The G2-Force: A Hydrodynamic Model of Antimatter Repulsion and Cosmic Acceleration

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Abstract

This paper presents a novel hydrodynamic model of antimatter-gravity interaction, proposing two distinct gravitational components: the standard attractive gravity (G_1) and a repulsive "hydrophobic" force (G_2) specific to antimatter. The model provides explanations for cosmological phenomena including dark energy and CMB anomalies, while making testable predictions for current antimatter experiments at CERN.

1 Core Hypothesis

We propose that antimatter (A) interacts with spacetime (P) via two distinct gravitational components:

- G_1: Standard attractive gravity (identical to matter)
- G_2: A repulsive "hydrophobic" force (Ark-o Force)

$$F_A = G_1 \frac{M_A M}{r^2} - G_2 \frac{M_A \rho_P}{r^2} \tag{1}$$

where ρ_P is the local spacetime density (kg/m^3).

2 Implications for Cosmology

2.1 Antimatter Escape

For $G_2 > G_1$:

$$F_{\text{net}} = (G_1 - G_2) \frac{M_A \rho_{\text{crit}}}{r^2} < 0 \tag{2}$$

2.2 Dark Energy Alternative

Effective dark energy density:

$$\Omega_\Lambda \approx \frac{G_2 - G_1}{G_1} \left(\frac{\rho_{A0}}{\rho_{\text{crit}}} \right) \tag{3}$$

Experiment	Prediction
ALPHA-g	$0.1\% \pm 0.05\%$ slower fall
LHC	Asymmetry $A \approx 0.01$
AEgIS	10% weaker self-gravity

3 Experimental Predictions

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