A Discussion about Traceable and Untraceable Energies

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Abstract

Energy and the Energy Conservation Principle might be the most important building blocks of the Physical Sciences. Until the discovery, in the 20th century, that the Universe expands much faster than the expansion that can be justified by the amount of the calculated Energy in the whole Universe, the Energy was believed to be composed of only Traceable Energy components. After the above-mentioned discovery, the notion of Untraceable Energy (or Dark Energy) was introduced in the science of Physics. However, the exact origin of this Dark Energy is still a mystery. The acceptable notions are that Dark Energy must be looked for in Gravitation using Einstein's General Relativity Theory. This article argues that the origin of most of the Dark Energy might be in Electromagnetism. This article also provides other new insights into the Energy entity, which might also explain additional issues and paradoxes that were yet ignored.

1. Introduction

The author of this article published two more articles [2], [3], which reference another article [1], by the author of this article, which argues that Electromagnetic (EM) waves might consolidate, contrary to the acceptable notion [5], that such consolidation cannot occur. These articles [1], [2], [3], present that such EM consolidations might result in surprising paradoxes. These articles [1],[2], [3], present a scenario, of two EM waves that meet on a half transparent mirror, and in certain conditions, as described in article [1], consolidate. In an extreme case of such EM consolidations, a Null EM wave is composed, without any Electric or Magnetic fields. In another extreme case of such EM consolidations, Energy seems to be created out of nothing. And in almost all cases of such EM consolidations, the Energy embedded in the resultant consolidated EM wave embeds either more or either less Traceable Energy, as compared to the Traceable Energies embedded in the original consolidating waves. Thus, in all these EM consolidation cases, the Energy Conservation Principle Seems to be violated. Article [1] resolves this paradox by introducing the novel Energy Pairs Theory, which explains these paradoxes by arguing that the Energy which seems to be missing in the Null EM wave, is conserved as Untraceable Energy in the photons of the resultant consolidated EM wave. Article [3] explains that the Seemingly Energy that was generated out of nothing, is Untraceable Energy embedded in photons, that converted back to Traceable Energy. Article [1] also explains other paradoxes in the famous Electron-Positron Annihilation process [6], and in the famous Pair Production [7] process. This also provides a new insight into the nature of the Electric Charge, which might be a form of Energy, as Mass is recognized as a form of Energy, following the introduction of Einstein's Special Relativity Theory.

2. The nature of Dark Energy in the Energy Pairs Theory framework

Following the publication of article [1], the author of this article published an additional article [4], which presents that what the Science of Physics recognizes as Space, manifests a phenomenon similar to what was presented in article [1], in which Electric fields in Space always annihilate each other, and the same applies to Magnetic fields, which Seem as a violation of the Energy Conservation Principle. Based on the above, article [4], uses the novel Energy Pairs Theory introduced in article [1], to explain this paradox, and the article concludes that Space itself is also a form of Energy, that contain continuously, and at each point of it, Traceable and Untraceable Energies, which implies that most of the Untraceable (Dark) Energy, is of Electromagnetic nature. That article [4], also calculates the total amount of the Dark Energy and concludes that the Energy embedded in the Dark Energy is about two thirds of the total Energy, which complies with the acceptable agreement about the amount of Energy embedded in the Dark Energy in the Universe.

3. Energy and Interwoven Space/Time Entities

Einstein's General Relativity Theories explained why Mass objects attract each other, by introducing the Interwoven Space/Time notion, which replaced the Gravitational Field (which was introduced by Newton), to explain Mass objects attraction. Since the Gravitational Field is a form of Energy, then, the Interwoven Space/Time Entity should also be a form of Energy. In a speech, in the University of Leiden on May 5th, 1920, [9], Einstein claimed that Aether should exist to provide physical properties to his Space/Time entity, which implies, that Einstein also agreed that his Space/Time Entity is a form of Energy.

Although the origin of Mass bodies attraction was resolved by Einstein's General Relativity Theory, the origins of Electric Charges attractions or repulsions remained a mystery. The author of this article published an article [8], which explains the origin of Electric Charges attractions or repulsions by arguing that Electric (or Magnetic) Fields are forms of Acceleration, as Newton's Gravitational Field (and Einstein's Space/Time Entity) are forms of Accelerations, which also implied that the Electric (or Magnetic) Fields are also Space/Time Entities and are also just forms of Energies. In that article, [8], two more Space/Time Entities were introduced in addition to Einstein's Space/Time Entity, a Space/Time Entity attributed to the positive Electric Charges, and a Space/Time Entity attributed to the Negative Electric Charges. However, each of these three Space/Time Entities are separate, and each embed its own, separate Space and its own separate Time, which implies that Space and Time are not independent entities, they are only attributes of three separate forms of Energies, the three Space/Time Entities presented in article [8].

