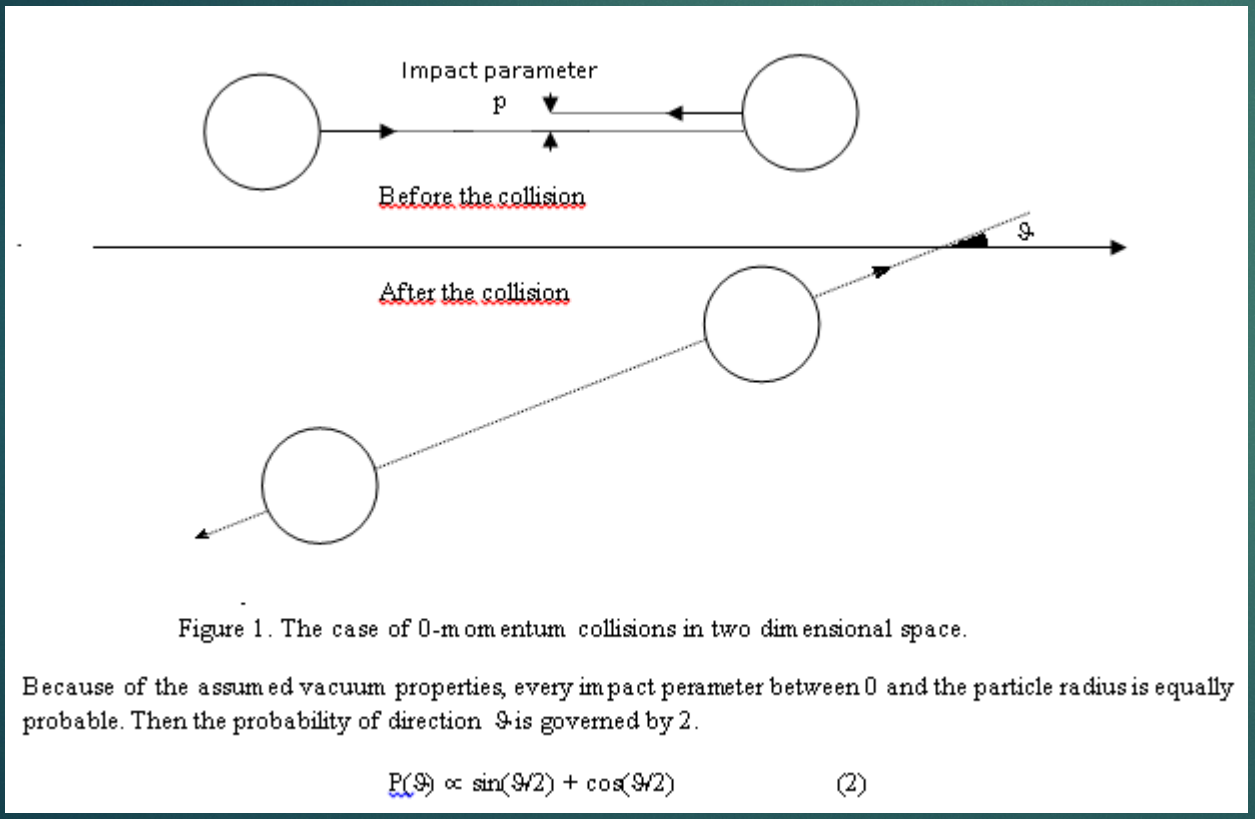
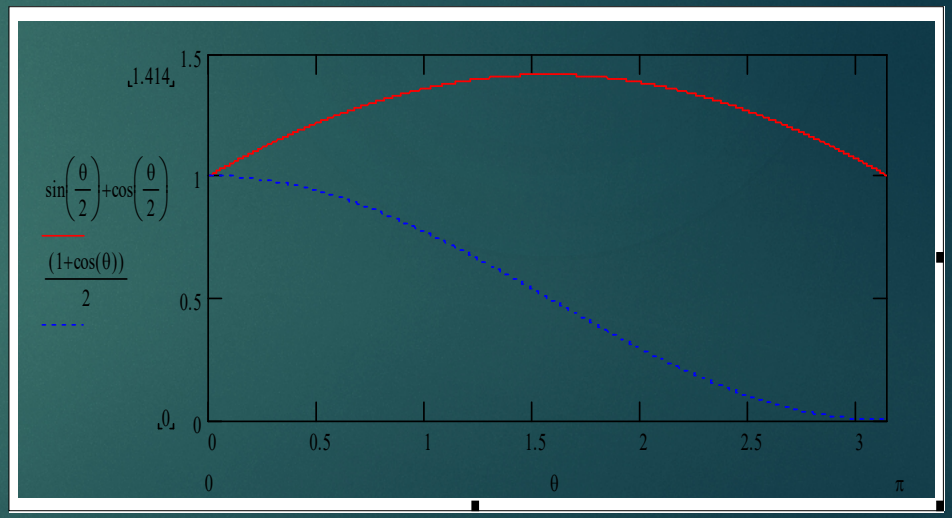


