The Possibility of EM Drive Propulsion in the Context of Special Relativity

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Abstract:

The EM Drive proposing propulsion without the use of propellant by generating thrust within a sealed electromagnetic cavity. The assertion questions established principles of momentum conservation and prompts inquiry into its compatibility with Special Relativity, which governs electromagnetism and relativistic mechanics. This article hopes to explore a new innovative concept of idea, that can combine the proposed theoretical models of the EM Drive, by analyzing the Special Relativity on propulsion methods, and explores the potential for novel physical phenomena consistent with relativistic physics and quantum physics to account for the renovation anomalous thrusts.

Key words: EM Drive, EM Drive Propulsion, Special Relativity, EM Drive Ring engine

Introduction:

The EM Drive is an experimental propulsion idea where electromagnetic waves bounce within an asymmetric cavity, supposedly generating net thrust without releasing mass. If achievable, this device would make the interstellar travel quite much possible. This research paper suggested EM drive is fundamental to modern physics and are increasingly formalized by Einstein's Special Relativity. This research paper, proposed that, we may utilized Special Relativity to reframes classical mechanics by establishing the Constant variable, to achieve

an possible propulsion thrust, that fusion with a comprehensive spacetime framework. It exclusively governs electromagnetic phenomena and particle behavior, ensuring that conservation laws are upheld across all inertial reference frames. Consequently, any propulsion system purported to produce reactionless thrust within relativistic.

As we may understand, the EM Drive, or Electromagnetic Drive, is a highly experimental propulsion concept that involves non-insufflation to spray and jet to make an insufflation. This research paper suggested an innovative concept that resonant bouncing of electromagnetic waves within a specifically designed asymmetric resonant cavity. Combine a Super Magnet Ring with a superconductor rolling magnet stick, which produces a repulsive-repulsion force so it can generate a magnetic force capable of creating a repulsive force that activates the EM drive engine.

These innovative concepts of hypothesized aim to generate a net propulsive force—thrust without the expulsion of propellant mass, by utilizing a constant magnet that produces a repulsive force on each side, seems to be a possible way to achieve the EM drive engine. So, if we combine the concept of relativity with quantum physics. These principles are, in turn, deeply embedded within the fabric of Einstein's Special Relativity, which redefines the classical mechanics paradigm by establishing the invariance constant in all inertial frames that can integrate magnet space with time likewise in a co-unified magnet Minkowski.

Special Relativity specifically governs electromagnetic interactions and relativistic particle dynamics, ensuring that conservation laws are upheld across all inertial reference frames. Consequently, these hypothetical reactionless propulsion systems, such as the EM Drive, utilizing our new concept of idea, are compatible with fundamental conservation laws and relativistic energy-momentum relations, based on the principles of special relativistic physics that do not violate the laws of physics.

Method:

This research article reveals the consultation theory in Specialtheory of Relativity, Einstein, A. (1905), and quantum physics, Plettner et al. (2005), to explore the possibility of the EM drive renovation. In addition, this research paper utilizes the consultation theory within the realms of special relativity and quantum physics to explore the potential of renovation of the EM drive. It delves into the theoretical framework and methodology used to analyze these complex topics, including the application of EM drive engine modeling, review of existing special relativity theory, and quantum physics deliberations to explore the feasibility of the new Engine (EM drive).

Literature Review:

This research paper draws on the theory of special relativity by Einstein, A. (1905), and quantum physics by Plettner et al. (2005). These theories were used not because they are easy, but because they offer interesting understandings to consider. They demonstrate both experimental and theoretical possibilities when applied to the EM drive redesign, providing theoretical support for our innovative idea of enhancing our new Ring design EM drive engine.

Discussion on the Possibility of EM Drive and the Special Relativity:

Special Theory of Relativity

The Special Theory of Relativity, developed by A. Einstein, (1905) changed our understanding of space-time & motion. This theory includes key principles such as the relativity of simultaneity, time dilation, length contraction, and the invariance of the spacetime interval. These phenomena are mathematically described by Lorentz transformations, which replace the classical ideas based on Galilean relativity. The theory has significant implications in modern physics, supporting fields like quantum field theory and cosmology.

