A Prologue to (Re)²naissance

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Abstract ;

Having observed that modern mathematical theories of matter have begun to experience difficulties, a visit to their origins is made. The so-called Hermes revealed theory of matter has been explored. A theory of matter made up of infinitely hard, extremely tiny classical particles moving at the speed of light is proposed, and preliminaries of such a theory are investigated. Elementary particles are proposed to be handled as ordered bundles in a random vacuum, oscillating either simultaneously, 180 degrees out of phase, or as a mixture. This is proposed to be done under the restriction that phase and basic incremental motion is supposed to be quantized. The coincidence between the teachings of Hermes and the holy books, especially the Quran, has been brought to surface. The necessity of further research, which is urgent under current conditions, performed with the help of supercomputers at hand has been proposed.

Keyword   Hermes' atom, Demokritus' atom, hatom or datom, ether of randomly moving hatoms/datoms, discrete-dynamic ether, oscillator-particles

INTRODUCTION

We seem to be in need of a road map to our near future as our ancestors had throughout history. The difference is that the need is urgent in our situation, simply because we may well be on the verge of possible doom, which was previously not the case. To this end, we adopt the scientific method as much as possible.

Pre-Renaissance societies made use of astrology based on prehistoric religions/beliefs. With the Renaissance, modern science began to shed light on the set of possible expectations and compromises due. The topologies are different, though. The network topology of pre-Renaissance societies was central, whereas the modern adopted topology is distributed.

Neither one has brought the desired success to date. Whoever there may be in the Heavens may have given us a picture. Based on this picture, we used inductive reasoning to obtain details. However, we lacked the means. With the Renaissance, we began to build up our means. Based on these means, having some details and local observations at hand, we tried to obtain the whole picture via deductive reasoning. We could not; the point we came to seems to suggest that we do not live, but dream.

Two of the best pages describing the transition period are Klein 2015[1], and Simpson 2003[2]. An extremely important milestone along the way, regarding the philosophy of physics and subsequently chemistry, is the philosophy of quantum mechanics, which is well summarized by Hörz [3]. We seem to track the curves given in Meadows et al. 1972, Turner et al. 2014, and Sverdrup et al. 2015 within 1%[4,5,6]. The agreement between the simulated date of collapse and the predictions of the major religions is demonstrated by Mathews 2012[7].

Pre-Renaissance science was based on natural philosophy, and the concept of the atom took its place therein. Both Bacon and Heisenberg, the latter as a philosopher, seem to deal with Democritus' atoms, as described in Hermes 1882[8]:

"For the reaction (in) is arrest of progress (n). Wherefore, also, the errant spheres being moved contrary wise to that inerrant by the contrariant opposition, because of the very opposition (a), are moved amongst each other (b) by the stable (c). And it is impossible that it should be otherwise; for those arctic (spheres) which thou seest neither setting nor rising, revolved about the same pointy dost thou think to be moved or to stand still"

This probably means the source of these ideas was the Book of Hermes, it being chronologically the oldest. We formulated thoughts on who Hermes, the smartest of all, may be, and we published our thoughts in Post 2005[9]. We will return to this later.

A number of great minds have dealt with the problem of modelling matter with an immense number of moving spheres, establishing dynamic order in some circumstances. The attempts of Bacon are seen in the cited **references**[10], but even Newton seems to have given it a try, since we know that he was involved in the sphere packing problem. The aim of this interest cannot be cannon ball packing, which is made on a flat surface and is a practical job. None, including Newton, were successful.

Progress was made, though, and excellent work was performed regarding mechanics, kinematics, continuum mechanics, hydrodynamics, etc. We were almost bound to linear differential equations of the first and second order, but that posed no problem since they were almost enough.

In the case of optics, we attained success, but regarding the nature of light, it was first said light consisted of particles. Diffraction and interference forced us to accept the fact that it should be a wave. We ultimately claimed it was both. No theories modelling waves in a dense space of extremely swift moving particles describing all known properties of light could be constructed. It was simply impractical.

Regarding electricity, it was difficult to understand the dual character of the electric force; we reinvented the "-sign" and bypassed the problem. The electromagnetic theory followed.

Quantum mechanics (QM) began as wave mechanics; Schroedinger thought all matter was waves. The Copenhagen interpretation has altered this view, but it was also based on the Schroedinger equation, which is lacking in physics. The conceptual difficulties of QM are well covered in Johnson[11,12].

