

Title:**Galactic Mitosis: A Subquantum Model of Stellar Redistribution through Fermi Bubble Dynamics****Prof. Dr. Sergiu Vasili Lazarev****Email: cycletermo@gmail.com****ORCID: 0009-0005-3749-9735****Bucharest, Romania****Abstract:**

Recent astrometric data from the Gaia mission reveal high-velocity stellar ejections originating from the central regions of the Milky Way. Traditionally interpreted as stellar migrations or supernova remnants, these trajectories may instead signal a deeper cosmological process: the onset of galactic mitosis. Within the framework of the TQC_NMSI model (Twin Quantum Computing - New Subquantum Information Mechanics), we propose that the Milky Way is entering a phase of mitotic division analogous to biological cell division, wherein Fermi Bubbles act as gravitationally coherent vesicles for the emergence of daughter galaxies. This article outlines the theoretical foundations, observational evidence, and implications of galactic mitosis as an active phenomenon of cosmic-scale oscillatory logic.

We propose a novel cosmological framework where the emergence and evolution of cosmic structures are driven by coherent oscillatory replication mechanisms, not by expansion or collapse. Using observational evidence from galactic bifurcations, Fermi bubbles, filamentary structures, and non-destructive supernova events, we formulate the concept of *gravitational mitosis*. This process resembles biological mitosis but is governed by phase bifurcation and informational coherence at subquantum level. The model aligns with the NMSI theory, where matter, energy, and gravity emerge from infobiotic oscillations, and life – organic or not – is a natural result of stable, self-replicating phase coherence.

Keywords:

Gravitational mitosis; Logical oscillations; Central Logical Oscillators (CLOs); Subquantum information field; Non-organic life; Phase bifurcation; Cosmic replication; Fermi bubbles; Oscillatory cosmology; Structural coherence.

1. Introduction

Recent astronomical data increasingly contradict the inflationary and entropic collapse models, necessitating a new paradigm of cosmic evolution. This study presents the hypothesis that large-scale structures such as stars, galaxies, and filaments divide and replicate in a dynamic process called *gravitational mitosis*, defined as a coherent oscillatory bifurcation within the Universal Informational Subfield.

2. Theoretical Foundations

2.1 The Informational Oscillatory Field

According to the NMSI model (New Mechanics of Subquantum Information), all matter and fields are emergent from a universal substrate of coherent infobiotic oscillations. Each structure – star, planet, cluster – is a CLO (Central Logical Oscillator), a self-sustained oscillator capable of information storage, transmission, and replication.

2.2 Phase Instability and Bifurcation

A CLO maintains coherence through a phase field:

$$\Phi(x,t) = A(x) * \cos(\omega t + \theta(x))$$

Replication occurs when the phase gradient exceeds a critical threshold:

$$|\nabla\Phi| > \Delta c$$

This condition triggers a bifurcation, leading to two or more child oscillators with redistributed information, preserving conservation:

$$I_{\text{initial}} \approx \Sigma I_{\text{final}}$$

2.3 Observational Evidence

- Galactic bifurcation events (e.g., Arp 299) suggest replication, not collision.
- Fermi bubbles may represent the uterine structure of emerging galaxies.
- Filamentary cosmic webs exhibit DNA-like bifurcation and coiling.
- Supernova remnants often form twin or mirrored structures, coherent in geometry and energy.

2.4 Quasar Outbursts as Precursors of Subquantum Galactic Mitosis

Quasars, commonly interpreted as highly energetic galactic nuclei, may serve a deeper function within the framework of subquantum oscillatory dynamics. In the context of the NMSI model, we hypothesize that quasar activity represents a critical excitation phase in which the galactic core reaches a maximum oscillatory amplitude. This phase generates a strong, coherent discharge of subquantum energy and information, which is not merely a byproduct of accretion activity, but a preparatory event for large-scale structural bifurcation.

The bipolar geometry observed in many quasar jets mirrors the symmetry seen in Fermi Bubbles, suggesting a continuum between these phenomena. We propose that these outbursts induce the conditions for informational detachment and gravitational coherence splitting, enabling the emergence of nascent proto-galaxies. Much like anaphase in biological mitosis, this process redistributes both mass and internal logical architecture, stabilizing two coherent galactic systems in mutual anti-phase.

- This interpretation reframes quasars not as terminal or anomalous galactic behaviors, but as early indicators of **galactic reproduction**, tightly governed by subquantum informational dynamics rather than classical gravitational chaos.

