A Model of Dual-Cycle Chaos and Nirvanic Equilibrium

A Unified Hypothesis of the Primordial Universe

HAO Ziqian

Abstract

Based on the framework of classical thermodynamic entropy theory, quantum field theory, cosmic evolution logic, and high-dimensional spacetime theory, this paper proposes a unified primordial cosmic hypothesis: the Dual-Cycle Chaos and Nirvanic Equilibrium Model. Using a bar magnet as its core analogy, this model constructs a self-consistent framework for cosmic circulation, systematically explaining the complete cyclic evolution of the universe: from nirvanic convergence to chaotic explosion, from entropy increase to the heat-death peak, from regression to the nirvana peak, and finally back to the primordial nirvanic state.

The model clarifies that the Chaos Cycle and the Nirvanic Cycle are not independent entities, but two symmetric poles formed by matter-energy circulation, corresponding to the N and S poles of a bar magnet. The Heat-Death Point represents the highest potential energy peak at the positive pole, while the Nirvana Point represents the highest potential energy peak at the negative pole; the two are symmetric and correspond reversely.

The universe operates as a unidirectional inner compression channel surrounded by an outer magnetic-field-like circulation path. After reaching the Heat-Death Point, matter-energy slides back toward the Nirvana Point, reconverges into a primordial quantum state, and is compressed inward again to trigger a new chaotic eruption.

Furthermore, the fundamental laws of the universe are not absolutely immutable, although intervention is extremely difficult under current and foreseeable civilizational conditions; theoretical possibility remains. Direct anchoring or

modification of the cosmic cycle is infeasible at this stage, but weak indirect retardation may be achieved through the regulation of cosmic civilizational development.

This paper remains within theoretical physical exploration, does not involve engineering applications or technical devices, and aims to provide a logically closed, self-consistent, and innovative framework for understanding the origin and evolution of the universe.

Keywords

Dual-Cycle Structure; Chaos Cycle; Nirvanic Cycle; Chaotic State; Nirvanic State; Entropy Balance; Primordial Universe; Cyclic Evolution; Heat-Death Point; Nirvana Point; Bar Magnet Model; Unidirectional Inner Channel; Intervenability of Cosmic Laws

1. Introduction

In the system of modern cosmology, including the Big Bang theory, the laws of thermodynamics, quantum vacuum fluctuations, string theory, and loop quantum gravity, various theories explain aspects of cosmic birth, evolution, and fate. However, none have formed a fully unified, self-consistent system covering the entire cycle from primordial origin to terminal return, spanning low to high dimensions and abstract to physical manifestations.

Gaps remain: the Big Bang cannot explain the state before the initial singularity; entropy increase cannot fully account for entropy decrease; quantum fluctuations lack a primordial driving mechanism; and cosmic cyclic hypotheses lack structural support. Meanwhile, conventional theories of heat death and nirvanic equilibrium are limited to partial descriptions of cosmic endpoints and fail to reveal the underlying primordial circulation.

To address these limitations, this paper departs from conventional paradigms and establishes a bar-magnet symmetric dual-cycle model centered on primordial matter-energy convergence, external circulation, and symmetric potential peaks. The model forms a complete logical framework for cosmic cycles while remaining a

theoretical hypothesis awaiting future observational and experimental verification.

2. Core Concept Definitions

2.1 Nirvanic State

The Nirvanic State is not absolute vacuum or empty stillness, but the most primitive, dispersed, relaxed, and stable primordial quantum or material state to which matter-energy returns after a full cycle. It is the end of one cosmic cycle and the foundation of the next. In this state, spacetime effects weaken, energy fluctuations are minimal, complex structures dissolve, and known physical laws gradually calm. It corresponds to the terminal convergence region of the S pole (negative pole) in the bar magnet analogy and is deeper and more primitive than quantum vacuum fluctuations.

2.2 Chaotic State

The Chaotic State is an eruptive, highly energetic, disordered initial state formed when nirvanic matter-energy is compressed unidirectionally in the inner channel and exceeds a critical threshold. It is the origin of spacetime, matter, energy, and physical laws.

After initial chaotic fluctuations, matter-energy erupts outward, accompanied by continuous entropy increase. This state corresponds to the eruptive node of the N pole (positive pole) and marks the transition from primordial stillness to cosmic evolution.

2.3 Chaos Cycle and Nirvanic Cycle

The Chaos Cycle and Nirvanic Cycle are not physical closed loops nor dual electromagnetic channels. They are two symmetric poles in the bar-magnet structure of the primordial universe, formed dynamically during matter-energy circulation:

- Chaos Cycle (N pole / positive pole): The eruptive node where compressed matter-energy breaks through the critical threshold and releases outward, initiating entropy increase.
- Nirvanic Cycle (S pole / negative pole): The terminal node where circulating matter-energy returns, calms, disperses, and restores the primordial state, enabling reconvergence.

The two poles are symmetric in potential intensity and cyclic scale, mutually constraining and forming a complete circulation system.

2.4 Morphology of the Primordial Universe

The primordial universe is structurally analogous to a bar magnet:

- The inner core is a solid unidirectional channel that only transports matter-energy from the Nirvanic Pole to the Chaos Pole, without loss, decay, or reversal.
- The outer region is a magnetic-field-like circulation space that carries all cosmic evolution, spacetime fluctuations, energy flows, and structural distortions.
- The entire structure is strictly symmetric, with two corresponding potential energy peaks: the Heat-Death Point at the positive pole and the Nirvana Point at the negative pole.

