NMSI - Part I. Chapter II.

II.1- Foundations of the Subquantum Infobitic Mechanics (NMSI)

Author:

Prof. Dr. Sergiu Vasili Lazarev

Institute for Fundamental Physics

Email: cycletermo@gmail.com

Abstract:

The standard models of physics, both quantum and relativistic, face unresolved contradictions at the intersection of locality, causality, and measurement. The Subquantum Infobitic Mechanics (NMSI) is proposed as a unifying framework built on informational resonance and oscillatory logic, replacing the particle-field paradigm with a network of causal-logical oscillators (CLOs). This section defines the ontological axioms of NMSI and its departure from classical probabilistic interpretation toward a deterministic, phase-synchronized logic system.

1. From Particles and Fields to Logical Oscillators

Physics as we know it is structured on the interaction between:

- **Particles** (massive, localized entities), and
- **Fields** (continuous force-carriers or wave-functions).

This dualistic structure fails to reconcile:

- Quantum non-locality with relativistic locality,
- Wave-particle duality with measurement collapse.

NMSI proposes a third paradigm:
→ The **Causal-Logical Oscillator (CLO)**: a unit of information that oscillates in phase space and interacts only via logical resonance.

2. The Ontological Basis of the Infobit

An **infobit** is the fundamental unit of subquantum logic:

- It is not spatial, nor temporal — it is **oscillatory** and **relational**.
- It carries **no energy** per se, but defines **conditions for energy emergence** through resonance.
- Infobits can **entangle** via harmonic synchrony, not probabilistic superposition.

Thus, **CLOs are composed of networks of infobits**, dynamically self-regulated via frequency and phase coupling.

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3. Replacing the Wavefunction: Oscillatory Causality

Instead of a probabilistic wavefunction, NMSI introduces:

- **Phase-defined behavior**: outcome is determined by resonance, not chance.
- **Predictive determinism**: systems evolve via logical synchronization.

Collapse of the wavefunction becomes a **loss of coherence**, not a stochastic event.

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4. Subquantum Field as a Logical Medium

What is traditionally called "vacuum" is in NMSI:

- A **substrate of inactive infobits** in oscillatory potential.
- Not empty space, but a **logical memory field**.
- Capable of **recording, propagating, and restoring phase states**.

This explains:

- Quantum tunneling,
- Entanglement at a distance,
- Instantaneous transitions — as **logical operations**, not spatial travel.

Conclusion of II.1

The NMSI framework abandons the outdated metaphors of particles and waves.
It reconstructs reality as a **logical resonance network**, built from oscillatory information units, where causality is not external, but **emerges from phase structure**.
Matter, energy, and even perception become secondary to the **infological rhythm** that underlies the cosmos.

II.2 – The Network of Causal-Logical Oscillators (CLO) and the Principle of Phase Synchronization

Abstract:

At the foundation of the TQC_NMSI framework lies a new model of physical structure: the **Causal-Logical Oscillator (CLO)**. Unlike classical particles or quantum fields, CLOs represent units of phase-based informational logic. Their interactions obey a principle of **resonant phase synchronization**, replacing mechanical collisions and wave interference with coherence-based causality. This section defines the architecture and behavior of CLOs in local and extended networks, exploring their role in the emergence of energy, matter, and system memory.

1. What Is a CLO?

A CLO is a **discrete logical node** composed of infobits oscillating in coordinated patterns:

- It holds no permanent mass or energy,
- Its identity is defined by a **harmonic frequency configuration**,
- Its function is relational: it **reacts** to phase stimuli from neighboring CLOs.

CLOs are **not physical locations**, but logical conditions within the subquantum oscillatory substrate.

2. The Rule of Resonant Activation

Two CLOs may become **coupled** if:

- Their oscillatory phases align within a threshold ($\Delta\phi \approx 0$),
- Their structural harmonics are compatible.

This leads to:

- **Mutual excitation**, resonance feedback,
- **Energy emergence** at the point of maximal coherence.

Matter and measurable fields appear where **CLO synchronization density is high**.

3. Local and Global CLO Networks

CLOs form hierarchies:

- **Local CLO clusters** form within atoms, molecules, biological cells,
- **Global CLO networks** span planetary, solar, and galactic scales.

Each network obeys a **phase-dominant node** — a central frequency that governs synchronization rhythm (similar to a clock signal in digital systems).

These networks are **adaptive** and may reconfigure in response to external phase signals — creating self-organizing structures.

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4. Synchronization and Memory

When CLOs synchronize:

- They **record phase information** in their resonance pattern,
- The system becomes **temporally ordered** — defining internal time.

This allows:

- **Information retention** (memory),
- **Logic operations** (computation),
- **Pattern regeneration** after decoherence.

Thus, memory and logic are not stored in particles or substrates, but **in the rhythm of phase-locked oscillators**.