Here, we propose a new scheme that will hopefully be simulated using extremely fast-calculating computers. We also hope that work on discrete cases will build up and develop new, improved senses, and we will ultimately again be able to make use of newly developed analytical techniques. The problem is that it is difficult to fund our line of thinking for two reasons:
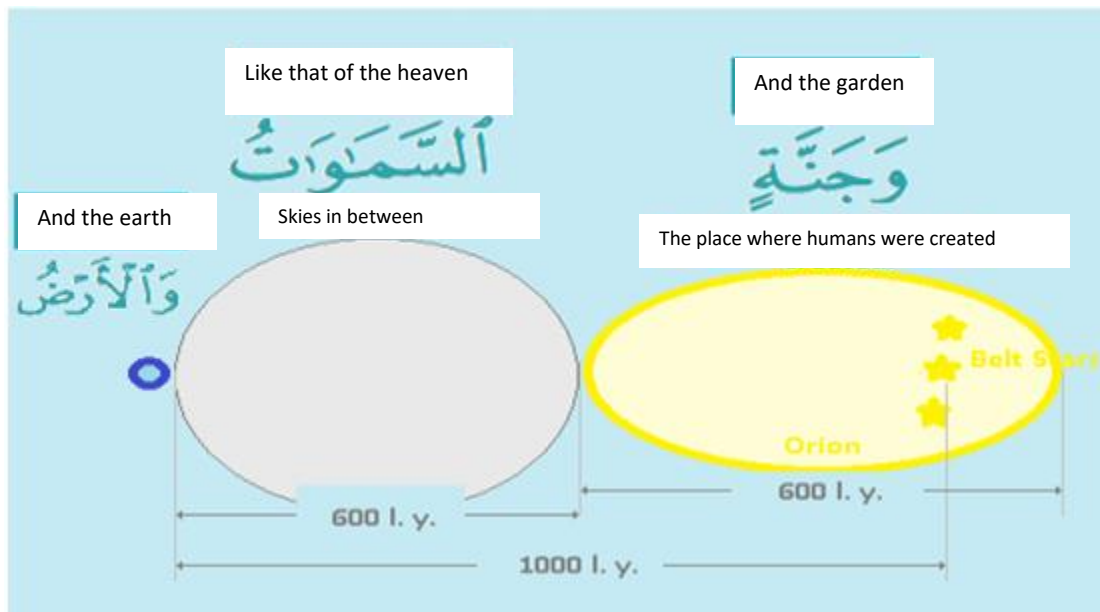

Figure 1: Approximate Earth to Orion distances. It is to be noted that the distances coincide with the ones given in Quran if we assume the information travels at the speed of light [14].

Even if successful, accessing the details will be costly. The case is very likely to be similar to the statistical mechanics-thermodynamics case.

The time we have available seems to be very limited; so are the funds in the near future.

The principal author had the idea about 50 years ago and gave up due to the first reason. Renewed interest is due to the second reason. Here, below Figure 1, we explain:

Social science and theology have not shown the same amount of progress that has been made in natural sciences, applied sciences and technology. They began too late and they lacked the pressure of consumer expectations.

A good number of academicians and their followers concluded that religions evolved spontaneously and holy books are terrestrial. Many examples of psalms from holy books may indicate the opposite. The two most powerful are probably 3:133 and 32:5 from holy Quran. They give two celestial facts that are well-known today. This is done in a very interesting and certainly peculiar manner not likely to be known around 600 A.D. Figure 1 above sketches the situation.

So we follow Bacon, who seems to have followed Hermes Trismegistus the E.T.: "From this perspective, the punishment of mankind on account of the very first disobedience by Adam and Eve can be seen in a different light from that of theological interpretations. In Bacon's view, this disobedience and its consequences can be remedied in two ways: (1) by religion and moral imperatives and (2) by advancement in the arts and sciences: 'the purpose in advancing arts and sciences is the glory of God and the relief of man's estate'." [15].

Preliminaries of our work

To introduce our work, we repeat the abstract of our foremost work here below [16]:

"Two well-known scientific assumptions, with some minor additions, are brought together to form a new understanding of matter at philosophical level.

The old assumptions are:

Matter is made up of indivisible particles, called atoms, moving continuously in space [17]

The upper speed limit for material bodies is the speed of light (Einstein).

