

# Ck Unified Rotational Collapse-Origin Cosmology (URCC)

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## Abstract

This paper introduces a novel cosmological model called the Unified Rotational Collapse-Origin Cosmology (URCC). Unlike the Big Bang theory, which assumes a singularity explosion, URCC proposes that the universe formed through the collapse of pre-existing cosmic dust, which generated gravitational structures, rotational expansion, and the delayed emergence of light. This model reinterprets gravity as a faster-than-light structural force and suggests dark zones are not empty but lightless due to insufficient dust-induced collapse. It further proposes a central gravitational core in the cosmos that sustains universal orbital rotation. The paper culminates by aligning the proposed theory with foundational physical equations.

## 1. Introduction

The standard cosmological model suggests that the universe began with a singularity known as the Big Bang. This paper challenges that paradigm, proposing that structure, motion, and gravitational order preceded the emergence of light and visible matter. Our theory assumes a pre-existing field of cosmic dust and an infinite vacuum where gravitational interactions precede radiation.

## 2. Collapse Before Light

We define the critical dust density  $\rho_c$  as the threshold above which gravitational collapse begins:

$$G(x,t) = \begin{cases} 0, & \text{if } \rho(x,t) < \rho_c \\ \kappa(\rho(x,t) - \rho_c), & \text{if } \rho(x,t) \geq \rho_c \end{cases}$$

Where:  $G$ : gravity intensity,  $\kappa$ : gravitational structure constant

## 3. Gravity Spreads Faster Than Light

Gravity spreads radially from a collapsed center faster than light:

$$D(t) = \alpha * c * t \text{ where } \alpha > 1$$

$\alpha$ : gravity speed factor relative to light

$c$ : speed of light

## 4. Orbital Expansion from Rotational Gravity

Rotational gravity leads to orbital formation:

$$R(t) = R_0 + \beta * \omega * t$$

Where:

$R(t)$ : orbital radius over time

$\omega$ : angular velocity

$\beta$ : structural rotation constant

## 5. Light Emergence from Gravitational Order

Light emerges only when gravitational structure reaches a threshold:

$$L(x,t) = \{ 0, \text{ if } G(x,t) < \bar{\delta} ; \gamma^*(G(x,t) - \bar{\delta}), \text{ if } G(x,t) \geq \bar{\delta} \}$$

Where:

L: light intensity

$\gamma$ : light efficiency factor

$\bar{\delta}$ : gravity-light threshold

## 6. Dark Zones and Multiverse Logic

Dark zones are regions with particles but insufficient dust to produce light. These are not empty — they lack the gravitational collapse required to emit or reflect light. The URCC model also allows multiverses to emerge from imbalance in rotational collapse dynamics.

## 7. Central Core Hypothesis

The universe contains a central black hole or massive star-like object that provides a gravitational anchor for all universal rotation. Each universe rotates in a vast space fabric, linked by gravitational tension and motion balance.

## 8. Key Mathematical Formulas

1. Gravity Formation:  $G(x,t) = \kappa(\rho(x,t) - \rho_c)$ , for  $\rho(x,t) \geq \rho_c$
2. Gravity Propagation:  $D(t) = \alpha * c * t$ , where  $\alpha > 1$
3. Rotational Expansion:  $R(t) = R_0 + \beta * \omega * t$
4. Light Generation:  $L(x,t) = \gamma(G(x,t) - \bar{\delta})$ , for  $G(x,t) \geq \bar{\delta}$

## 9. Concept Diagrams

1. Collapse Flowchart: Dust  $\rightarrow$  Collapse  $\rightarrow$  Gravity  $\rightarrow$  Light
2. Rotational Rings: Center mass  $\rightarrow$  Gravity field  $\rightarrow$  Orbital layers
3. Dark Zone Mapping: Regions with gravity but insufficient density for light

## 10. Relation to Physics Equations

Einstein's Field Equation:  $G_{\mu\nu} = (8\pi G / c^4) * T_{\mu\nu} \rightarrow$  URCC:  $G(x,t)$  forms only if  $\rho \geq \rho_c$

Newtonian Orbital Mechanics:  $F = GMm / r^2 = m\omega^2 r \Rightarrow \omega = \sqrt{(GM / r^3)}$

Friedmann Equation:  $(\dot{R}/R)^2 = (8\pi G / 3)\rho - (k/R^2) + \Lambda/3 \rightarrow$  URCC interprets R as rotational, not linear

Radiation:  $E = h\nu = hc/\lambda \rightarrow$  Light is a result of gravitational structure, not an initial condition

## 11. Conclusion

The URCC model presents a radical shift from explosion-based cosmology to collapse-triggered gravity cosmology. By rethinking the order of cosmic events and grounding each step in logic and physical possibility, this theory offers a bold framework for new exploration in astrophysics, especially in gravitational field modeling, dark zone analysis, and multiverse dynamics.

Note: This concept is a philosophical and theoretical framework based on observational gaps and logical restructuring of cosmology. It is open to simulation, peer review, and future mathematical extension.