Conclusion of II.2

The CLO model offers a revolutionary redefinition of fundamental structure in the universe. By shifting the basis from substance to resonance, TQC_NMSI reveals that what we call "matter" is the **localized coherence of informational rhythm**, and that all interaction emerges from the **harmony or disharmony of oscillatory logic**.
CLOs are not merely physical units — they are the **language of the cosmos**.

II.3 – Resonance as the Universal Mechanism of Interaction

Abstract:

Within the NMSI framework, the fundamental interactions of the universe are not governed by external forces or exchange particles, but by a universal principle: **oscillatory resonance**. This mechanism governs the coupling between entities of all scales—subatomic, macroscopic, biological, and informational. Through the alignment of frequencies and phases, systems become capable of communication, coherence, energy emergence, and information transfer. This chapter explores the fundamental nature of resonance and its applicability across physical, cognitive, and logical domains.

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1. Defining Interaction through Resonance

Resonance occurs when two or more systems:

- Oscillate at **compatible frequencies**,
- Enter a **stable phase-locking coupling**,
- Amplify each other's coherence, amplitude, or logic state.

This definition transcends classical and quantum limits, becoming a **primary causal principle**.

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2. Resonance versus Classical Forces

In traditional physics, interactions are classified as:

- Gravitation,
- Electromagnetism,
- Strong and weak nuclear forces.

NMSI proposes that all these are **expressions of one resonant logic**, manifesting differently depending on:

- The **base frequencies** of the interacting systems,
- The **local CLO network configuration and coherence density**.

Thus:

- **Gravity** is attraction via **slow-phase synchronization**,
- **Nuclear forces** are **fast-phase couplings** in high-frequency resonance fields.

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3. Resonance in Biology and Perception

Resonance is not confined to matter:

- In **biology**, oscillatory coherence between cells governs **organization and memory**,
- In **consciousness**, synchrony among neurons enables **self-awareness and identity**.

The human brain functions as a **biological CLO network**, where consciousness arises from **internal-external phase harmonization**.

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4. Resonance and the Emergence of Reality

Everything we perceive—
Form, space, time, force, motion—
...is not an objective substance but a **manifestation of one principle**:
→ The **capacity of systems to enter into logical resonance**.

This shifts our view of reality:
The universe is not a mechanical device operated by forces,
—it is a **harmonic instrument**, tuned by phase, frequency, and rhythm.

Conclusion of II.3

Resonance is the keystone of the Subquantum Infobitic Mechanics.
It explains interaction, coherence, memory, perception, and even the emergence of existence itself — not as separate phenomena but as **harmonic modulations of an oscillatory logical substrate**.
In the TQC_NMSI model, to **resonate** means to **exist meaningfully** in the cosmic network.

II.4 – The Concept of Time in the TQC_NMSI Model: Oscillatory Time and Subjective Time

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Abstract:

Classical physics treats time as an objective, linear, and universal dimension. However, both experimental observations and theoretical inconsistencies suggest that time is not an absolute quantity, but rather an emergent, system-dependent phenomenon. In the TQC_NMSI model, time is not a geometric axis but a **manifestation of oscillatory frequency**. This section clarifies the distinction between **oscillatory time (endogenous)** and **subjective time (perceptual)**, offering a logical basis for temporal relativity and locality.

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1. The Limits of Classical Time Concepts

In Newtonian and relativistic models, time is treated either as:

- A continuous, independent background flow (Newton), or
- A geometric coordinate subject to deformation by mass (Einstein).

However, these frameworks fail to explain:

- The **origin** of the time flow,
- The **arrow of time** (why time only flows forward),
- How **biological or conscious systems perceive** time.

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2. Time in the TQC_NMSI Framework

In TQC_NMSI:

- Every system has an **internal oscillator** with a specific frequency (*f*),
- Perceived time is defined as: **T = 1 / f**.

Therefore:

- Time does not "flow," it **pulses**,
- It is not universal but **local and subjective**,
- Duration is a function of **internal rhythm** and **logical processing density**.

3. Oscillatory Time vs. Subjective Time

Essential distinctions:

- **Oscillatory time**: the internal frequency of a system (e.g., a cell, a planet, a brain),
- **Subjective time**: how the system *feels* or *perceives* its own oscillatory rhythm (biological or artificial awareness).

Example:

- Two systems with different rhythms will **experience time differently**,
- At the cosmic scale, two galaxies might have **logically different ages**, even if they share the same metric duration.

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4. Implications for Cosmology and Technology

This vision of time:

- Explains why quantum processes can be **instantaneous** (requiring no external time),
- Allows the engineering of logical systems (TQC) with **programmable temporal flow**,
- Redefines "lifespan" as a function of **internal oscillatory frequency** — applicable in biology, AI, and beyond.