And the new assumptions are:

1. Matter is made up of uncreatable and indestructible infinitely hard tiny microspheres moving in space with a constant speed, which is equal to the speed of light.

2. During collisions, the motion of the center of mass is conserved. In case of collisions with stationary centers 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.

It is shown at the philosophical level that it is possible to merge the classical theory, quantum theory and the theory of special relativity with these two new assumptions."

In a vacuum, which is defined to be a room containing a large number of datoms, and with every direction of travel equally probable, we find that only stationary centre of mass collisions produce a direction change and the probability of the new direction after such a collision are given in Figure 2, below:

Figure 2. The case of zero momentum collisions in two dimensional space. p is the impact parameter.
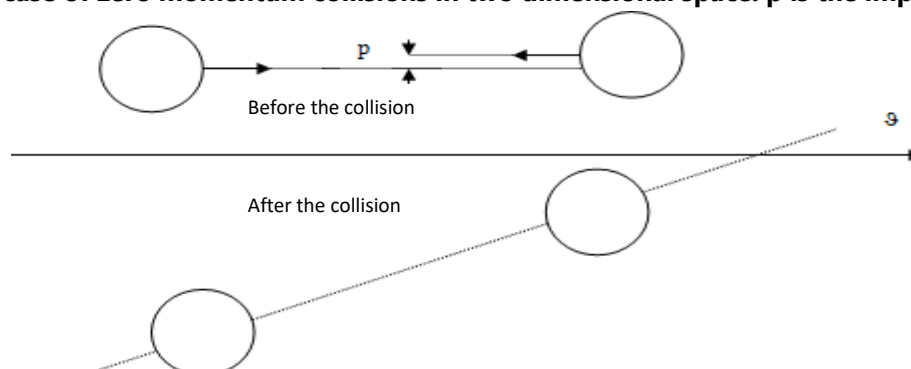
The velocity vectors after the collision are not shown, but they are in the direction indicated by Θ (Van Kampen 1992)[18].

Because of the assumed vacuum properties, every impact parameter between zero and the particle radius is equally probable. Then the probability of direction Θ is governed by the following formula [19]:

$P(\Theta) = \alpha \sin(\Theta/2) + \cos(\Theta/2)$

In our following work, we tried Huygens' construction [18-20]. We first compared the form of Kirchhoff's contribution to Huygens' obliquity factor vs. the scattering amplitudes given above. We obtained the curves in Figure 3, below.

Then we considered zero momentum (0-p) collision probability and calculated the results for constant 0-p collision probability, i.e. exponential decay vs. obliquity factor:

Changing the 0-p collision probability to almost exponential decay as seen in Figure 5, together with the linear, we get an almost perfect fit, as seen in Figure 6.

The difference of the curves plotted in Figure 6 is also of interest. This is given in Figure 7. The maximum deviation is about 1.7% and RMS deviation is below 1%.
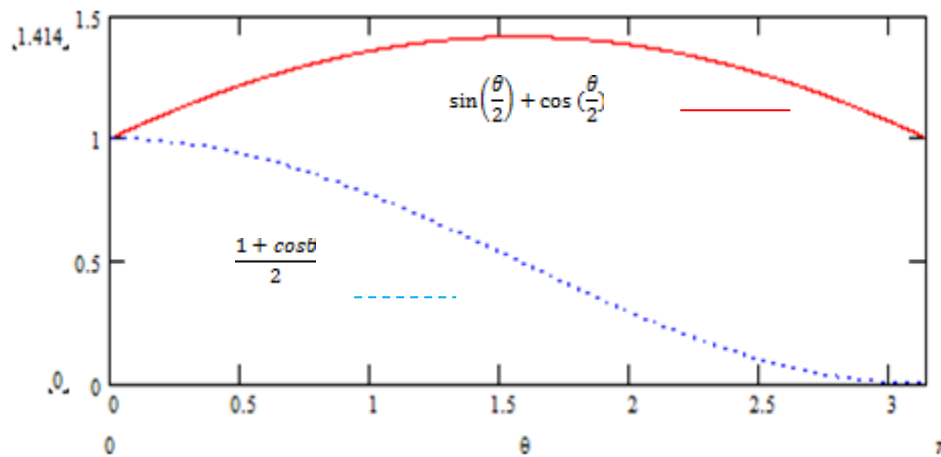