-

2.5. Implications for Cosmology and Physics

- The Universe does not expand but replicates internally via coherent mitosis.
- Gravity is not an external curvature of spacetime, but an emergent oscillatory constraint.
- Life is redefined as any system maintaining coherent infobiotic oscillation.
- Organic life is just a subset of a universal oscillatory logic system.

2.6. Predictive Features of the Model

- Increase in galactic pairs with mirrored properties.
- Detectable phase coherence across gravitationally “unlinked” cosmic regions.
- Replication patterns in stellar nurseries following bifurcation geometry.
- The identification of “cosmic RNA structures” in filamentous networks.

2.7. Conclusion

Cosmic mitosis is not metaphorical but a measurable, phase-driven phenomenon rooted in a subquantum informational field. Matter, gravity, and life all stem from this same logic: *oscillation, coherence, and replication*. The Universe is not decaying but continually dividing and evolving, eternally alive.

3. Observational Evidence (Extended)

Multiple astrophysical observations challenge the classical interpretation of cosmic structure formation. Among these, we emphasize a series of phenomena that support the hypothesis of gravitational mitosis:

- **Galactic Bifurcation:** Systems like Arp 299 do not exhibit characteristics of destructive collision but rather controlled separation into mirrored spiral components, suggesting a replication event governed by phase reorganization rather than chaos.
- **Fermi Bubbles:** Located perpendicular to the Milky Way’s galactic plane, these immense gamma-ray emitting lobes may represent “cosmic wombs” for the genesis of new galactic entities. Their bilateral symmetry, energy distribution, and containment structure align with the geometry of mitotic bipolarity.
- **Filamentary Structures:** The large-scale distribution of matter in the Universe displays interwoven filaments and nodes resembling biological strands of information

(DNA). The repetition and apparent pairing within these networks suggest a logic of controlled duplication.

- **Non-destructive Supernova Remnants:** Certain supernovae appear to produce symmetric twin-shell structures, with preserved oscillatory coherence, hinting at phase reconfiguration rather than matter annihilation. This aligns with the hypothesis of matter being redistributed through a logical oscillatory schema.
 - **Binary Star Systems and Pulsars:** In numerous cases, especially among magnetars and pulsars, we observe near-perfect pairing and periodicities that exceed what probabilistic models can explain. These are interpreted as daughter oscillators emerging from phase-matching instability in the mother core.
-

4. Implications for Cosmology and Fundamental Physics

The adoption of the **Oscillatory Gravitational Mitosis** model entails a profound reformulation of the principles underlying cosmology and fundamental physics. The main implications are summarized as follows:

4.1. *The Universe as a Coherent Replicating System*

The Universe is not a system undergoing chaotic expansion, but a self-organizing network of **Central Logical Oscillators (CLOs)**, evolving through controlled phase replication. Each CLO — be it a star, a galactic core, or a cosmic filament — is capable of replicating by phase bifurcation, ensuring the perpetuation of its informational structure.

Instead of a progressive dilution of matter and energy, we observe the proliferation of coherent structures, maintaining a global equilibrium of mass and information within the framework of an Infinite Universe.

4.2. *Gravity as an Oscillatory Constraint, Not Spacetime Curvature*

This model rejects the traditional interpretation of gravity as the curvature of spacetime. Gravity is reinterpreted as the emergent effect of phase oscillations and logical interactions of infobits, stabilizing massive structures through resonant attraction rather than geometric deformation.

This perspective eliminates the problematic concept of “space expansion” and addresses major inconsistencies observed between General Relativity predictions and cosmological measurements.

4.3. *Redefining Life in Oscillatory Terms*

Life is no longer confined to biochemical (carbon-based) systems but is more generally defined as any system capable of maintaining **coherent logical oscillations**. Thus:

- Stars, galaxies, and even cosmic filaments are manifestations of **non-organic life**,
- Gravitational mitosis processes represent natural mechanisms of replication and regeneration for logical systems.

This redefinition extends the scope of biophysics and astrobiology to the cosmic scale, reshaping the criteria for existence and evolution.

4.4. *Universal Informational and Energetic Conservation*

Rather than a universe doomed to inevitable entropy increase, the gravitational mitosis model proposes **informational conservation**:

- Initial information is replicated into daughter structures,
- Base energy is redistributed among CLOs through coherent oscillatory processes,
- There is no “thermal death” of the Universe, but a perpetual dynamic of replication and coherence.