Applying the special theory of relativity to itself suggests a potential explanation for the duality of particles and waves, as well as quantum theory. While many scientists are skeptical about merging these two principles, actually there is a crucial connection between the dual nature of particles and waves and the core ideas of special relativity.

The special theory of relativity to its own foundational principles offers a compelling framework for understanding the wave-particle duality inherent in quantum mechanics. This perspective posits that the relativistic invariance and Lorentz transformations may underpin the probabilistic and wave-like behavior of particles at quantum scales. While mainstream physics remains thoughtful about unifying these paradigms due to their conceptual differences, emerging theories suggest that the duality could emerge from relativistic spacetime fabric modifications, possibly related to field interactions at subquantum levels. This research paper deliberate these theories to explore advanced propulsion concepts like the EM Drive, where electromagnetic resonances and virtual particle dynamics within spacetime could be influenced by relativistic effects (magnetic effect), offering novel insights into energy manipulation at the interface of quantum-field-theory & general-relativity.

Let's imagine that if we observe a wave, the nature of the wave will become a ball. When measuring. This dual quantum concept is similar to the principles of clock slowing and ruler shrinking in special relativity—that is, when two independent people observe the same event, their results may differ. For example, if a person holding a ruler is moving at a high speed, the ruler will appear shorter to a stationary observer. Similarly, when a person holding a ruler accelerates and moves at high speed, the ruler will appear the same to a running observer. From the running observer's (holding a ruler runner) perspective, someone moving at high speed will see the ruler unchanged. This means that when two people observe the same event, as long as their speeds differ, their perceptions of the event will vary. Based on this idea, special relativity and quantum mechanics are actually compatible to some extent because both share similar characteristics.

This passage explores the analogous relationship between wave behavior and within the frameworks of special relativity and quantum mechanics. It begins by illustrating how a wave can be visualized as a sphere, emphasizing the probabilistic nature of quantum states. The concept is extended to describe effects, where the observed results depend on the observer's frame of reference. For example, in relativistic physics, the Lorentz contraction illustrates how an object such as a ruler appears shortened when observed from a frame moving at relativistic speeds. This phenomenon occurs because length contraction is a consequence of the invariance of the speed of light and the relativity of simultaneity, leading to different measurements depending on the observer's inertial frame. Moreover, the example of an object moving at high velocity highlights how length contraction is symmetric; from the perspective of the moving observer, the stationary ruler appears contracted, demonstrating the strength of relativity. The discussion further suggests that the similarity in observational discrepancies under different inertial frames hints at a conceptual that may bridge the gap in between the principles underlying special relativity and quantum mechanics, particularly in the context of phenomena. While these two theories have distinct foundational postulates, their inherent reliance on the frame of reference highlights potential conceptual commonalities. In futuristic propulsion systems such as EM drives, understanding observer-dependent energy and

momentum transfer is crucial, as they challenge conventional physics by proposing propulsion without propellant through anisotropic electromagnetic radiation. Such phenomena may necessitate a renovation of the relativity principles and quantum interactions at macroscopic scales, potentially revealing new quantum-field interactions or anomalous inertial effects consistent with the observer-dependent nature of physical laws.

To develop an anti-gravity EM drive:

For example, the strong nuclear force, known as asymptotic freedom, and the constrained state of gluons are applied in high-energy physics. This article emphasizes the existence of transcendent substances smaller than strings. These substances are called ultramicrogravitons and ultramicrogravitons in this article.

The two can combine Einstein's special theory of relativity with quantum mechanics to explain the feasibility of their serial connection. If we can create a strong magnetic field that moves at high speed, we will have the opportunity to generate a strong gravitational field. When we can build two magnet repulsive fields, it may imply that we can develop an anti-gravity EM drive. (Magnetic monopole EM drive)

Applying a strong magnetic field to a gravitational field can generate a magnetic pull and push effect, which might allow us to develop an innovative engine driven by a pure repulsive magnetic force field. (Magnetic monopole)

