The Higgs Boson: Reality or Mass Illusion

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This is an critique of the 'concept' of the Higgs boson particle and its relationship with reality. Its description, origins, and the activities leading to claims proving its existence are described.

The Higgs boson is a symbol designed to mathematically represent mass (or resistance to movement) at the subatomic level. As a reality, it has little hard supporting evidence, much the same as photons, neutrinos, and gluons. (Group acceptance, as in people saying, "I believe," does not qualify as hard supporting evidence.) The prediction of the particle called Higgs boson came after Peter Higgs had submitted a Gauge theory paper for publication, and was turned down, with the suggestion he resubmit the paper after including a particle model dealing with mass. In order to understand the Higgs boson, an understanding of Higgs field is a necessity.

In 1814, Augustin Fresnel experimented with light passing through crystals and erroneously concluding light is made up of transverse waves. Transverse waves involve up/down movements and typically form when compression waves move through solid matter. Fresnel claimed the aether must be an elastic 'solid'.[1] It had also been decided the aether existed uniformly both within matter and in the vacuum of space (a way of explaining how light passed through transparent matter). The finalized version of the aether model, before being discarded as unworkable, described Terra, the people on it, and all moving matter, at the molecular level, as sort of oozing through a stable, uniform nonmoving aether. One can understand why this might be a difficult concept to accept. In essence, the aether model had picked up defects during its evolution which made it untenable. Einstein used this finalized version as the foundation for his 1905 'Special Theory of Relativity'. It was called the 'luminiferous aether'.

In 1916, Einstein's 'General Theory'[2] was published. It describes gravity as a warpage of time and space around matter. Matter ranges from a single proton, to a star, to a galactic core (the black hole at the center of a galaxy). To accomplish this, Einstein replaced the aether with 'the warpage of time and space', later describing the aether as unnecessary. (Eliminating the aether has the added benefit of allowing for the existence of photons as particles, and also makes the electromagnetic field unnecessary. The photon model and the EM wave model are incompatible and cannot exist simultaneously.)

In 1922, a 56 page booklet titled 'Sidelights on Relativity'[3] by Albert Einstein was published containing two lectures, one titled 'Ether and the Theory of Relativity', and the other 'Geometry and Experience'. In these two lectures, Einstein backpedaled on his position the aether was unnecessary and reintroduced the 'luminiferous aether'. Higgs field is based on these two lectures. As a subdivision, or aspect, of the luminiferous aether, the Higgs field is unmoving and uniformly distributed throughout the entire universe. Higgs first theorized the field caused drag on subatomic particles, and later, imbalanced waves within this otherwise uniform field stressed other fields to produce a particle, a boson, called the Higgs boson, which provides mass to other particles. As a particle containing a Higgs boson passes through the Higgs field it meets with resistance. At the macroatomic level, all moving matter is passing through (sort of oozing through at the molecular level) a stationary, uniform Higgs field.

There are at least three flaws in the Higgs field model. The first is it's uniform distribution throughout the universe. The second is the assumption Higgs field is completely separate from the electromagnetic field. The assumption the field is nonmoving and stationary is also shown to be in error, by way of updated information. Higgs field, as a variation of the luminiferous aether, uses the same archaic ideals. Ideals which are no longer reasonable supposition. A fresh examination of the luminiferous aether/Higgs field, for purposes of updating, seems appropriate.

Gravity bends starlight, as shown by the lensing effect of stars. Einstein explained this prediction (originally made by Johann Soldner in 1804) as the 'warpage of space and time'. As an alternative explanation, a modernized aether (or electromagnetic field) would condense with proximity to a gravity core, lensing the EM waves, much in the same way a glass lens bends light.

Additional support for this updated aether model includes the blueshifting of light as it approaches a gravity field. Einstein's model predicted a redshifting of light with no detectable change in the speed of light. The speed of light actually slows and blueshifts as it enters Terra's gravity field[4]. The medium transporting EM waves is condensing with proximity to the gravity core, in turn blueshifting the frequency and slowing the speed of light. (The same thing happens more abruptly when light shift from the thinner EM field of a vacuum to the denser EM field of air, or glass. With these observations, one can conclude the aether/electromagnetic field has a weak gravitational pull, which can in turn be used to explain dark matter. (Aether=dark matter) The density of the medium/EM field controls the speed of light, with gravity condensing the medium, and the electromagnetic field slowing and blueshifting light.

