

Antimatter Multiverses

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Abstract

The probability of creating Antimatter Multiverses is the same as the probability of creating Matter Multiverses since the Laws of Physics do not differentiate between matter and antimatter. The interaction of Matter and Antimatter Multiverses would destroy all the lower dimensions of both Multiverses allowing only the higher dimensions of the bigger Multiverse to survive. Energy within the void builds both types of Multiverses. Entropy within the void ends the building process to send all the mass back into the original levels of the void as Energy that is continuously being exchanged between the void and the two kinds of Multiverses.

Keywords

Antimatter Multiverses, Matter Multiverses, Void, Two Kinds of Multiverses

1. Introduction

Time can move only in the forward or backward direction. But forward and backwards are relative because we cannot know by experiencing time which way it really flows. If it were flowing backwards for us, we would get used to that effect of the flow of time and think that it is moving forwards. The only thing we know for sure is that time for matter and antimatter flow in opposite directions and that is the reason matter and antimatter annihilate each other while cancelling time [1]. Cancellation of time is the sole reason for ending either of the two physical Multiverses.

In our Matter Multiverse time is moving slower because Energy from the void is used to build higher dimensions with lower Entropy that destabilizes the system. At the final n th dimension the instability of the system would send all the Energy of the Matter Universe into the $(n + 1)$ st dimension of the void from which would arise a n th dimensional Antimatter Universe making time move in the opposite direction to send all the Energy back into the original “ n ” levels of

the void [2]. But now time would move way faster than when the Matter Multiverse was being built because an unstable system without an Energy source wants to return to stability quickly. Think of pulling a rubber band slowly by putting Energy into it with your fingers. As soon as you let the rubber band loose, it will snap back quickly to return to its original length. Hence make a system unstable by putting Energy into it slowly, but let the system return to stability on its own and it will do so quickly.

It is equally possible for the Energy from the $n = 0$ level of the void to create $n!$ 1D Antimatter Multiverse which can grow slowly in dimensions by drawing Energy from the different levels of the void, and then when it has reached the final n th value for instability to kick in, it would create a Matter Multiverse arising from the $(n + 1)$ st level of the void that would snap back quickly by depositing all its Energy back into the original “ n ” levels of the void. Hence Matter and Antimatter Multiverses can be created with equal probability from the Energy levels of the void since the Laws of Physics show no preference between matter and antimatter because they are both made of the same type of mass differing only in the way time flows for them.

If a Matter Multiverse were to merge with an Antimatter Multiverse, they would destroy equal parts of each other sending all the Energy created back into the void while the remaining parts of the bigger Multiverse would remain intact and continue to grow. As an example, if a 5th dimensional Antimatter Multiverse merges with a 7th dimensional Matter Multiverse, since the 7th dimensional Multiverse has all the lower dimensions embedded in it, only the 6th and 7th dimensional parts of the Matter Multiverse would survive to give rise to a crippled Matter Multiverse, while destroying all the Antimatter Multiverse, but the Matter Multiverse can go on creating higher dimensional Matter Universes until the final n th dimension for it to become unstable has been reached. Now when the Matter Universe begins the reverse process of creating Antimatter Universes to send all its Energy back into the void quickly, the process will end after the 6th dimension has been annihilated, because the first 5 dimensions no longer exist since the Energy from the first 5 dimensions have already been deposited into the void.

Energy and Entropy from within the void are central to creating and annihilating both types of Multiverses. The Energy of the void is made up of photons [3] and each level “ n ” in the void has many sublevels wherein the photons can reside. Photons obey Bose-Einstein Statistics and in the $n = 0$ level the photons exist in all the different sublevels and hence act incoherently or independently of one another. They have the lowest Energy but the highest Entropy. In the final “ n ” level all the photons are in the lowest sublevel possible as in the case for Bose-Einstein Condensate which occurs at very low temperatures in our 3D Matter Universe. The photons act coherently and in a compacted manner to increase the Energy but decrease the Entropy. By compacted, we mean all the photons are occupying the same lowest sublevel or having the same Energy. Be-

