



# A Hypothetical Theoretical Framework for Understanding the Origin and Expansion of the Universe Through Gravitational and Dark Energy Interactions.

By: Sandeep Saini

I read the Einstein Theory of Relativity written by Max Born. I proposed the Theory of Originality.

If the theory of the Big Bang and singularity is the base of Origin Of Universe then motion of all galaxies, all cosmic particles, Black hole all motion towards the origin of Universe point which we call singularity.

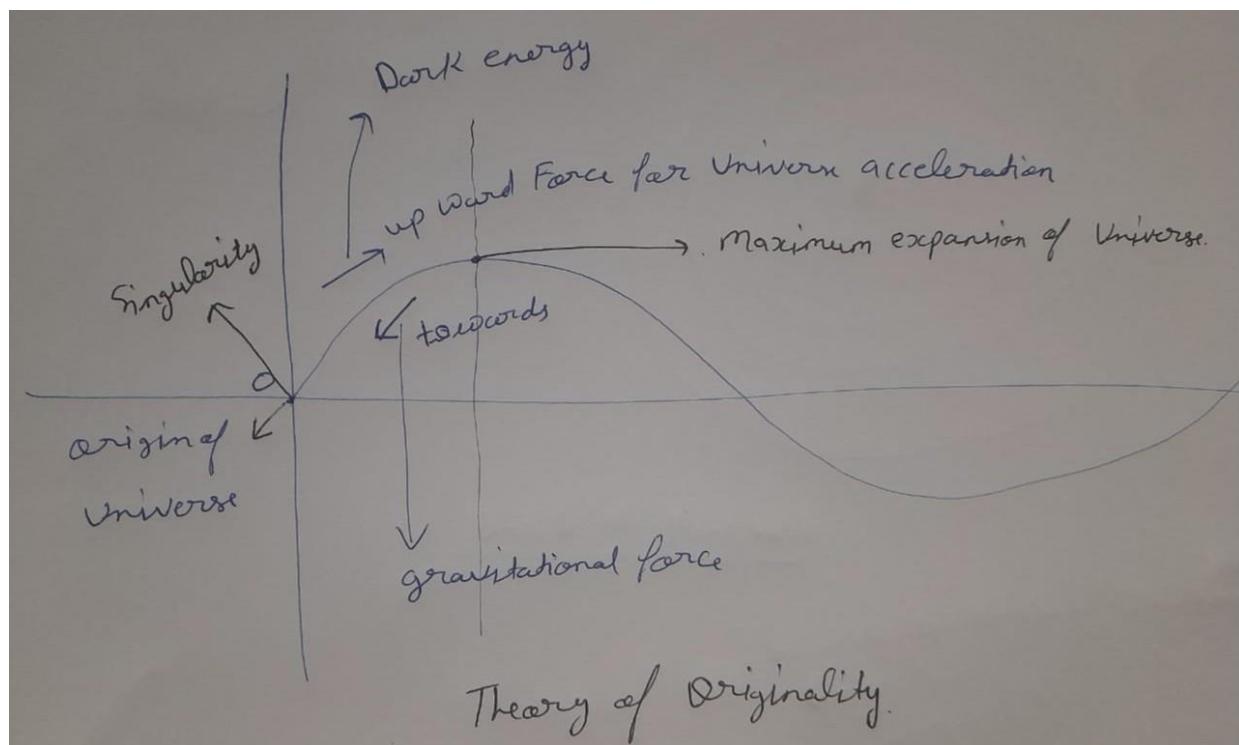
This paper presents a novel theoretical framework for understanding the origin and expansion of the universe by examining the role of gravitational and dark energy interactions. The theory postulates that the universe's expansion is influenced by a fundamental interplay between gravitational attraction and a counteracting force, termed "negative gravitational force" or dark energy. Also proposes that longitudinal wave motion, originating from the singularity, provides key insights into the formation and motion of cosmic structures. Using Newton's Third Law of Motion, this model suggests that the universe expands due to an equal and opposite reaction to the gravitational force acting towards the singularity. Furthermore, the theory explains the motion of black holes, galaxies, and local clusters, which are constantly moving towards or away from the singularity. This framework offers new perspectives on the origin of the universe, its large-scale structure, and the nature of dark energy.

## *Introduction -*

The origin and expansion of the universe remain one of the most fundamental questions in astrophysics. The current widely accepted models, such as the Big Bang Theory and Inflationary Cosmology, explain the universe's expansion, but they do not fully address the nature of the forces governing this process. In particular, the role of gravitational forces and dark energy in cosmic evolution remains a subject of debate.

This paper proposes a hypothetical theoretical framework where the universe's expansion and structure formation can be understood through gravitational attraction and dark energy repulsion. The core idea is that every galaxy, local group, and black hole moves in response to the dual influence of gravitational force (towards the singularity) and negative gravitational force (dark energy, driving expansion).

Additionally, the model introduces longitudinal wave motion originating from the singularity as a potential mechanism that governs cosmic motion. This concept provides a new way to interpret the evolution of large-scale cosmic structures and black hole dynamics.



This paper introduces the concept of dark energy as a negative gravitational force  $F_d$ . According to Newton's Third Law, every force has an equal and opposite reaction. If gravity pulls matter toward the singularity, an equal but opposite force must exist to counteract this pull. This force is hypothesized as dark energy, driving the universe's expansion.