Figure 1. The case of 0-momentum collisions in two dimensional space.

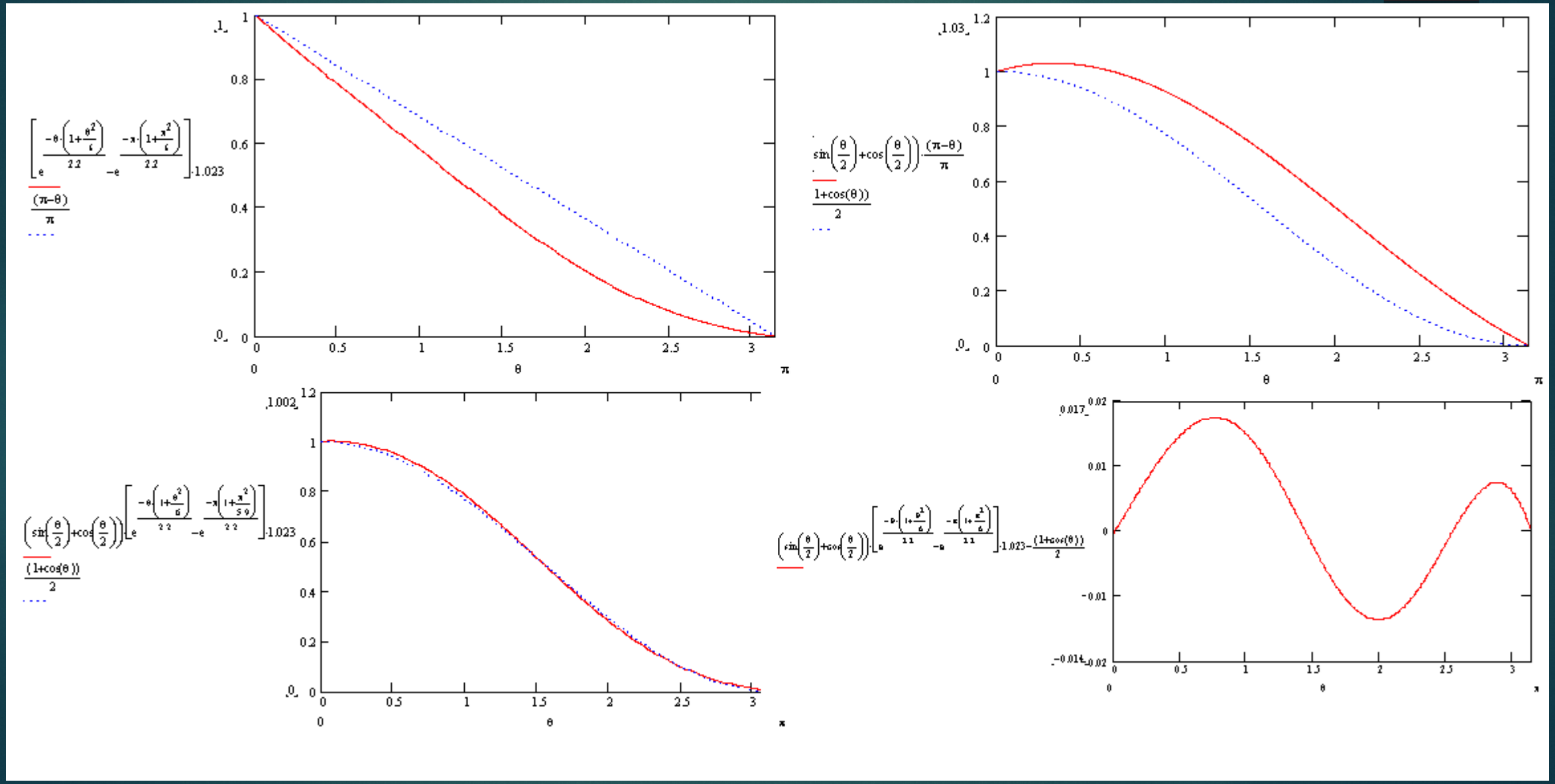
Because of the assumed vacuum properties, every impact perameter between 0 and the particle radius is equally probable. Then the probability of direction ϑ is governed by 2.

