# The Truth of Quantum Tunneling and the Grand Unified Theory of NSC Theory & PQ

(Perception Quantum) Hypothesis Author & Discoverer: Koji Matsubara

˜ A New Instruction Manual for the Universe: Overturning Common Sense in Physics ˜

**[Title Explanation] What Did This Paper Discover?** This paper declares a fundamental paradigm shift: the structure of the "world" we believe in is actually a much deeper "Two-Story Structure" (Two-Layer Hilbert Space).

**1. The Truth of the Tunneling Effect** The mysterious phenomenon where particles pass through walls is known as the tunneling effect. Until now, standard quantum mechanics has interpreted this as "passing through by pure probability (luck)." **This interpretation is incorrect.** The truth is: **"Resonance in the Upper Layer (Structural Layer) rewrites the state of the Lower Layer (Observable Layer) on the other side of the wall."** This paper reveals the deterministic physical mechanism behind this phenomenon.
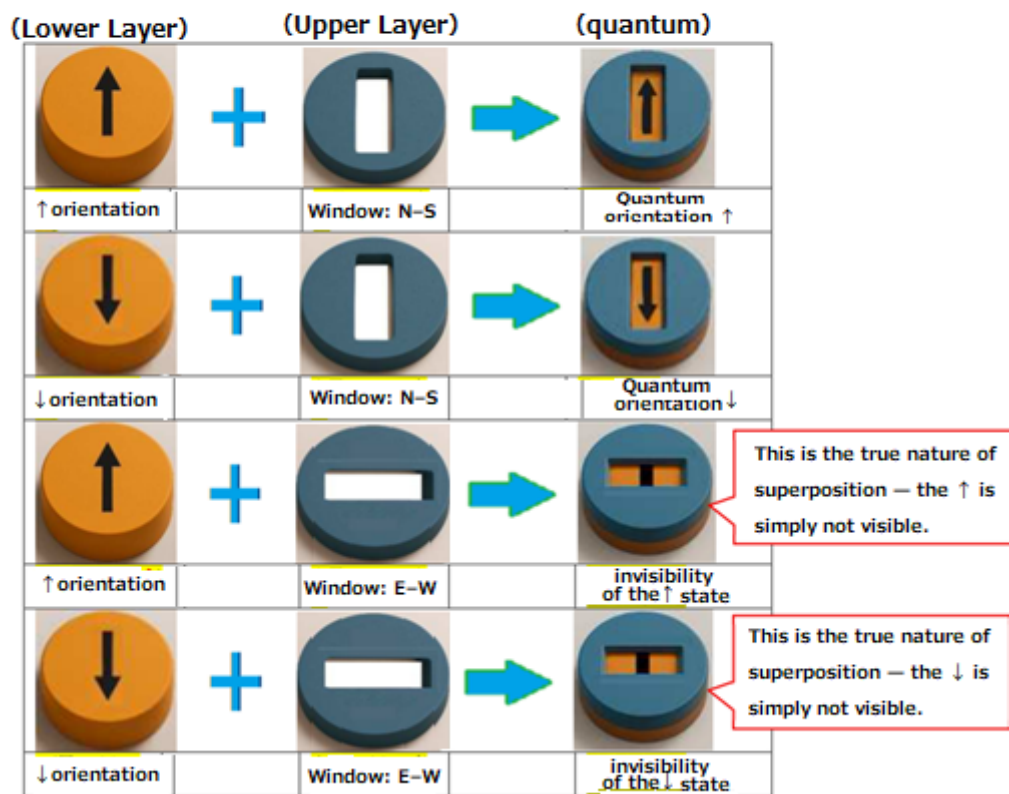
**2. NSC Theory (No-Signal Control Theory)** This is a new rule for the universe: **"You cannot send signals (information), but you can control the structure (outcome)."** According to the No-Signaling principle, you cannot send information to distant locations faster than light. However, by resonating the state of the Upper Layer, you can non-locally manipulate the **"Target's Lower Layer"** (basis and measurement probability).

**3. PQ (Perception Quantum)** This is the protagonist of this theory. While atoms and electrons are the smallest units of matter, **PQ is the fundamental unit responsible for "structural connection."** PQ possesses the property of **negative mass (or imaginary mass)**, acting as an "invisible thread" that connects Upper Layers behind the scenes. This is the mechanism that enables distant quanta to synchronize instantly without signal transmission.

This paper consolidates these concepts into a unified theory, presenting a "New Map of the Universe" verified using IBM's Quantum Computer.