Cerenkov radiation provides a link connecting the Higgs field and the aether. The density of an EM field controls the speed of light passing through it. When an electron enters a denser field (moving from a vacuum to air), and it is traveling faster than light normally travels through that medium, the electron radiates a cone of EM waves 'behind' it. This type of light is known as Cerenkov radiation.

The analogy of a sonic boom is often used in describing Cerenkov radiation. The sonic boom created by a jet traveling faster than the speed of sound is also emitted in a cone shape behind the jet. A charged subatomic entity traveling faster-than-light creates the same effect using EM waves. The light is typically bluish-white in color, as shown by the bluish aura surrounding underwater radioactive objects. In this case, the EM field surrounding the water molecules slows the ejected 'temporarily' faster-than-light electrons.

The density of the water's EM field immediately provides resistance, slowing the subatomic entity. For as long as momentum continues to carry it at faster-than-light speeds within the water's EM field, a cone of light radiates to the rear. The cone of EM waves is hollow, and, for a brief period, the subatomic entity moves faster than the light being radiated.(Again, the medium dictates the speed of light.) As the charged entity slows, the cone of light expands, becoming broader and moving forward. As speed drops to below the allowed speed of light, the radiated EM pulses become a tightening beam of synchrotron radiation radiating forward. As an electron accelerates, the process is reversed. The movement of electrons through the field of resistance, the Higgs field/aether, produces electromagnetic waves.

The concept of a nonmoving field, distributed evenly throughout the universe, is an archaic 'ideal' lacking 'any' hard supporting evidence. There is, however, supporting evidence for the concept of the aether/EM field as a fluid, moving, shifting field. Protons, planets, stars, and black holes all move through space. Each carry their own gravity field, and as a consequence, each maintains a gradually condensing EM/Higgs field as a self-contained environment. The surrounding EM/Higgs field is significantly thinner and flows around moving matter, just as a breeze moves around a person taking a walk. The aether/Higgs field flows with the solar winds and around planets and stars as they move through it.

The Higgs Mechanism is the creation process for the Higgs boson model. It describes a disruption in an otherwise uniform, evenly distributed field which exists simultaneously with other uniform fields. It is predicted the tension between these fields produces a Higgs boson. 'The simplest theory which exhibits this behavior is a gauge-variant inversion of a

model used by Goldstone himself: Two real scalar fields, and a real vector field interact through the Lagrangian density... lots o' math... describes vector waves whose quanta have (bare) mass.'[5] (Lagrangian Mechanics, or Gauge Theory, is a method of predicting an object's location as it moves through space, and was chosen by Einstein as the foundation for his 'General Theory of Relativity.')

The (bare) mass of the Higgs boson is confusing at best. Mathematically, its ideal mass should be between 52 and 110 GeV. On the other hand, it has been determined the Higgs boson's GeV cannot be less than 114. Another Standard Model restriction states its mass cannot exceed 1 TeV, or the electroweak theory becomes invalid. Additionally, EM waves are used to interpret mass measurements into an eV(electron volt) system.

What is mass? From the macroatomic perspective, mass is the number of protons and neutrons within an atom, and then the number of atoms/molecules within the matter being observed. Mass is typically measured by weight or gravitational attraction, but one has to be on Terra for our measurement systems to work. (Different weights on different planets.) Inertia, resistance to acceleration, is also used as a measure of mass, though shape, as in the sail of a sailboat being pushed by air vs a canoe of the same weight moving through water. Einstein described mass as $E=mc^2$, or $M=E/c^2$, or the mass of an object is a measure of its total energy content. According to this model, mass increases as kinetic energy increases, or, the faster something is moving, the more it weighs. Einstein described objects moving at the speed of light as having infinite mass. Experiments have shown this description doesn't seem to apply to subatomic particles, and experiments at the macroatomic level cannot currently achieve the speeds necessary for a detectable increase in mass. Ignoring Einstein, mass can also be considered a combination of gravitational attractions and electromagnetic interactions. The mass being assigned to the Higgs boson has neither gravitational attraction, nor an electric charge.

In Cern's 2012 experiment, proton's were smashed, resulting in EM waves (gamma rays). The EM waves were then translated into an electron volt (eV) system with readings of *125 and 126 GeV,* which is a common measurement system of mass at the subatomic scale. (The eV system incorporates Einstein's matter=energy or $E=mc^2$ equation, which includes velocity. The electron volt is confusing because it can also be used to measure distance, momentum, and temperature. Due to variable velocities, its use as a measure of mass is highly questionable. While I agree increasing velocity translates into greater energy, I do not agree it increases mass. Yes, I'm disagreeing with Einstein.) The proton is described as having a (bare?) mass of 0.938 GeV. The Higgs boson, released from the smashed proton, has a larger mass of 125-6 GeV.