$$P(\vartheta) \propto \sin(\vartheta/2) + \cos(\vartheta/2) \qquad (2)$$



Done

Kichoff's contribution to Huygens' construction (obliquity factor)



Definition
The unit/basic cell

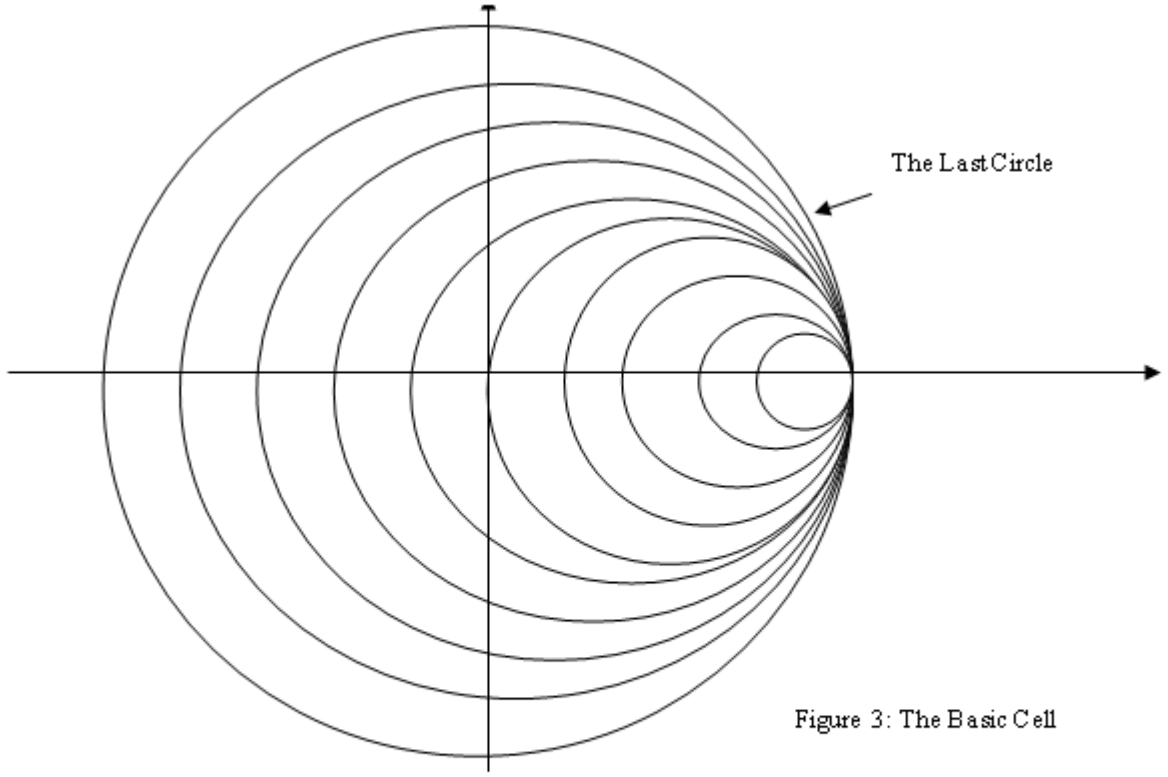
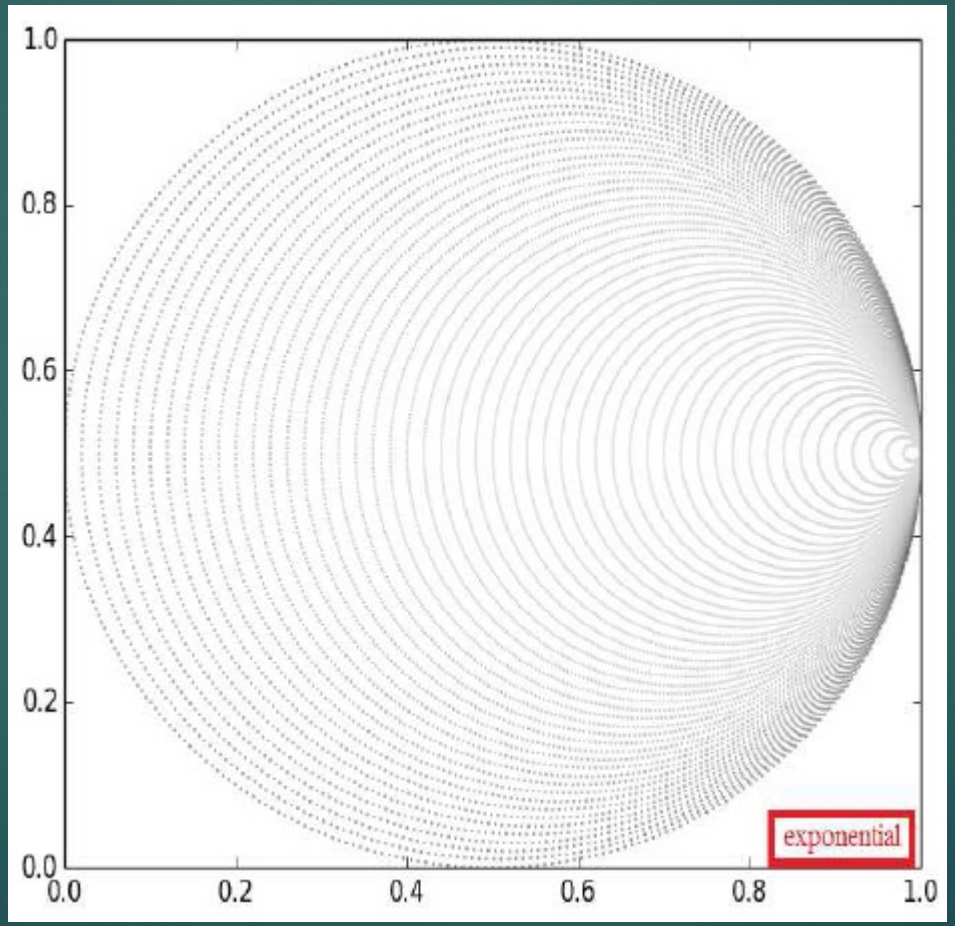


