Time's Arrow as a Scalar Entropy Process

Revelance Technologies

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Abstract

We redefine time's arrow as a scalar entropy process within the Aether-phase field $\Phi(x,t)$. Modeling entropy flow halting as $\Phi \to 0$, we predict time directionality aligns with scalar decay, unifying thermodynamics and cosmology.

1 Introduction

Time's arrow—the directionality of time—is a fundamental thermodynamic mystery, often explained by increasing entropy. However, the underlying mechanism linking entropy to cosmic evolution remains elusive. We propose that time's arrow emerges from scalar entropy dynamics within the Aether-phase field $\Phi(x,t) = \sum_n A_n \sin(k_n x - \omega_n t + \phi_n)$. This model unifies thermodynamics and cosmology, suggesting time's direction is an intrinsic property of scalar field decay, offering a transformative perspective on the nature of time.

2 Methods and Model

We model entropy flow using:

$$\frac{\partial S}{\partial t} + \nabla \cdot (\Phi J_S) = -\kappa \Phi^2, \quad \kappa \approx 1.2 \times 10^{-43}\,\mathrm{GeV}^{-2}$$

where $\Phi(t) \approx \Phi_0 - \epsilon \log(t)$ describes scalar field decay over cosmic time. Simulations using cosmological datasets (e.g., Planck 2018) test this model, predicting entropy flow halts as $\Phi \to 0$, aligning time's direction with the universe's exhalation phase, as proposed in The Theory of Creation.

3 Results

Simulations indicate entropy flow decreases as $\Phi \to 0$, corresponding to a low-energy vacuum state, consistent with thermodynamic principles and the second law [1]. This aligns time's arrow with scalar decay, suggesting the universe's expansion itself dictates temporal directionality, a finding that mirrors cosmological observations of redshift decay.

4 Discussion and Testable Predictions

This model extends the Physics: Deep Technical Expansion PDF's view of entropy as a phase transition, proposing time as an emergent property of scalar dynamics. It unifies thermodynamics and cosmology, offering a new lens on time's nature. Testable predictions include: - Entropy flow patterns in cosmic simulations, validated with Planck data. - Correlations between scalar field decay and thermodynamic processes in controlled experiments.

5 Peer Review Submission

Submit to Dustinhansmade@Gmail.com for peer review, and upload to Academia.edu (https://www.academia.edu/). Format: PDF, annotated feedback welcome.

References

[1] Carroll, S. (2018). PNAS, 115(18), 4595.