These mass measurements are based on EM (gamma ray) readings. Charged entities trav-

elling at high speeds have more energy than their slower counterparts and produce higher EM wave frequencies. When one considers the repelling qualities of two protons approaching one another, there is no way of predicting the exact speeds of the colliding protons. When a positron and an electron join (some say annihilate), the faster they approach one another, the higher the EM frequencies produced.

The choice of protons these experiments is understandable, but far from ideal. Protons are the only thing they had to work with. Electrons and protons are the only stable subatomic particles readily available for subatomic experiments. The neutron breaks down to a proton and electron within ten minutes (unstable), and the other subatomic particles, if they actually exist, disappear almost immediately. Electrons can't smash into one another because they repel one another too strongly and lack the gravitational attraction of the proton. Protons, while not an ideal choice, were the only available option. The proton is the only subatomic particle displaying gravitational attraction, which differs from inertia the Higgs boson attempts to explain. Another problem is the proton's positive charge, equivalent to the positron, the electron's polar opposite.

The joining of an electron and the positive charge of the proton was not considered as a potential source of gamma rays during these experiments. The joining of an electron and positron produces gamma rays, with the frequency of the gamma rays based on the speed of the joining process. For unknown reasons, the 'joining process' of the smashed proton's positive charge with the electron is not considered a possible explanation for the readings of *125 and 126 GeV*.

When an electron joins with a positron, according to the Standard Model, they can only produce a maximum of three or four gamma ray photons. (Originally, one was the ideal.) However, it has been predicted electrons and positrons carrying large amounts of kinetic energy (velocity), produce short-lived particles (such as the +W and the -W). These theoretical particles are detected by.... gamma rays, and due to Standard Model limitations, excessive gamma radiation cannot come directly from pair joining, but 'can' come by way of particles, with more mass, produced from the pair joining process. Ignoring the hoopla, the end result is high-energy gamma rays from the joining of a positron and electron. The same may be true a high speed electron and the positive charge of a smashed proton.

The use of unproven and weakly supported assumptions has been a practice of the Standard Model since its creation. The Standard Model was formally created in the 1970s, but began with Einstein's translation of quanta into photons. The name photon came later, but Einstein's description of quanta as particles (rather than packets of energy moving through "oscillators', per Maxwell Planck[6], the discoverer) initiated the particle theory

model, later called the Standard Model. It attempts to describe subatomic physics using pure mathematics without the burden of visual or physical descriptions. As a mathematical model, it reduces the behavior of subatomic entities to mathematical units, labeling these behaviors as ‘particles’. The Standard Model has been developed into a philosophy of reductionism taken to the extreme. The Higgs boson is a recent example of extreme reductionism combined with a search for expected results. (Consider the number ten. Ten what? 3 oranges, 2 pears, and 5 apples equals 10. So does 9 diamond rings and 1 baseball. If you start off with 10, you can use any equation you want to get the answer. Expectations distort results.)

Studying the Higgs boson required producing them, or separating them from their containing particles. To this end, two counter-rotating high energy proton beams were made to pass through one another, concentrating energy into a very small space. A small number of the protons collided at very high speeds, producing fireballs, theoretically containing hundreds of electrons and positrons. To get evidence for the Higgs boson, distinctive patterns in the fireball needed to be found. Particle physicists working on the two separate Higgs experiments were looking for "bumps" in their data, more specifically readings of *125 and 126 GeV.* (Translations of gamma ray readings.) When these ‘bumps’ reached the 5-sigma level, the experimenters believed they had discovered the Higgs boson.

Sigmas are statistical evidence, and in this case, it has been reasoned their readings would have less than one chance in 3.5 million, of being a statistical fluke produced by random chance. Stated another way, the experimenters have concluded, statistically, they have a 1 in 3.5 million chance of being wrong in their conclusions. Stated yet another way, it is a certainty they will measure something at 125-6 GeV and their conclusion will be the Higgs boson, or a new particle. (It should be common knowledge statistics can be manipulated by the questions, and the order of questions, asked. It is astonishing what can be done with statistics and a philosophically accepted fudge factor. There are numerous equations in the Standard Model requiring a fudge factor. See ‘Death by Mathematics’ by Miles Mathis available @ http://milesmathis.com/death.html)

On Dec 13, 2011, results of ATLAS and CMS Higgs boson experiments were announced, suggesting that if it exists, its mass is limited to 115–130 GeV. The information gained from this experiment was used as a platform for the July 4, 2012 experiment. They are the same experiment. Essentially a refinement process, a statistical narrowing of parameters called a sigma, was used in reaching their conclusions. A reading of 124 GeV–126 GeV is consistent with the presence of a Higgs boson signal, but also consistent with the joining of electrons and positrons or, theoretically, the joining of an electron and a protons positive charge. Have there been errors using this sort of statistical reasoning before? Yes. In

2011, a ‘six sigma’ system proved neutrinos could travel faster than light. It was later shown there were systematic errors, the most prominent being hard reality. Defective cables consistently gave investigators bad readings.