Figure 3: The Basic Cell

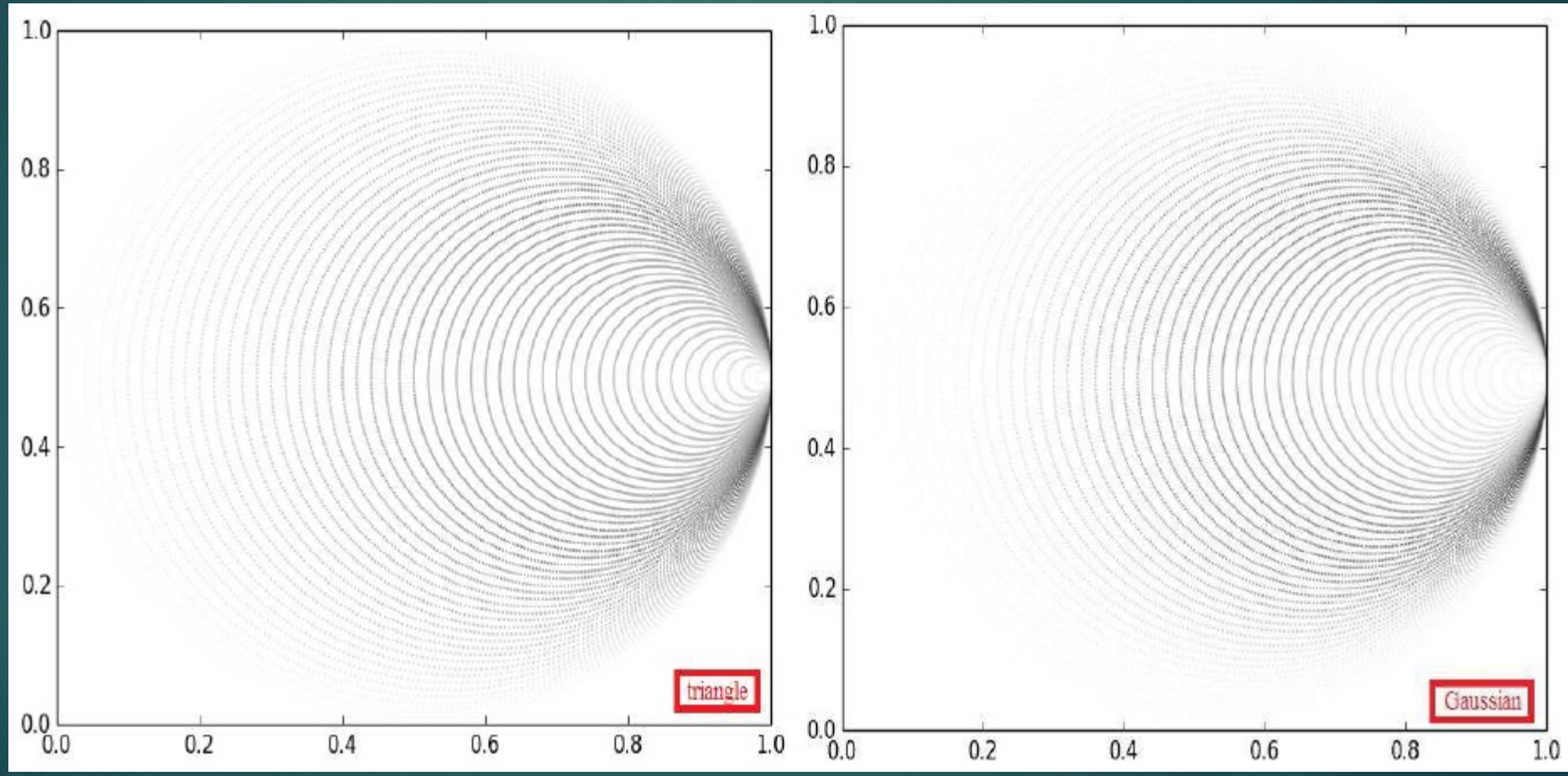
Let us just consider a particle just scattered and began to move in X-axis direction. At every interval on this axis, the particle has a certain probability to make a new 0-mom. collision. Let we assume it to be a constant for the moment.

There comes a moment in which the total integrated probability of 0-mom. collisions is one. The particle is expected to make a zero momentum collision up to this point. Let us call the circle that passes through this point the last circle and it's near vicinity the last slice.