3. Core Operational Rules

3.1 Overall Symmetric Circulation Rules

The universe follows a closed, unidirectional, symmetric cycle analogous to magnetic field circulation:

1. Nirvanic Convergence: Matter-energy returns to the Nirvanic Pole, disperses, calms, and forms the primordial nirvanic state.
2. Inner Unidirectional Compression: Primordial matter enters the inner channel and is continuously compressed toward the Chaos Pole.
3. Chaotic Eruption: Upon exceeding the critical threshold, matter-energy erupts outward with initial fluctuations.
4. Entropy Increase and the Heat-Death Peak: Matter-energy expands along the outer circulation, entropy rises, and potential energy increases until reaching the Heat-Death Point, the peak of outward evolution.
5. Return and Descent: From the Heat-Death Point, matter-energy gradually recedes, entropy decreases, and structures simplify toward the Nirvanic Pole.
6. Nirvana Peak and Internal Collapse: Upon reaching the Nirvana Point, the symmetric counterpart of the Heat-Death Point, matter-energy no longer drifts but collapses inward, reconverges into the nirvanic state, and completes one full cycle.

The observable universe is currently in the entropy-increasing expansion phase between chaotic eruption and the Heat-Death Point, and has not yet entered the entropy-decreasing return phase.

3.2 Symmetry and Equilibrium Rules

The Chaos Pole and Nirvanic Pole maintain strict dynamic equilibrium:

- Total erupted energy equals total converged energy.
- Potential peaks at the Heat-Death Point and Nirvana Point are equivalent.
- No energy surplus or loss occurs.

This symmetry prevents infinite expansion or permanent stillbirth, guaranteeing eternal stable circulation.

3.3 Polarity and Unidirectionality Rules

The functions of the two poles are fixed and irreversible:

- The Chaos Pole only erupts outward.
- The Nirvanic Pole only converges inward.
- The inner channel only transports matter from the Nirvanic Pole to the Chaos Pole.

No reversal or interchange of poles is permitted.

3.4 Intervenability of Fundamental Laws

Fundamental cosmic structures, thresholds, peak positions, and circulation rhythms are not absolutely unchangeable.

Although intervention is far beyond current human capacity, theoretical possibility remains under sufficiently advanced civilizational or cosmic conditions. The model does not treat natural laws as eternal dogma, but as high-stability structural constraints.

3.5 Dimensional Coverage

The bar-magnet model encompasses all known and unknown dimensions, scales, and universes. Differences between dimensions reflect only positions and phases along the outer circulation; all obey the same fundamental symmetric rules.

3.6 Indirect Retardation of Cosmic Evolution

Given current limitations, direct anchoring, modification, or halting of the cosmic cycle is impossible.

However, weak, indirect retardation of the entropy increase rate may be achieved through regulating civilizational development, energy consumption patterns, and large-scale cosmic disturbance. This can slightly extend the stable evolutionary period but cannot reverse or fundamentally alter the cycle.

4. Consistency with Existing Scientific Theories

4.1 Consistency with Thermodynamic Entropy Laws

The outward expansion phase corresponds to entropy increase, while the return phase corresponds to entropy decrease. The model unifies entropy increase and decrease without contradicting the second law of thermodynamics, instead completing its cosmic-scale application.

4.2 Consistency with Quantum Fluctuation Theory

Primitive fluctuations in the Nirvanic State correspond to vacuum fluctuations in quantum field theory. The model provides a primordial physical origin for such fluctuations without negating quantum field theory.

4.3 Consistency with Cosmic Cyclic and Oscillatory Models

The model provides a concrete physical structure and energy cycle for cosmic cyclic cosmology, resolving long-standing problems of dynamic mechanism and structural closure.

4.4 Consistency with Magnetic Field Symmetry

The circulation path, unidirectional inner channel, and symmetric poles closely mirror classical magnetostatics, providing an intuitive and physically consistent analogy.

4.5 Integration of Heat-Death and Nirvanic Theories

Heat death is reinterpreted as the positive potential peak, and nirvanic equilibrium as the negative potential peak. Both are stages within a larger cycle, not ultimate endpoints. The model preserves core observational conclusions while overcoming their one-sidedness.

5. Limitations of the Model

1. This is a purely theoretical hypothesis; direct experimental or observational verification is currently beyond human capability.

2. Key parameters including critical compression thresholds, peak potential values, and quantitative intervention effects cannot be precisely calculated.

3. The model focuses on primordial structure and does not yet address detailed astrophysical processes, abiogenesis, or fundamental constant origins.

4. Indirect civilizational regulation remains theoretical and cannot be implemented or tested.

5. Future breakthroughs in physics may require revisions or expansions of the model.

6. Conclusion

The Dual-Cycle Chaos and Nirvanic Equilibrium Model establishes a strictly symmetric bar-magnet-like framework for the primordial universe, defining the Chaos Pole and Nirvanic Pole as eruptive and convergent nodes, and the Heat-Death Point and Nirvana Point as symmetric potential peaks.

The model explains a complete cosmic cycle:

nirvanic convergence → inner compression → chaotic eruption → entropy increase → heat-death peak → return descent → nirvana peak → internal collapse → re-convergence.

It is logically closed, self-consistent, and compatible with existing physics. It does not refute mainstream theories, but integrates, supplements, and structurally completes them. The model acknowledges the potential long-term intervenability of cosmic laws while affirming current practical impossibility.

As a theoretical hypothesis in fundamental cosmology, this model provides a rigorous, innovative, and translatable framework for future exploration of the origin, cycle, and fate of the universe.

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HAO Ziqian

Independent Researcher

ORCID: https://orcid.org/0009-0002-1835-1362

Contact Email:chaos_endless@163.com