sides the photons acting coherently to increase the Energy by increasing the amplitude of the wave, the wavelength of the compacted system is shorter according to the Wave Particle duality $\lambda = h/mv$ since the mass m for the higher dimensions is compacted and has a greater density, their mass per unit volume is heavier. For photons momentum $p = h/\lambda$. Hence their momentum p and Energy $E = pc$ are greater in the higher dimensions. Since space and time do not exist within the void neither can Temperature exist therein. Hence the lowest Temperature in any level would correspond to the lowest sublevel of that level and therefore the lowest Entropy which would occur for the highest value of “ n ” within the void. The highest n th dimension formed would fall apart into the void of the next higher dimension that it surrounds. Let us examine the process by which this instability occurs.

Since light moves slower in a denser medium, if the medium becomes very compacted or its mass becomes very dense as in the case of the lowest Entropy for the highest “ n ” value, the speed of light becomes very small in the n th dimensional material medium and therefore the Universe of that medium would be rotating at a speed greater than the speed of light. This would lead to Cherenkov Radiation being emitted as has been observed in Nuclear Reactors for electrons moving faster than the speed of light in the water that surrounds the Nuclear Reactor. Rotational Energy of the Universe would be radiated away into its atmosphere, and as the Centrifugal outward force drops below the Gravitational inward force the Universe would feel a net inward force which would make it collapse into the next higher level of the void that the Universe surrounds.

2. Physics Is All about Energy

The source of all creation viz. Matter Multiverses and Antimatter Multiverses is the Energy from within the void. Photon Energy aka Dark Energy have a wave-like nature within the void while Energy has a particle-like nature in the two Multiverses. Energy within the void is a quantum effect while the Energy of the physical world is classical based on $E^2 = (mc^2)^2 + (pc)^2$ for objects in motion or $E = mc^2$ for objects at rest, where E is the Energy and

$$\sqrt{E} = \pm q \sqrt{\frac{1}{24\pi\epsilon_0 r}} \times \left\{ (\sin^2 \theta \cos^2 \phi + \gamma^2 \sin^2 \theta \sin^2 \phi + \gamma^2 \cos^2 \theta) + (\gamma^2 - 1) \times (\cos^2 \theta + \sin^2 \theta \sin^2 \phi) \right\}^{1/2} \quad \text{for charges } \pm q.$$

whereby Energy creates mass, space, time, and charge since $c = d/t = \text{Space/Time}$ and charge is always associated with mass. Hence no mass implies no charge. For massless particles like photons that exist within the void $E = pc$. According to the Special Theory of Relativity for objects that move close to the speed of light space shrinks and time slows down. Hence for massless photons that are moving at the speed of light both space and time $\rightarrow 0$. Therefore mass, space, time, and charge cannot exist within the void, only photons of different Energy

levels can exist therein. This continuous exchange of Energy between the void and the Matter and Antimatter Multiverses is a dynamic and not a static process. Since mass is created by the photon Energy from within the void, comparing rest mass Energy = mc^2 to photon Energy = pc implies photons can carry a tremendous amount of Energy. As an example, 1 kg of rest mass Energy would correspond to 9×10^{16} Joules of photon Energy. To create multiple Matter and Antimatter Multiverses the photon Energy within the void would have a very large value but is this value finite or infinite? If it is finite then only a finite number of Multiverses can exist simultaneously as the void runs out of Energy to create more, but if it is infinite then an infinite number of Multiverses can exist simultaneously. The Conservation of Energy Principle does not solve this paradox.

3. Conclusion

The probability of creating Antimatter Multiverses is the same as the probability of creating Matter Multiverses. Energy in the two different kinds of Multiverses exists as particles starting with the elementary particles of each dimension while only the elementary particles of the first dimension which make up the first column of the Standard Model are stable and into which all other higher level elementary particles decay because they have heavier mass. This is because the Entropy of level $n = 0$ is the most stable and therefore all the higher dimensions contain elementary particles of the first dimension but in a more concentrated or denser form as the n th dimensional value increases. There is a continuous exchange of Energy between the void and the two types of Multiverses. Energy is being transformed from one type to another.

Conflicts of Interest

The author declares no conflicts of interest regarding the publication of this paper.

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