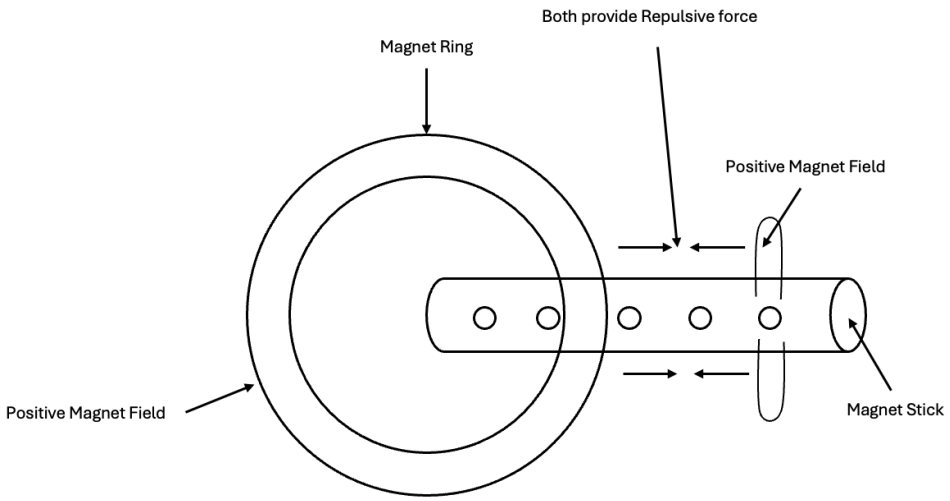
That mean, a strong magnetic field in the presence of a gravitational field could potentially facilitate the development of advanced propulsion systems that utilize electromagnetic forces to generate thrust. This concept involves leveraging the interaction between intense magnetic fluxes and gravitational gradients to produce a

force field capable of propelling a spacecraft without traditional propellant. Such an approach might draw upon principles from electromagnetism, general relativity, and quantum field theory to engineer a novel electromagnetic drive, to operate via mechanisms analogous to or extending current EM drive research, emphasizing the manipulation of vacuum energy or spacetime curvature.

Magnetic Repulsive Engine (EM drive properties):

Magnetism possesses the property of like-like attraction at a distance and opposite-like attraction. If we can create gravity and repulsion simultaneously, these interconnected forces would appear intermittently. This allows a strong magnetic field to be displayed through this kind of gravity and repulsion, supporting a feasibility similar to the equivalence principle in asymptotic freedom. These two forces (positive gravity field and positive repulsion) are analogous to how gravity and repulsion interact. This suggests that, under specific conditions, the special theory of relativity and quantum mechanics could potentially be compatible. This opens up the possibility of creating a new innovative EM-engines with design where speed varies with space and time bends with space with the magnetic utilization. In EM drive Ring-go engine design.

Figure 1:



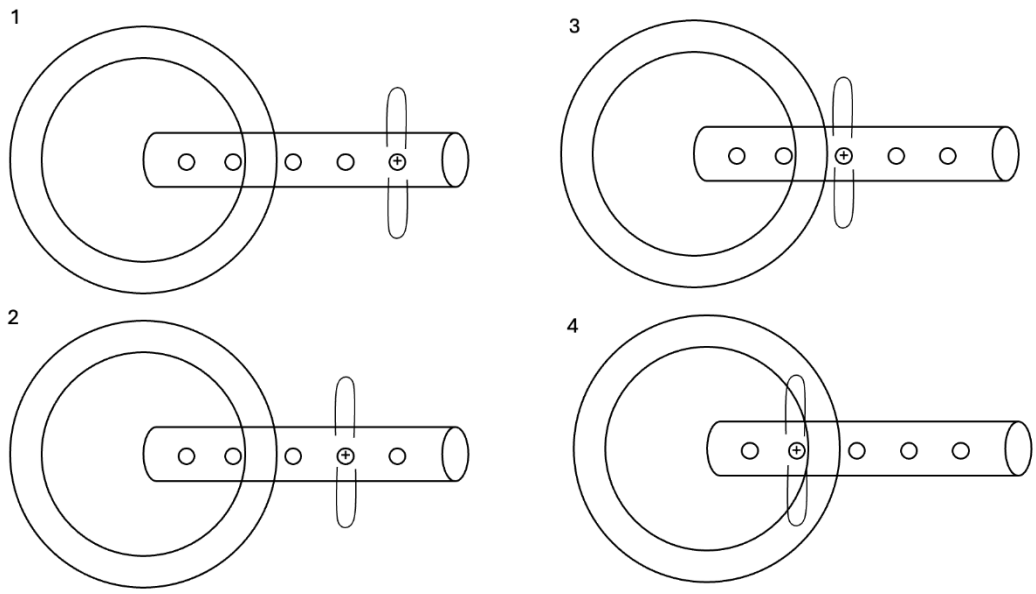
Magnet Ring that create a positive(+) field, magnet stick that provide [same positive (+)] repulsive force when simultaneal motion