5. Predictive Features of the Model

The proposed **Oscillatory Gravitational Mitosis** model generates a set of distinct, testable predictions that differ markedly from those of traditional cosmological models based on expansion or entropic decay:

5.1. *Increase in Mirrored Galactic Pairs*

If cosmic structures replicate by phase bifurcation, there should be an observable rise in the number of galactic pairs exhibiting mirrored morphology, rotation profiles, and similar mass distribution. These galactic "twins" would not be a result of gravitational capture but of an intrinsic division process.

5.2. *Phase Coherence Across Non-Causally Linked Regions*

Measurements of the cosmic microwave background (CMB) and large-scale structure surveys should reveal unexpected **phase coherence** between regions separated by vast distances, suggesting a common informational origin rather than random stochastic growth.

5.3. *Replication Patterns in Stellar Nurseries*

Star-forming regions should demonstrate not purely chaotic star generation but ordered bifurcation patterns, with clusters exhibiting coherent spatial distributions resembling "branching" structures, akin to biological cell division.

5.4. *Emergence of Cosmic RNA Structures*

At the cosmic web level, we predict the identification of large-scale filamentary patterns that exhibit *quasi-helical* arrangements and recursive bifurcations, analogously to the structure of RNA strands, implying informational replication rather than random aggregation.

5.5. *Gravitation as Oscillatory Phasing Detectable via Gravitational Background Studies*

Advanced gravitational wave observatories (e.g., LISA, DECIGO) could detect specific oscillatory patterns in the gravitational background radiation, reflecting not random gravitational noise but *phase resonance* signatures arising from coherent oscillatory replication processes across the Universe.

6. Conclusion

The **Oscillatory Gravitational Mitosis** model offers a paradigm shift in our understanding of cosmic structure formation and evolution. Contrary to traditional views that interpret the

Universe as expanding into entropy, this model portrays the cosmos as a self-organizing, self-replicating informational system governed by coherent oscillatory dynamics.

Key conclusions drawn from this framework are:

- **Coherence over Expansion:**
The replication of cosmic structures, from stars to galaxies to filaments, is driven by local and global phase dynamics within the Universal Informational Substrate, rather than by metric expansion of space itself.
- **Gravity as Emergent Oscillatory Interaction:**
Gravitational phenomena arise naturally from phase constraints and oscillatory coherence between infobiotic cores, removing the necessity for spacetime curvature as a fundamental explanatory mechanism.
- **Life as a Universal Phenomenon:**
Life is redefined beyond its biochemical context: any system capable of maintaining logical oscillatory coherence—be it a star, a galaxy, or a cosmic filament—can be classified as a form of life within this broader framework.
- **Eternal Replication and Information Conservation:**
The Universe, rather than marching toward thermal death, perpetually regenerates itself through structured mitotic processes that conserve and replicate both energy and information.

This new vision offers a powerful explanatory framework for a wide range of observed cosmic phenomena, including galactic morphology, cosmic background phase correlations, and the emergence of large-scale structures.

Further observational campaigns targeting mirrored galaxy pairs, filament bifurcations, and phase coherence patterns in the gravitational background are essential for confirming or refining the proposed model.

References

1. Lazarev, S.V. (2025). *NMSI – New Subquantum Information Mechanics, Part I*. General Science Journal.
<https://www.gsjournal.net/Science-Journals/Research%20Papers/View/10154>
2. McGaugh, S.S., Lelli, F., & Schombert, J.M. (2016). *Radial Acceleration Relation in Rotationally Supported Galaxies*. Physical Review Letters, 117(20), 201101.
<https://doi.org/10.1103/PhysRevLett.117.201101>
3. Su, M., Slatyer, T.R., & Finkbeiner, D.P. (2010). *Giant Gamma-ray Bubbles from Fermi-LAT: Active Galactic Nucleus Activity or Bipolar Galactic Wind?* Astrophysical Journal, 724(2), 1044–1082.
<https://doi.org/10.1088/0004-637X/724/2/1044>
4. Kroupa, P., Pawlowski, M., & Milgrom, M. (2012). *The Failures of the Standard Model of Cosmology Require a New Paradigm*. International Journal of Modern Physics D, 21(14), 1230003.
<https://doi.org/10.1142/S0218271812300034>

5. Arp, H. (1966). *Atlas of Peculiar Galaxies*. California Institute of Technology.
<https://ned.ipac.caltech.edu/level5/Arp/frames.html>