Figure 3: The probability of scattering angles after a zero momentum collision vs. obliquity factor. Note that the maximum probability is at 90 degrees and it is about 1.4 times the minimum.
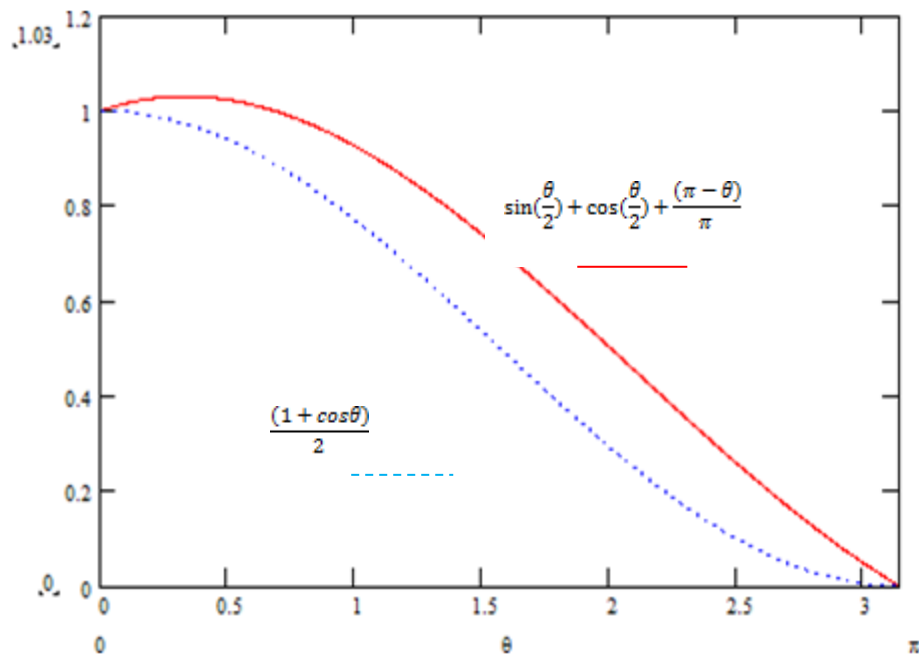
Figure 4: The angle dependent probability of finding the particle within the last slice within d· for the case of constant zero momentum collision probability compared with Kirchhoff's factor.
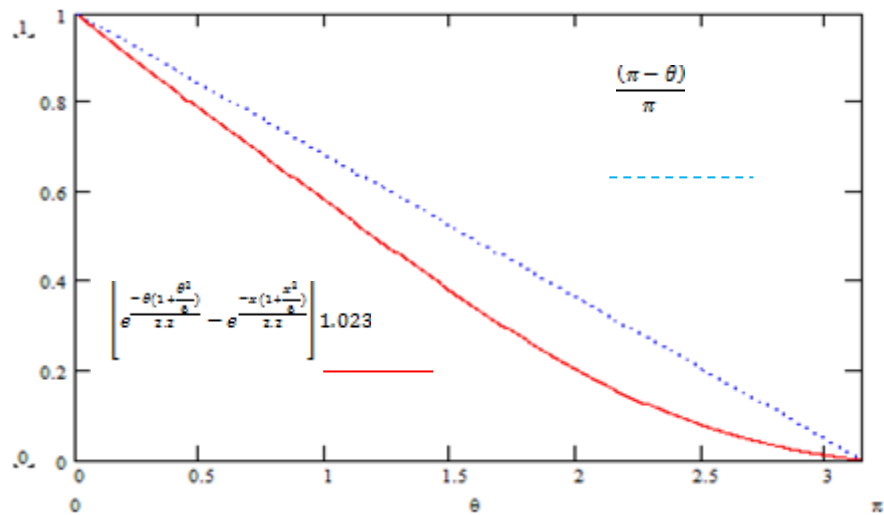