EM Drive Ring Engine

Magnetism exhibits two primary properties: like-like attraction at a distance and opposite polarity repulsion (repulsion-repulsive). In theoretical physics, if it were possible to generate both gravitational-like Repulsion and repulsive forces simultaneously, these interconnected interactions could manifest intermittently, leading to complex field dynamics. Such a mechanism might allow a strong magnetic field to couple with gravitational field and repulsion-repulsive phenomena, which create a push force, that push the spaceship to move, potentially aligning with principles akin to the equivalence principle within the framework of asymptotic freedom observed in quantum chromodynamics. These phenomena bear resemblance to the interactions between gluons and color charges, where force carriers mediate complex interactions. (U1+U2+U3). From Yeung Mi Theory (1954). Magnetic interaction→ Weak interaction→ Strong interaction = quantum chromodynamics.

This analogy suggests that, under certain conditions, the reconciliation of special relativity and quantum mechanics could be feasible, paving the way for breakthroughs in propulsion technology. For instance, advanced propulsion concepts like the EM drive aim to manipulate internal electromagnetic fields to produce thrust without expelling propellant, possibly exploiting the coupling of electromagnetic, gravitational, and quantum forces. Such developments could lead to propulsion systems where spacecraft speed varies with spacetime curvature, effectively enabling navigation through space with minimal energy expenditure.

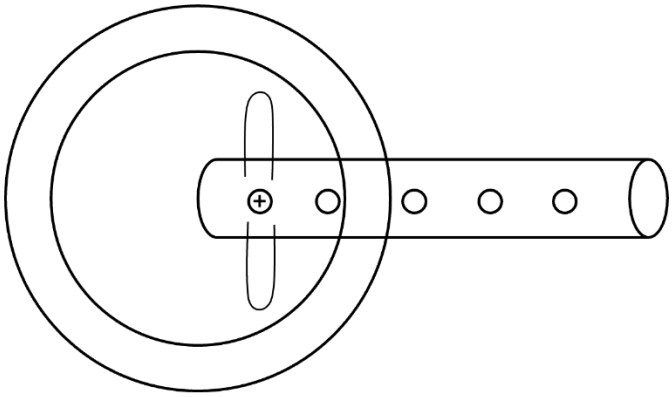
Figure 2:



EM Drive Ring Engine Workflow

As Special Relativity imposes strong interaction theoretical support on reaction in propulsion such as the EM Ring Drive, new theories attempt to explain these anomalies through relativistic concepts involving mass-energy changes and gravitational influences. Theoretical progress based on relativistic electrodynamics are crucial to determine the EM Drive feasibility.

Figure 3:



So, with consequencely create a repulsive force, that can provide a push force, these repulse force can push the Spaceship move.

EM Drive Ring Engine Repulsive Force

In conclusion,

This comprehensive research article provides an in-depth exploration of the consultation theory within the frameworks of special relativity and quantum physics, aiming to elucidate its implications for advanced propulsion concepts, specifically focusing on the theoretical underpinnings and potential mechanisms of the EM drive Ring design (Electromagnetic Drive). This research article examines the interplay between relativistic effects, quantum field interactions, and electromagnetic momentum transfer, seeking to assess the feasibility and scientific validity of the EM drive as a novel, reactionless propulsion system. Through rigorous analysis and detailed exposition of higher-order physics phenomena, this study endeavors to contribute to the ongoing discourse on breakthrough propulsion physics.

This innovative concept of the new EM drive engine can possibly combine special relativity with quantum physics theory without violating Newtonian laws, thus bridging the gap between the Newtonian force, special relativity, and quantum physics. Making it possible to connect all the theories in a coherent and aligned manner.

References:

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[2] Plettner et al., "The impact of Einstein's theory of special relativity on particle accelerators," J. Phys. B: At. Mol. Opt. Phys. 38 (2005) S741–S752.