A Unified Framework for Measuring the Universe: Integrating Dark Energy, Singularity, and Gravity through a Decimal-Based Approach

Saji Mathew Perinjelil MS, HT (ASCP) CM

3007 Lori Ann Court, Missouri City, Texas - 77459, USA

Abstract: Understanding the fundamental nature of energy and matter has been a cornerstone of modern physics. Albert Einstein's equation, $E = mc^2$ [3], describes the energy of mass particles. This paper introduces a novel equation, $SE = Sc^2$ [1] to quantify the energy of massless particles. By integrating both equations, we suggest a unified approach to measuring and categorizing all particles in the universe, including those with positive and negative charges. This framework employs the decimal system to provide a scalable, measurable system for analyzing dark matter, singularity, and gravitational phenomena.

Keywords: Dark Energy, Singularity, Massless Particles, Decimal System, Digital Pathology, Gravity Theory

1. Introduction

Traditional physics distinguishes between particles with mass and those without, yet both contribute fundamentally to the structure of the universe. By applying $E = mc^2$ for mass bearing particles and introducing $SE = Sc^2$ [1] for massless particles (where *S* represents a singularity - based scalar constant and *c* the speed of light), we can begin to bridge gaps in our understanding of energy distribution across the cosmos. This theoretical model may offer foundational support for future experimental frameworks in cosmology, potentially aiding in visualizing dark matter and refining quantum gravitational theories. The decimal system allows for zero referenced scale, enabling both positive and negative values to describe energy states.

a) The Role of the Decimal System and Zero

In this framework, zero is not interpreted as void, but rather as a foundational quantum state filled with absolute space and potential particle activity. This framework conceptualizes time as originating from this quantum zero. Embracing this view enables a reevaluation of time and space as deeply interconnected at the micro level, with the decimal system serving as a suitable mathematical structure to express such dynamics [2].

b) Observing Singularity and Energy Calculations

We define singularity as the first observable state of quantum energy capable of emitting light. The proposed $SE = Sc^2$ equation [1] provides a method for estimating this energy. As light emission marks the beginning of time, singularity becomes a key metric for studying gravitational formation. The omnidirectional emission of light from singularities may reveal the underpinnings of universal structure, including the potential to form stellar bodies. Advanced imaging tools and histological staining methods could potentially allow us to identify quark behavior and particle interactions visually [7].

c) Gravity as a Quantum - Level Reaction

Gravity may originate at the quantum level from light emission. According to Newton's Third Law [4], every action has an equal and opposite reaction. If a singularity emits light omnidirectionally, it may experience a reactive force, observable as gravity. This view complements general relativity, which interprets gravity as spacetime curvature caused by mass. At the micro level, however, energy interactions among massless particles in singularities may initiate gravitational effects [5].

d) The Indefinite Nature of Pi and Measurability of Energy

Pi's irrationality complicates efforts to precisely map circular quantum structures. By implementing a zero - centered energy scale using positive and negative values [2], we provide a practical method for mapping energy distributions. This also allows for theoretical frameworks to identify dark energy and matter. Through advanced histological and digital imaging methods, quark particles and energy states may be detected and categorized. Quantum computing and AI may then process this data to refine models of energy behavior [6] [7].

e) Implications for Dark Matter and Energy

Dark matter and energy, long considered elusive, could be analyzed using this redefined framework. If singularities and quantum interactions can be visualized and measured, we can propose a quantifiable basis for their study. The digital imaging of organic and inorganic matter, including cellular and molecular structures—may reveal energetic patterns correlating with dark matter [7].

2. Conclusion

Integrating Einstein's mass - energy equivalence with the proposed massless particle energy equation offers a novel path forward in theoretical physics. This model supports the idea of a measurable universe, anchored by a zero - based decimal system, that encompasses both known and Dark Matter. Future research, particularly involving quantum computing, histology, and AI, may validate and expand this theory, offering new insights into the origin and structure of the universe.

Volume 14 Issue 4, April 2025 Fully Refereed | Open Access | Double Blind Peer Reviewed Journal www.ijsr.net

References

- [1] S. M. Perinjelil, "Redefining Energy Mass Calculations: New Equations for Massless Entities in String Theory," *Int. J. Sci. Res. (IJSR) *, vol.13, no.2, pp.258–259, Feb.2024. [Online]. Available: https: //www.ijsr.net/getabstract. php?paperid=SR24131081740. Doi: 10.21275/SR24131081740
- [2] S. M. Perinjelil, "A Theoretical Approach to Understanding Dark Matter and Dark Energy," *Int. J. Sci. Res. (IJSR) *, vol.13, no.10, p.907, Oct.2024.
 [Online]. Available: https://www.ijsr.net/getabstract. php?paperid=SR241010031357. Doi: (DOI not provided)
- [3] E. Siegel, "Einstein's General Theory of Relativity, Explained," *Big Think*, Oct.2022. [Online]. Available: https://bigthink.com/starts - with - a - bang/einstein general - theory - relativity - equation/
- [4] Space Center Houston, "Newton's Third Law of Motion," [Online]. Avalable: https: //spacecenter. org/science - in - action - newtons - third - law - of motion/
- [5] NASA, "Different Gravity," [Online]. Available: https: //www.nasa. gov/stem - content/different - gravity/
- [6] Vaia Learning, "Light," [Online]. Available: https: //www.vaia. com/en - us/explanations/physics/waves physics/light/
- [7] Columbia University Histology Lab, "Histological Techniques," [Online]. Available: https://histologylab. ctl. columbia. edu/histological_techniques/