The claims presented in article [8] also result in a prediction that Newton's Second Law of Motion (F = ma) might be correct only for very massive bodies (such as planets) or Uncharged bodies (bodies that are not Electrically Charged). That prediction states that for most Electrically Charged bodies the acceleration between such bodies resulting from the Coulomb's Force exerted between such bodies, is dependent on the Electric Charges magnitudes that such bodies embed

and not on their Mass magnitudes (as Newton's Second Law of Motion states). Article [8] also suggests an experiment that might validate that prediction, and thus, provide validity to the three Space/Time Entities suggested in that article.

Thus, if Mass is a form of Energy (derived from Einstein's Special Relativity Theory), and Electric Charges are forms of Energy (suggested by article [1], by the author of this article), and the notions of Space and Time are not independent notions because there are three separate Space entities and three separate Time entities, and each such entity is just an element in one of the three separate Space/Time Entities, which are also forms of Energy, then, Energy is not only the most basic building block of the Physical Sciences, it might be the only independent Entity.

4. Summary and Conclusions

The notion of Dark Energy was introduced in the 20th century. Until then the Energy was believed to be composed of only Traceable Energy components. However, the exact origin of this Dark Energy is still a mystery. This article argues that most of the Dark Energy emerges from Electromagnetism, based on several articles [1], [2], [3], [4], by the author of this article, which introduces the novel Energy Pairs Theory, which explains paradoxes resulting from scenarios of consolidating Electromagnetic waves presented in articles [1], [2], [3], in which Traceable Energy seems to either disappear or be created from nothing, which seem to violate the Energy Conservation Principle. Even if Gravitation might also contain some Dark Energy because the Energy embedded in Electromagnetism is known to be more potent, by many orders of magnitude, as compared to the Energy embedded in Gravitation, then, if Electromagnetism also embeds Dark Energy, then, it is reasonable to conclude that most Dark Energy originates from Electromagnetism. This conclusion is further supported by the calculation provided by article [4] that the amount of Energy embedded in the Dark Energy is about two thirds of the total Energy embedded in Electromagnetism.

This article also argues that Space and Time are not independent notions. This is based on conclusions derived in another article [8], by the author of this article, which explains the attraction or repulsion between Electric Charges. That article [8] claims that Electric and Magnetic Fields are also Space/Time Entities, and there are three separate Space/Time Entities. That article also predicts that Newton's Second Law of Motion does not apply to most Electrically Charges bodies, and that article suggests an experiment that might validate this prediction.

Thus, if Space and Time are only elements of three separate Energy forms, the three Interwoven Space/Time Entities described in article [8], then, the conclusion from that might be that Energy might be the only independent Entity.

References

[1] Energy Analysis of a Null Electromagnetic Wave. Moshe Segal. Theoretical Physics Journal by Physics Tomorrow Letters (PTL). https://2edd239a-21aa-41cc-a45e-84832f36b982.filesusr.com/ugd/04176b_f8d75fc7c61d455d8bda102055d6b92d.pdf

[2] A Discussion relating to the feasibility of a Null Electromagnetic Wave. Moshe Segal. Academia Letters, Article 3600. https://doi.org/10.20935/AL3600

[3] Consolidating Electromagnetic waves might embed more traceable Energy than the sum of the traceable Energies embedded in the waves before consolidation. Moshe Segal. Academia Letters, Article 3768. https://doi.org/10.20935/AL3768

[4] The Nature of Space and Dark Energy, Based on Electric and Magnetic Fields' Behavior in Space in the EnergyPairs Theory Framework. Moshe Segal. Theoretical Physics Journal by Physics Tomorrow Letters (PTL). https://2edd239a-21aa-41cc-a45e-84832f36b982.filesusr.com/ugd/04176b_5e77c3b53281421290d97119d0b90052.pdf

[5] Does Destructive Interference Destroy Energy? Kirk T. McDonald Joseph Henry Laboratories, Princeton University. http://www.physics.princeton.edu/~mcdonald/examples/destructive.pdf

[6] Electron-Positron annihilation. Wikipedia. https://en.wikipedia.org/wiki/Electron%E2%80%93positron_annihilation

[7] Pair Production. Physics. https://www.britannica.com/science/pair-production

[8] A New Theory Expands Einstein's General Relativity Theory to Include Both Electric Charge and Mass Entities. Moshe Segal. Theoretical Physics Journal by Physics Tomorrow Letters (PTL). https://2edd239a-21aa-41cc-a45e-84832f36b982.filesusr.com/ugd/04176b_5399eb07c7334d9d965cc3685558dea1.pdf

[9] Einstein: Ether and Relativity. http://mathshistory.st-andrews.ac.uk/Extras/Einstein_ether.html

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