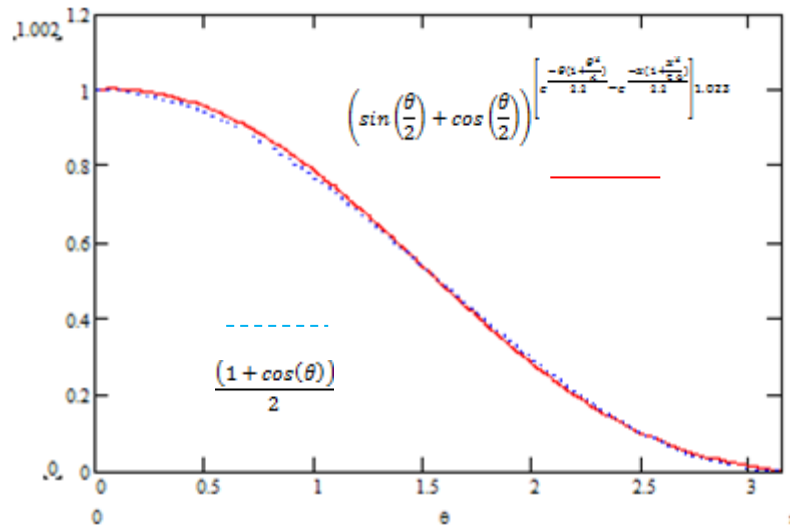**Figure 5. The previously used linear form and the new one introduced.**

Figure 6. The result obtained via quasi-exponential zero momentum probability and the Kirchhoff's factor plotted together.

Here, we were aware of the fact that the electromagnetic (EM) wave was a disturbance in the medium and we needed to simulate the results of many radiating datoms exhibiting periodic motion in the perpendicular direction, but we lacked the means.

Present Work

We have pointed out the necessity of exchange of particles moving with the speed of light to account for the electric force, as is proposed in Quantum Electrodynamics (QED), and we criticized QED for lacking a real physical picture [21].

As an acceptable description, we hypothesized in [22]:

all particles are harmonic oscillators

particles having the same charges vibrate synchronously

particles of opposite charges have a phase difference of 180 degrees

neutral particles are mixtures

displacement due to electric force is quantized as phase

repulsive forces exist because the wave from one hits the other

attractive forces exist because as the wave front arrives at the position where the other particle is supposed to be, the other one is annihilated, and it falls under the effect of the backward travelling wave and forms itself under the effect of this back wave

for the cases of constant and linearly increasing with distance 0-p collision probabilities, we calculated the probabilities of a moving datom at any point within the unit cell with the help of a small python program.
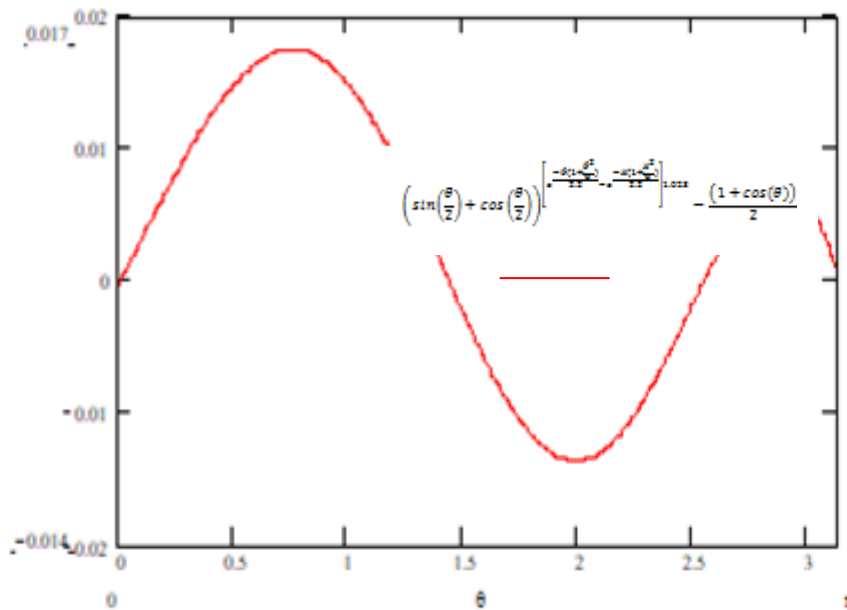
we gave the related pyplot results.

