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Internal Expansion of the Universe Towards a Structural Attractor: A Proposal of Structured Retrocausality and Dimensional Projection.

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Abstract

We propose a new interpretation of cosmic evolution based on an internal expansion of the universe towards a structural attractor, instead of a traditional external expansion. We introduce a unifying equation that describes the dynamics of structural flow, physical consciousness, and future action. This proposal suggests a natural form of retrocausality, compatible with structures from string theory. Finally, possible observable consequences and future extensions are discussed.

1. Introduction

Contemporary cosmology is based on the external expansion of spacetime from an initial singularity. However, various theoretical inconsistencies motivate the exploration of alternative models. Here, we present a theory where expansion occurs inward, converging towards a structural attractor that organizes the material and causal evolution of the universe.

2. Theoretical Framework

2.1 Internal Expansion and Structural Attractor

The universe would tend toward a state of maximum organization located within its own internal structure. The 'structural attractor' defines a physical destiny that determines the dynamics of matter and information.

2.2 Physical Retrocausality

We propose that causality is bidirectional at a fundamental level. The future influences the present through action gradients projected from the structural attractor.

3. Proposed Unifying Equation

We propose the following relationship:

$$\nabla \cdot S(x,t) + \partial C(x,t)/\partial t = \kappa \cdot \partial A(x,t_f)/\partial t_f$$

where:

- $S(x,t)$ is the local structural flow.
- $C(x,t)$ represents the materialized physical consciousness component.
- $A(x,t_f)$ is the projected future action.
- κ is a structural coupling constant.

4. Relation to String Theory

The internal structure towards which the universe converges can be understood as an effective projection of higher compactified dimensions, as described in string theory. This interpretation suggests that retrocausal processes are manifestations of higher-dimensional structures.

5. Predictions and Observable Consequences

- Residual anisotropies in the cosmic microwave background.
- Evolution of the cosmological constant.
- Possible extended quantum coherence effects in isolated systems.

6. Additional Considerations

The emergence of harmonic proportions, such as the Fibonacci sequence, could be a secondary manifestation of the tendency towards optimal organizational patterns, although its specific role will require further investigation.

7. Conclusions

Internal expansion towards a structural attractor, combined with projective retrocausality, offers a new perspective for understanding cosmic evolution. The formalization of this theory could open new paths in both cosmology and fundamental physics theories.

References

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