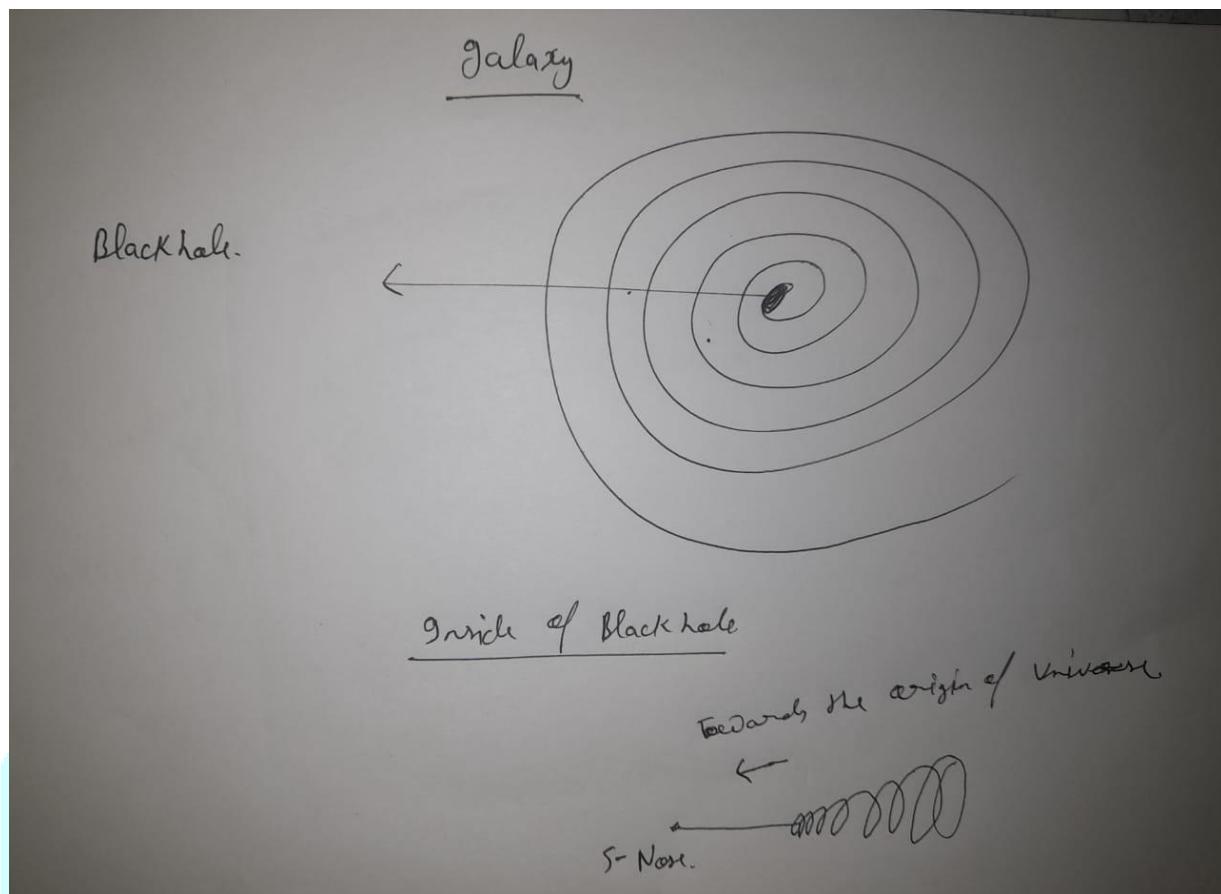
Mathematically, we define dark energy force as:

$$F_d = -F_g$$

Thus, the total force balance in the universe is:

$$F_g + F_d = 0$$

This equation suggests that the expansion of the universe is a reaction to gravitational contraction, providing a new explanation for why the universe continues to expand.

**Motion of Black Holes, Galaxies, and Local Clusters****Black Hole Dynamics and Singularity Motion –**

Black holes, located at the centers of galaxies, experience gravitational attraction toward the singularity while also being influenced by dark energy. The equation governing their motion is given by:

$$F_{bh} = (G M_{bh} \cdot M_{gal} / r^2) - F_d$$

where  $M_{bh}$  and  $M_{gal}$  represent the mass of the black hole and galaxy, respectively.

This equation explains why black holes may either move towards or away from the universe's singularity, depending on the balance of forces.

**Expansion and Motion of Local Clusters -**

Local galaxy clusters exhibit motion patterns that align with the interaction of gravitational and dark energy forces. Some clusters move towards the singularity, while others recede due to dark energy's repulsion. This explains the observed expansion of the universe with variations in cosmic motion.

**Implications of the Model -**

This theoretical framework offers several implications:

- Provides a new explanation for dark energy as a negative gravitational force.
- Explains the motion of galaxies, black holes, and local clusters within a force-balanced system.
- Proposes longitudinal wave motion as a fundamental factor in the universe's structure.
- Establishes a new perspective on cosmic expansion as a counter-reaction to gravity.

**Conclusion -**

This paper introduces a novel theoretical model that explains the origin and expansion of the universe through the interplay of gravitational forces and dark energy. By postulating dark energy as negative gravitational force and incorporating longitudinal wave motion, this framework provides new insights into cosmic evolution. The mathematical representation of force balance supports this hypothesis, suggesting that the universe's expansion is a fundamental reaction to gravitational attraction.

Future research should explore observational evidence and simulations to validate the proposed model.

**References –**

Einstein, A., "The Foundation of General Relativity," *Annalen der Physik*, 1916.

Perlmutter, S., et al., "Measurements of the Cosmological Parameters Using Supernovae," *Astrophysical Journal*, 1999.

Riess, A. G., et al., "Observational Evidence from Supernovae for an Accelerating Universe," *Astrophysical Journal*, 1998.

Hawking, S., "A Brief History of Time," *Bantam Books*, 1988.