Figure 7: The difference of the curves plotted in Figure 6

We tried to give an analogical and easy to visualize picture for our scheme and gave the following in Perona 1990[19]: We defined the unit cell as a circle in random vacuum where the datom will have made a 0-p collision for certain. As expected, all pyplot results are quite similar. We show here the picture for the case of linearly increasing collision probability as Figure 9. In this case, the probability of collision on any point is (almost) Gaussian.
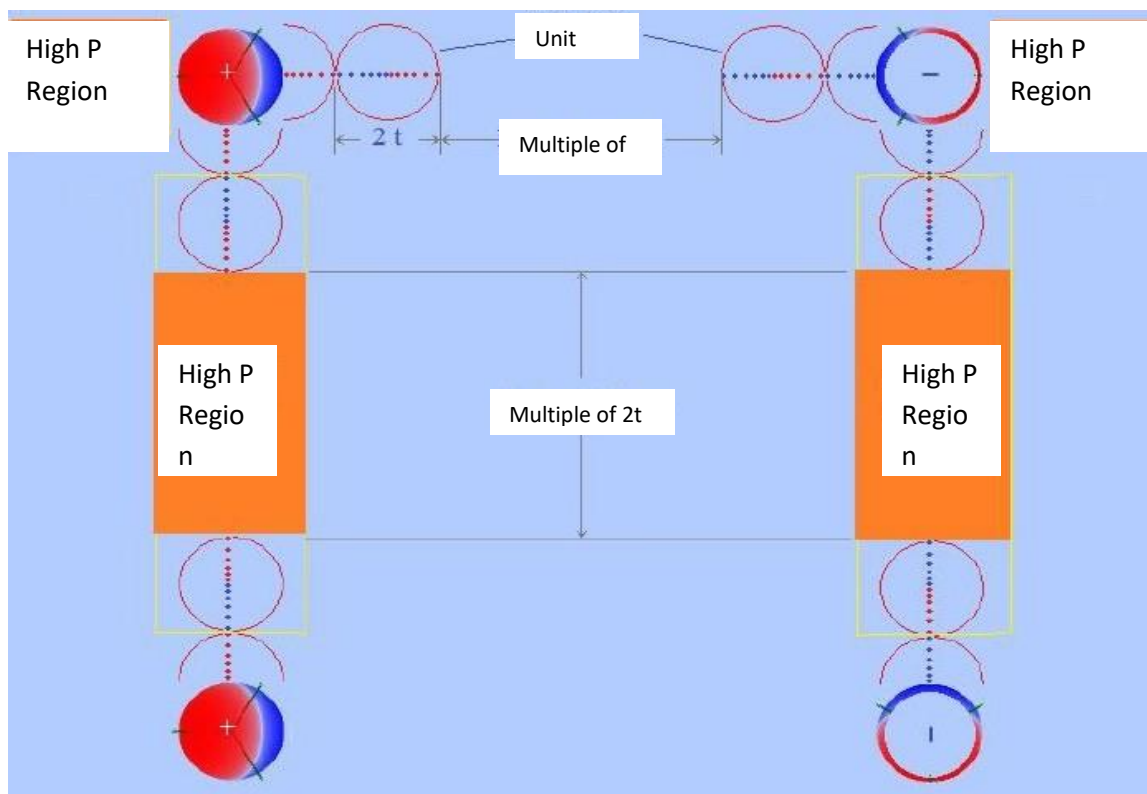