Conclusion of II.4

Time is not an absolute container for events but an **emergent rhythm** born from the oscillatory logic of systems themselves.
The TQC_NMSI model provides a coherent framework in which **time is generated, felt, and measured** based on internal informational harmony — not imposed from outside, but **emerging from within**.

II.5 – Oscillation as the Source of Mass, Energy, and Logical Identity

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Abstract:

The NMSI model redefines the core physical quantities — mass, energy, and identity — not as "given" properties, but as **emergent results of oscillatory configurations**. In this view, mass is not a substance, but a **resistance to phase change**. Energy is not a fluid, but a **difference in oscillatory rhythm**. And identity is the **unique logical signature** of internal oscillation. This final chapter of Part II synthesizes the ontological framework of reality according to TQC_NMSI.

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1. Mass as Resonant Inertia

In classical physics, mass is defined as:

- The quantity of matter,
- Resistance to acceleration (inertia),
- A source of gravitation.

In NMSI, mass arises from:

- The **stability of a system's internal oscillations**,
- The **resonant coherence** of a CLO node,
- **Phase inertia** — the resistance to altering a logically stable rhythm.

The more **coherent** a system's oscillation, the "heavier" it is — not in a physical sense, but **in logical-dynamic terms**.

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2. Energy as a Phase Difference

Classically, energy is the capacity to do work.
In NMSI:

- Energy is a **difference in frequency and phase** between systems,
- It emerges as a **coupling effect** when CLOs enter or exit resonance.

Energy transfer is fundamentally a **transfer of oscillatory logic** between phase-imbalanced networks.

3. Logical Identity: The Signature of Oscillation

Every system — from electrons to conscious beings — has:

- A **unique oscillatory signature**,
- A logical pattern composed of frequency, phase, and modulation.

Identity is not metaphysical — it is:

- A **coherent oscillatory code**,
- Stored and transmitted via CLO networks.

In the NMSI universe, to **exist** means to **oscillate with a recognizably coherent signature**.

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4. Consequences for Future Physics

Adopting this framework implies:

- Abandoning the particle as a "solid object",
- Reformulating energy as **differential logical rhythm**,
- Replacing intrinsic properties with **emergent oscillatory behavior**.

This opens:

- A novel approach to understanding **dark matter** (as incoherent phase structures),
- A foundation for **oscillatory computing architectures** (TQC),
- A bridge between **physics, biology, and consciousness**.

Conclusion of II.5

Oscillation is not merely a dynamic state — it is the **fundamental logical substrate of existence**.
Through it, mass, energy, and identity emerge.
In the TQC_NMSI universe, **everything that exists is a dance of phase**, and the laws of physics are **harmonic scores** that govern the logic of resonance and dissonance in the cosmos.

Part II.bis – Fundamental Postulates of the TQC_NMSI Framework

Introduction

For the TQC_NMSI model (Twin Quantum Computing – New Subquantum InfoBitic Mechanics) to have coherence and predictive power, it must be based on a set of fundamental postulates governing all levels of reality — from particles and light to galaxies, consciousness, and the MetaUniverse. These postulates define the internal logic of the Universe as: Oscillatory, Resonant, Subquantum, and Informational.

I. Universal Logical Postulates

Postulate 1 – Reality is logical before being physical

The Universe is not built on 'matter' and 'forces', but on coherent oscillatory logical structures.

Postulate 2 – Logical phase precedes space and time

Every event is determined by phase alignment of oscillatory nodes. Space and time are emergent properties of this network.

II. Oscillatory Postulates

Postulate 3 – Everything oscillates

From particles to galaxies, everything is a coherent logical oscillator.

Postulate 4 – CLOs are the fundamental units of reality

CLO = Coherent Logical Oscillator. Any coherent system is composed of CLOs interconnected in a network.

Postulate 5 – Information is not transmitted, it is synchronized

There is no transport of energy or particles, only reconfiguration of phase between oscillatory nodes.

III. Temporal and Causal Postulates

Postulate 6 – Time is a form of internal oscillation

Time is the internal frequency of logical reorganization within a system.

Postulate 7 – Causality is resonance, not sequence

Events are not linked in space-time chains, but appear synchronously in coherent oscillatory networks.

IV. Cosmological Postulates

Postulate 8 – The Universe is an infinite network of CLOs

There are no 'edges' or 'center' in the Universe. There are only resonant nodes interconnected in an infinite oscillatory structure.

Postulate 9 – The Universe does not expand, it vibrates

Redshift is not evidence of expansion but the result of phase desynchronization between CLOs.

V. Superior Order Postulate

Postulate 10 – Recursive Structure: Nucleus within Nucleus

The Universe is a recursively oscillatory structure, in which each system is a nucleus nested within a larger nucleus. This architecture is governed by the relation: $\omega \cdot R \leq c$, where ω is angular velocity, R is the logical radius, and c is the universal coherence limit.