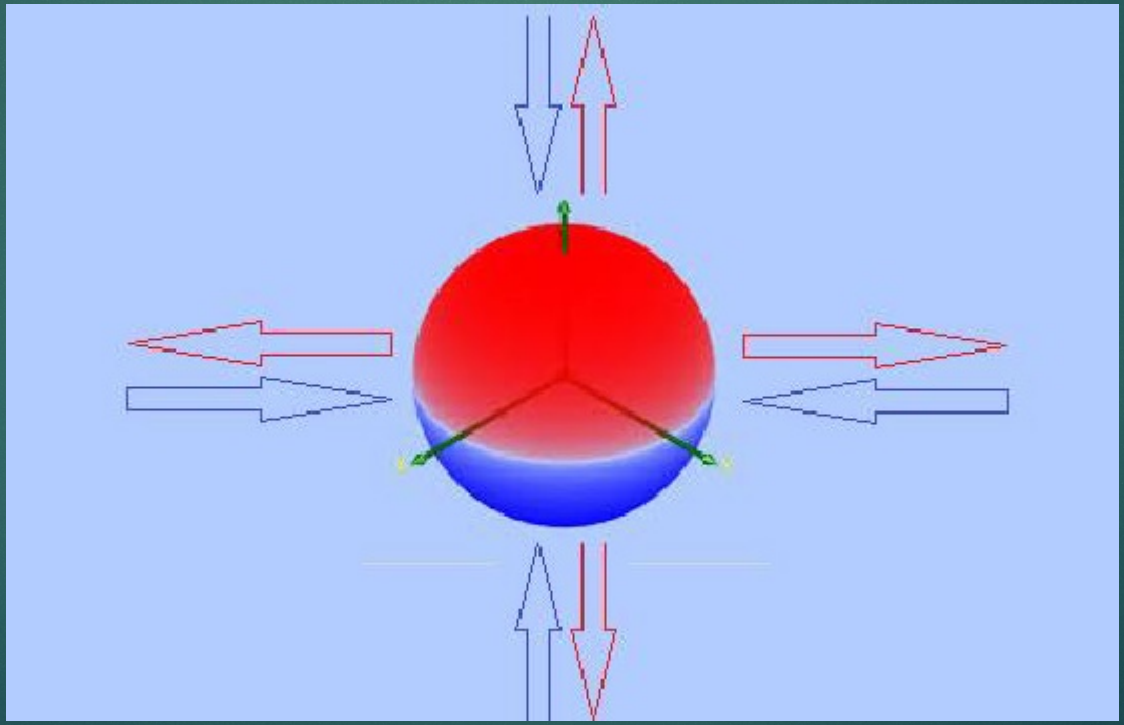
Calculations regarding the unit cell
0-momentum collision probability is constant



Calculations regarding the unit cell
The probability of datom on axis is triangular/Gaussian



Postulates
Elementary particles are spherical bundles of ver high nu. Of datoms
Bundles oscillate simultaneously or 180 degrees out of phase
The ones in phase are like, i.e. They repel each other
Motion as a result of each burst is quantized