Figure 8: A possible scheme for the dual character of the electric force. The "+" and "-" sign charges are on cells and oscillate with 180 degrees phase difference.
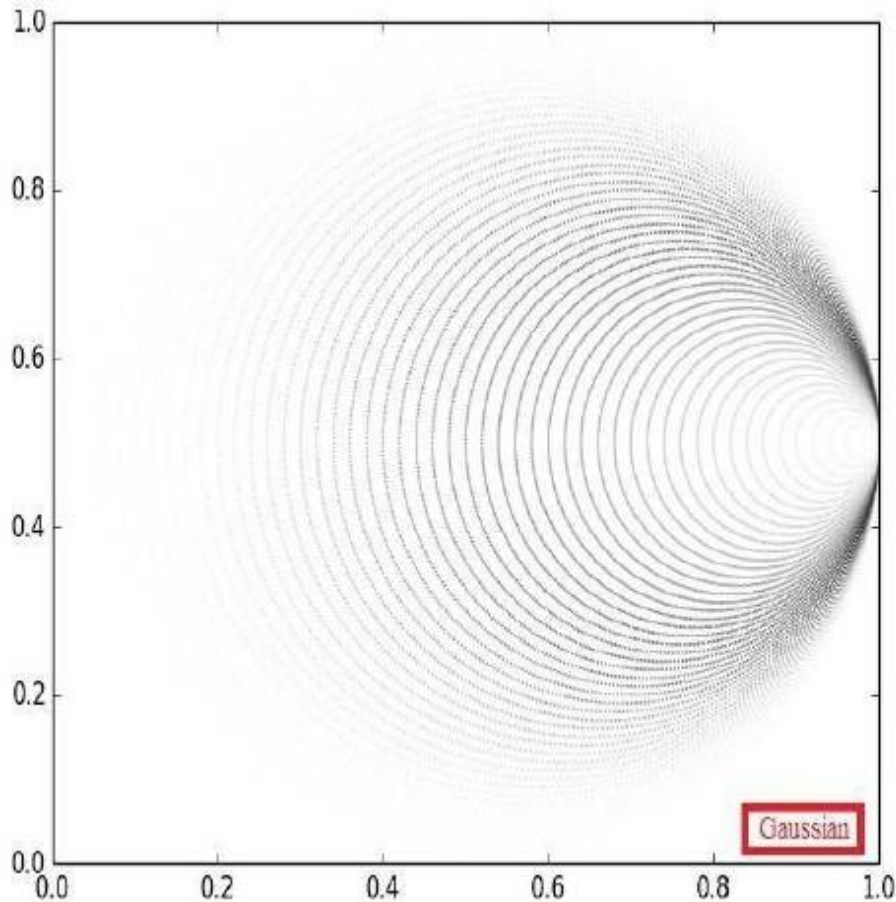
Figure 9. Pyplot result for the case of linearly increasing zero momentum collision probability. Since any particle having made a collision will get scattered, the actual collision probability is Gaussian.

Stability

In order to sustain stability, the probability of backscatter in each cell should be ½, if we consider the sum of the series ½ + ¼ + 1/8 + 1/16 + …+ 1/n to be 1 as n approaches infinity. It seems that this will be the case since each previous 0-p collision will contribute to the overall sum and for each particle moving directly forward, there will be a directly backscattered one due to 0-p. However, this claim needs better simulation. We need to consider the totality of particles taking the desired direction after having been scattered forward to within some tolerance and their probability of being rescattered backward and in phase.

Discussion and Evaluation

The scope of this work is beyond its limited means. We indeed want to open a door to (Re)2naissance because the Renaissance seems to have been unsatisfactory. To this end, we revisit its origins.

At the beginning, there may only be words, or this claim, as well as many other claims we will see later, may well be fiction and even falsification. What is certain is that at the origins of science, there was the concept of the atom, which is defined to be the indivisible element of matter[23]. Constructing this concept may be thought to be easy based on daily human observations but one must not forget is that there is an existing controversy therein, which can be observed on the History of the Atom[24]. This means coming to the idea of a unique, indistinguishable, spherical basic element was and is not easy. Democritus' atom is often mixed with others and based on daily observations, this situation is understandable. In Heisenberg's work[25] this is resolved and Democritus' atom is well defined, but no work in the domain of physics was performed based on this resolution. By-passing it was necessary.

The fact is that the introduction of the concept goes back to Hermes. Considering the totality of Hermes' teachings, a great deal of which we are unable to really understand even today, we may call him "Hermes the E. T." This reminds us of Zoroaster, whose supreme being's name is Ahuramazda or "Hurmuz" in Persian. The name may also have been derived from Harut-Marut. These so called fallen angels may even be Zoroaster's self [26].

There are a good deal of other peculiar coincidences related with teachings of Hermes. Just to name one, we may consider Hopi beliefs. They claim that humans are created in Orion and doom will be just after the appearance of a blue star which is somehow tied to the supernova of Betelgeuse [27]. Surprisingly, the Quran says the same thing in 75:7-9. Considering the assessments on their origin, this coincidence may also be as a result of Hermes' teachings, which would mean they are from the same source.

Briefly, we may say that we have not been able to really assess the totality of partly fictitious ancient teachings, including holy books, and surprisingly, we kept to the previously predicted path as we tried to construct our way to our heaven. In reality, though there is a conscious misguidance in the holy books via the words used therein, they have never really mentioned things the way we understood them. Just to name a few:

They have never mentioned God being the creator of the whole Universe. The creation of the God is restricted to Earth and heaven(s), i.e. things between the Earth and Orion. They should be specifically designed and altered since we need protection from outer space and were to be controlled.