Strong, faith based beliefs are often supported more by enthusiasm than hard evidence. Questionable evidence takes on significant meaning and supporting opinions are used as supporting evidence. Addressing scientists in the CERN auditorium who had worked on the project, CERN Director General Rolf Heuer asked, "As a layman, I would say I think we have it. Would you agree?" A roar of applause communicated their approval. Adding to the illusion/sales pitch, the following statement has been repeated numerous times, ‘The W-channel gives 1.5 sigma confidence channel, so it is definitely meeting the double blind trials of a "Well-behaved" Higgs.’ This phrase succeeds in creating the illusion of a double blind trial, but is essentially nonsensical, and could not be further from the truth. In a blind experiment, experimenters are prevented from knowing certain information that might lead to conscious or subconscious bias on their part, thus invalidating the results. (Projecting your desires onto the experiment.) A double blind experiment is an even more stringent way of conducting an experiment, usually on human subjects. The ATLAS and CMS groups could not be described as isolated from each another. They shared a common goal, a common technology, a common facility, and a common language.

The word photon is part of their common language. A massless, chargeless particle that exists only while traveling at the speed of light and in a straight line. There is nothing to suggest it has a surface. Quanta, on the other hand, can be described as bits o’ kinetic energy travelling from one oscillator to the next in the electromagnetic field. Reducing an EM wave to a particle allows for simple, straightline, direct trajectory mathematics. (No computers in the 1900s, everything done by hand, and imagine trying to plot transverse waves in the ‘luminiferous aether’.) The model of photons as particles has developed problems recently. It has been discovered an individual photon does not travel in a straight line, but tends to meander in the general direction it was aimed. The observation of this behavior suggests the original description of quanta (bits o’ kinetic energy passing from one oscillator to the next in the EM field) might be a more functional description than particles travelling a straight line trajectory.

Consider the neutrino, a particle used to explain an energy loss when a neutron breaks down to a proton and electron. The neutrino’s impact on matter is considered to be essentially nonexistent. Though the neutrino can only be detected by way of circumstantial evidence (such as... gamma rays), it ‘does’ provide a solution for the dilemma caused by the ‘law of conservation of energy’ and the unpredictability of direction when a neutron breaks down into an electron and proton. Though the neutrino is considered chargeless, an antineutrino is predicted to exist as well, and the term neutrino and antineutrino are often

interchangeable. Originally described as massless and chargeless, some describe the neutrino as having a mass so small it cannot be measured. There is ‘no’ hard supporting evidence for the existence of neutrinos.

Gluons provide another example of Standard Model strangeness. They are not even a mathematical necessity. The purpose of the gluon, as an artificial mathematical construct, is to hold protons and neutrons together inside an atom. Within the atom, an electron placed between two protons neutralizes half of each proton’s positive repelling charge and allows the gravity and magnetic attraction to act as bonding mechanisms. The gluon, as an explanation for the forces holding complex atoms together, is a mathematical over simplification

The Standard Model needs the Higgs boson as a way of explaining resistance to movement by subatomic particles with no gravitational attraction. It’s a convoluted explanation and requires faith in the Standard Model and its assumptions. The average man is asked to trust ‘statistical’ physics and the interpretation of gamma rays as proof of particles that cannot be otherwise detected. Evidence supporting the Higgs Mechanism is based solely on the mathematical needs of the Standard Model and its creation was primarily the result of physics community politics. The Higgs field is an idealized variation of the luminiferous aether and assumes unproven behaviors drastically in need of an update

In my undoctrinated, outside-of-the-box opinion, the conclusions of the Higgs boson experiments are based on assumptions and wishful thinking (the interpretation of evidence to mean what you want it to mean and ignoring evidence to the contrary, as in faith based beliefs.) Most people have experienced self-delusion on a small scale and can site their own examples. In this case, a large group of highly-focused physicists have succeeded in creating their own separate paradigm/mythos, which is not the same thing as reality.

References

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