Dual charcacter of electric force

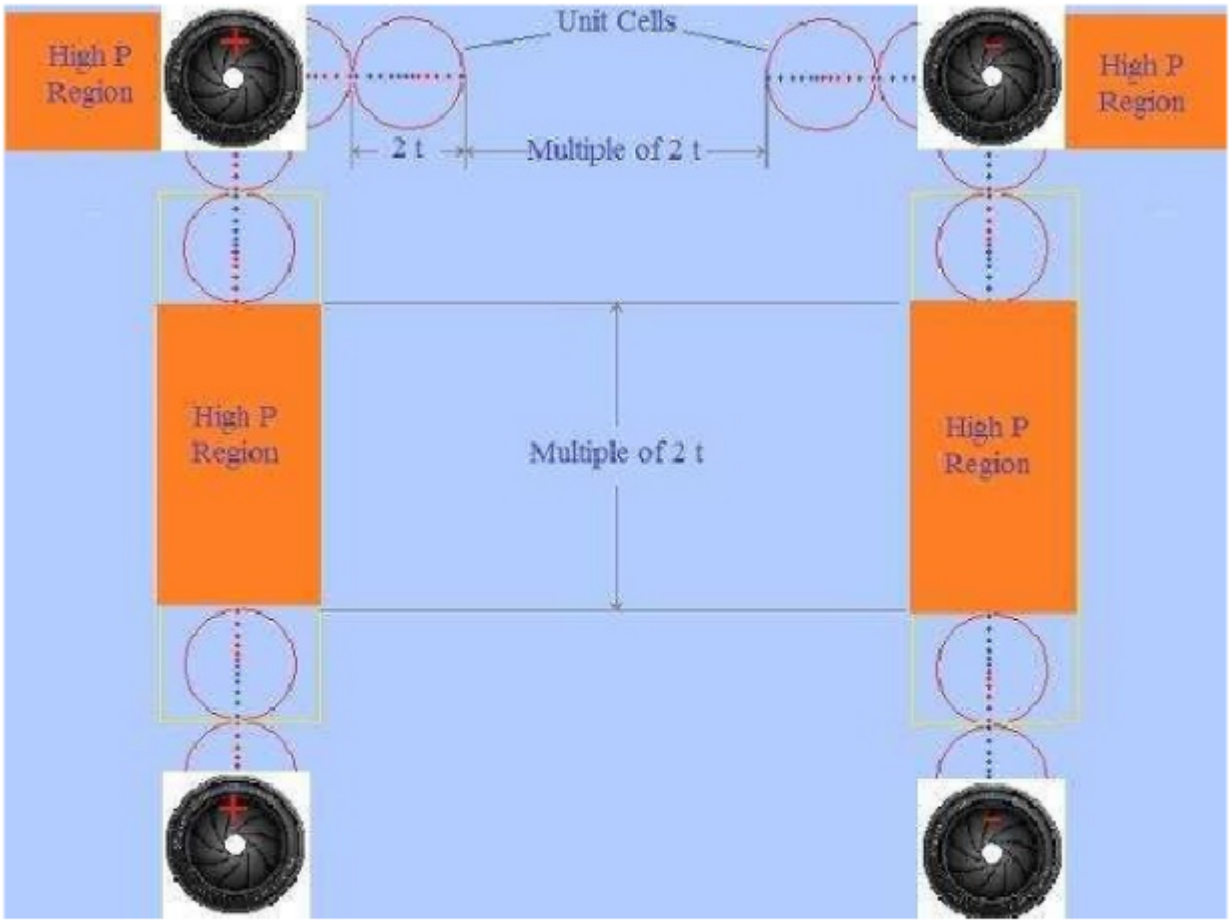
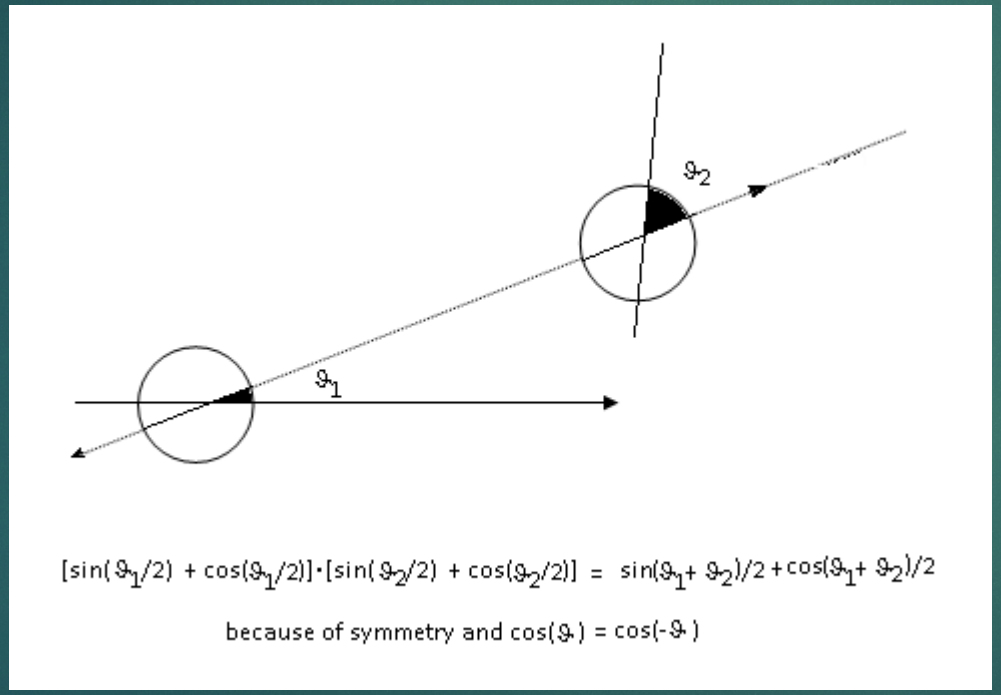


Figure 3: The simple/layman's summary of the dual character of force of electric charges not understood for centuries. Still not well understood by the way, but we seem to be on the right track.

In the original figure given previously there were spheres representing particles [1]. Here are the spheres replaced (particles, at the 4 corners) by the shutters. Shutters with "+" signs are synchronous and they repetitively get on and off simultaneously.

Simply explained: The-out-of-phase particle is annilated as the burst of the in-phase particle arrives. It is reconstructed during back flow.

And lastly
2 collisions



Where time dependence
is not included