Regarding omnipotence, the Quran is controversial. On the one hand, it claims omnipotence, which we may understand as strict omnipotence, but on the other hand, there is 55:27. Both together imply that the Creator is not strictly omnipotent. He cannot do much to prevent dispersion due to natural laws, though He still exists dispersion having lost the body, remaining only as a "face".

Therefore, there are the cases of omnipresence and omniscience and there are also a great deal of other controversial issues to be resolved. We simply neglect them and stay with intelligently designed Earth and heavens, the designer of which having revealed to us some of the related design factors. We need to bring them all together and understand the structure of the matter in such a way that the spirits, spirit-similars, extraordinary observed phenomena, etc., are included.

This work of humble means is somewhat built upon our previous work. There we wanted to introduce a kind of hidden variable theory based on classics which could only be calculated with the help of supercomputers. We could not publish the work and get the interest of physics community. The approach was sound to our mind and we hoped it should be generally considered as sound especially if the objections of Feyerabend are reviewed[28]. We must not forget that Bohr has also shown interest in hidden variables for a period in his late life. We add that analytical approaches on that ground failed.

Our scheme should also be considered as non-causal. The real world may be causal; however, to make causal calculations, exact knowledge of all places and velocities (directions) of an infinite number of datoms (Democritus' atoms) is necessary. This is obviously impossible. It would be equivalent to creating a parallel universe for which there is no room and no means.

In addition to that, all we can see from our first basic scattering results is that if a charge, a mysteriously stable bundle of datoms, were to be shaken, an outgoing perturbance in the perpendicular direction is to be expected and vice versa. The near field behaviour would also be nonlinear due to the fact that 0-p collision probability would not be a constant any more[29]. That fact could make solitons possible but the problem of constructing a stable bundle was enormous. Analytical approaches would again be of no use.

There were many properties of elementary particles to describe. Mass posed almost no problem if stability existed; however, stability and charge were the first to be handled, and they posed immense problems. To be stable, they needed to be harmonic oscillators. However, there were two types of charges, and the only thing that could be altered was phase, which posed problems if not quantized. Here, we postulated quantized phase and minimal displacements. They must indeed be hypothesized and derived from the basics.

The stability problem seems to require a connected "breathing" universe, but it may also be the case considering late QM experiments and astrophysics. Either way, there is a huge amount of work to be done, which requires supercomputers. This problem may be thought to be similar to space research, which resulted a good deal of spin offs. In addition to the expected spin offs, we hope the resulting understanding of the universe will make further research worth doing.

Conclusion

Scientists may have two reasons why they work: utility and understanding. A good example may be Abdus Salam. Hoodbhoy writes, "The job of theoretical physicists like Salam is to uncover nature's secrets at the very deepest level", claiming Salam preferred understanding vs. utility.

The tragedy is that by using too much mathematics to understand this, Salam has deviated from the classics, from the origin, too much. He is also said to have begun his Nobel lecture with a psalm from the Quran, which he seems not to have understood. He may have understood the meaning of the psalm, but not what is described in the Quran generally.

In the Quran, Allah never speaks of creation from nothing, or creation from energy. He says he has created from fire (plasma), from light and from soil. Hermes' book also never speaks of the creation of its spheres, simply because they have never been created.

Therefore, we observe that classical and modern thought are contradictory. Thinking the classical way and counting the holy books within classics due to the correlations in between, the following seems to be valid:

In our neighbourhood, there was once chaos due to the fact that density of datoms were not enough to support order, the face of the Creator as in the sense of 55:27 existed though. That is why "order ab chaos" is in the classics.

Two or more dust clouds consisting of datoms came to this neighbourhood, a collision occurred and density increased to a level supporting order, i.e. elementary particles, atoms, etc. That is why our galaxy is spiral.

Subsequently, the "face" had also a "body" and being thus intelligent He created us and reconstructed the room between us in such a way that our control would be possible.

Every neighbourhood we observe in the Universe is as dense as our Galaxy is. Due to this density, these neighbourhoods all expand, and due to this expansion, there is a red-shift.

The Earth will explode in about a century. Not the way the moderns today claim, though. It is much more probable, considering that the classics, including Hopi beliefs, correlate with Quran, that nuclear activity will increase until explosion. This will occur just after heavy, swift particles emitted by the supernova of Betelgeuse reach Earth and after a solar eclipse.

We urgently need to decide whether the modern era or the classics reflect the truth. That can only be achieved via active research, and we strongly propose further research in the direction of our claims.

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