Research Plan: Absolute Space and the Unified Physical Theory

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1 Project Title

Absolute Space, Direction Number Principle and Unified Physical Theory Research Plan

2 Research Background and Core Objectives

Modern physics, within the framework of relative spacetime, faces fundamental dilemmas such as the difficulty in unifying relativity and quantum mechanics, and the reliance on dark matter and dark energy in cosmology.

This research **does not focus on dark matter** as its core. Instead, it proceeds from the ultimate origin of physics to **reconstruct a brand-new unified theoretical system based on *Absolute Space***, providing a first-principles explanation for the speed of light, inertia, gravity, light propagation, and spacetime structure, and establishing a self-consistent, observable and falsifiable absolute theory framework.

3 Core Theoretical Framework

3.1 Basic Postulates of Absolute Space

- There exists a unique, uniform and static **Absolute Space** as the background reference frame for all motions and physical processes.
- The constancy of the speed of light is an intrinsic property of Absolute Space, rather than a consequence of spacetime relativity.
- Phenomena such as gravity, inertia and redshift are all manifestations of the interaction between matter and Absolute Space.

3.2 Definition of Direction Number

Define the fundamental physical quantity in Absolute Space — **Direction Number**:

$$N = \frac{c}{g}$$

where c is the speed of light in vacuum, and g is the equivalent acceleration of the Absolute Space background field acting on photons.

3.3 Photonic Propagation Dynamics (Core Equation)

Directly derived from the postulates of Absolute Space:

$$\frac{d\lambda}{dr} = \frac{g}{c^2}\lambda$$

3.4 Redshift and True Distance

Integrate the core equation to obtain the redshift law and true distance formula:

$$1 + z = \exp\left(\frac{gD}{c^2}\right), \quad D_{\text{true}} = \frac{c^2}{g}\ln(1+z)$$

Observations including galaxy rotation curves and gravitational lensing can be naturally explained by this formula. Dark matter is only an apparent effect caused by the miscalibration of cosmic distances, not a real existence.

4 Current Research Progress

1. Completed the construction of basic postulates and logical system of the Absolute Space theory;
2. Strictly derived the direction number, core propagation equation, redshift formula and true distance formula;
3. Finished preliminary verification of galaxy rotation curves, the Bullet Cluster and other observational data, with self-consistent results;
4. Formed a preliminary unified logical chain covering classical mechanics, gravity, optics and cosmology.

5 Future Research Plan

1. Improve the mathematical structure and field theory formulation of Absolute Space;
2. **Unify the core phenomena of quantum mechanics** from the perspective of Absolute Space, and establish the internal connection between absolute theory and quantum laws;
3. Realize the unified description of gravity, electromagnetism and quantum laws, and construct the framework of a grand unified theory;
4. Establish an absolute cosmological model without dark matter and dark energy;
5. Explain key cosmological issues such as the Hubble tension, cosmic microwave background, baryon acoustic oscillations and large-scale structure;
6. Propose feasible observational and experimental schemes to directly verify the existence of Absolute Space.

6 Research Statement and Cooperation Intention

I am an **independent researcher** engaged in long-term independent research on fundamental physics and cosmic origin, without institutional affiliation or research funding. I am faced with limited research conditions and difficulties in promoting research work.

This research plan aims to publicize the theoretical framework, establish academic priority, and **sincerely seek the understanding, academic exchanges and cooperation with peers at home and abroad**. I hope to jointly improve the theoretical system, carry out numerical calculations and observational verification together, and promote breakthrough exploration in fundamental physics.