Hidden Antimatter Bundling Theory: A Hypothesis Challenging Conventional Matter-Antimatter Understanding

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Abstract

This paper proposes the Hidden Antimatter Bundling Theory, a novel hypothesis challenging the conventional separation of matter and antimatter. The theory suggests that antimatter is not absent from the observable universe but inherently bundled within matter in stable, deeply coupled structures. High-energy collisions may not create antimatter but instead separate these bundled configurations, revealing pre-existing antiparticles. Furthermore, this paper challenges the established notion of annihilation, proposing that matter-antimatter interactions involve the splitting and rebundling of fundamental components, not total destruction. This hypothesis offers an alternative explanation for the observed matter-antimatter asymmetry and suggests new experimental directions.

1. Introduction

The matter-antimatter asymmetry in the universe remains one of the most profound unsolved questions in modern physics. The Standard Model assumes that matter and antimatter are fundamentally distinct, and their interactions result in mutual annihilation, releasing energy in the form of photons. However, this paper proposes an alternative view: matter and antimatter are not fundamentally separate but coexist within tightly bound structures that remain hidden under normal energy conditions.

2. Core Hypothesis: Hidden Antimatter Bundling

2.1 Fundamental Proposition

Protons, neutrons, and electrons may inherently contain their antiparticles in tightly coupled internal bundles. These structures remain stable and undetectable in everyday conditions but can be separated during high-energy collisions, as in particle accelerators.

2.2 Implications for Particle Creation

This view suggests that high-energy collisions do not create matter-antimatter pairs from pure energy but instead release and separate pre-existing, hidden bundles of matter and antimatter.

2.3 Reconsidering Annihilation

Traditional interpretation:

- Proton + Antiproton → Total annihilation → Gamma rays.

Proposed interpretation:

- Proton + Antiproton → Splitting into subcomponents → Energy release → Possible recombination into a stable structure.

This suggests that what we call annihilation is actually a high-energy rebundling process, with photon emission as a byproduct, not total destruction.

3. Detailed Examples

3.1 Proton and Antiproton Interaction

Current View:

- Proton and antiproton annihilate into pure gamma radiation.

Proposed View:

- Proton and antiproton split into more fundamental components (possibly preons or unknown substructures).
- Significant energy is released during the splitting.
- The components may recombine into a stable proton, antiproton, or neutral configuration.

3.2 Electron and Positron Interaction

Current View:

- Electron and positron annihilate, producing photons.

Proposed View:

- The electron and positron split, release energy, and potentially recombine into a stable structure or rebalanced particle.

3.3 High-Energy Collisions

Current View:

- Energy is converted into particle-antiparticle pairs.

Proposed View:

- High-energy collisions separate pre-existing bundles of matter and antimatter.
- Observed particle-antiparticle pairs are not created but released from the bundled state.

4. Theoretical Parallels

4.1 Preon Models[1]

Preon theories suggest quarks and leptons are composed of smaller subunits. This theory aligns with such models by proposing that particle-antiparticle differences are not fundamental but structural.

4.2 Hidden Sector Physics[2]

Some theoretical frameworks propose particles that exist in hidden sectors, potentially explaining why antimatter is undetected but omnipresent in a bundled form.

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[1] *"Preon,"* Wikipedia, last modified June 30, 2024, https://en.wikipedia.org/wiki/Preon, accessed July 6, 2025.
[2] *"Hidden sector,"* Wikipedia, last modified February 1 2025, https://en.wikipedia.org/wiki/Hidden_sector, accessed July 6 2025.

4.3 Quantum Vacuum Fluctuations[3]

Virtual particle-antiparticle pairs constantly form and annihilate in the quantum vacuum, hinting at a deeper inherent connection between matter and antimatter.

5. Experimental Reinterpretations

- **High-Energy Collisions:** May not create antimatter but reveal pre-existing hidden bundles.
- **Deep Inelastic Scattering:** Potential to reanalyze data for substructures within protons, neutrons, and electrons.
- **Annihilation Events:** Could be recombination events instead of complete destruction.
- **Neutron-Antineutron Oscillation:** Easier transitions may indicate underlying matter-antimatter coupling.
- **Electron-Positron Data:** May contain hidden recombination signatures previously misinterpreted.

6. Predictions and Proposed Tests

1. Detection of substructures in protons, neutrons, and electrons at higher experimental resolution.
2. Energy release patterns in collisions suggesting separation rather than creation.
3. Anomalies in gamma-ray signatures from so-called annihilation events.
4. Easier detection of neutron-antineutron oscillations.
5. Reanalysis of past collider experiments for hidden antimatter bundling signatures.

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7. Conclusion

The Hidden Antimatter Bundling Theory proposes that antimatter is not missing but inherently coupled within matter. This theory challenges the current understanding of matter-antimatter

[3] *"Quantum vacuum,"* Wikipedia, last modified May 14 2025, https://en.wikipedia.org/wiki/Quantum_vacuum, accessed July 7 2025.

interactions, suggesting that observed annihilation events may instead be high-energy splitting and rebundling processes. It offers a new lens for viewing particle physics and invites reanalysis of existing data with this alternative framework in mind.

8. About the Author

Advocate Anwar M Quereshi, Palakkad, Kerala, India, is an independent thinker and researcher who focuses on challenging conventional scientific and legal assumptions and exploring novel frameworks in fundamental physics.

9. Submission Notes

This paper is submitted to viXra.org for open-access discussion and exploration. The paper was developed with the assistance of AI (ChatGPT) for brainstorming, structuring, and language refinement. The core scientific ideas and hypotheses are the author's original work.