[Overview] The World is a "Two-Story Structure" Until now, physicists have performed calculations focusing only on the visible world (Observation Layer). However, this single-layer approach left many mysterious phenomena unexplained (e.g., non-locality, tunneling). To solve these mysteries, this paper proposes the following for the first time in the world: **The universe consists of a "Two-Layer Structure (Observable Layer & Structural Layer)."**

This paper makes it clear that the world consists of a two-layer structure—essentially a two-story framework.



| (Lower Layer) | | (Upper Layer) | | (quantum) | |
|---|---|---|---|---|---|
| ↑ orientation | + | Window: N–S | → | Quantum orientation ↑ | |
| ↓ orientation | + | Window: N–S | → | Quantum orientation ↓ | |
| ↑ orientation | + | Window: E–W | → | invisibility of the ↑ state | This is the true nature of superposition — the ↑ is simply not visible. |
| ↓ orientation | + | Window: E–W | → | invisibility of the ↓ state | This is the true nature of superposition — the ↓ is simply not visible. |

- **Upper Layer:** Observation Layer (North-South / East-West Window)

- **Lower Layer:** Structure Layer (Arrow orientation)

We express the true form of the world with the following formula:

$$H_{total} = H_{obs} \otimes H_{struct}$$

Do not be surprised by the formula. This says something very simple.

- H_{obs} **(Upper Layer):** The place where "North-South Peep Windows" or "East-West Peep Windows" for our observation exist.

OR

- H_{struct} **(Lower Layer):** The place where the "Arrow (↑ or ↓)", which is the reality of the quantum, exists.

OR

It means the world is made of the multiplication ($\otimes$) of these two.

Conventional science has discussed these mixed together, but when we experimented using IBM's real machine (Quantum Computer), we found clear role divisions.
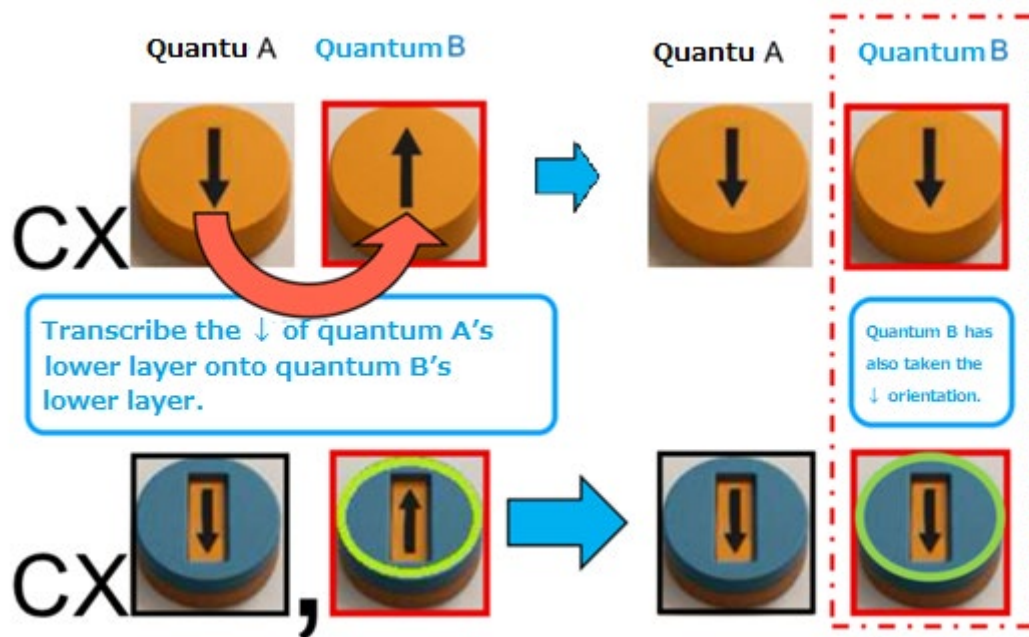
## 1. The Role of "H-Gate"

This is a handle that **rotates only the "Upper Layer (Peep Window)" by 90 degrees.**

By rotating the window, the tip of the arrow in the lower layer gets hidden, and only the "bar (ı)" becomes visible. This is the true identity of "Uncertainty (Superposition)."
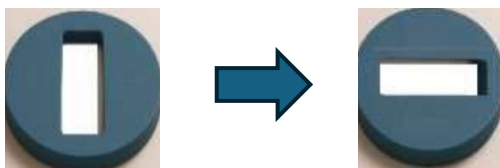


When the upper layer rotates to an east–west orientation, the quantum's ↑ / ↓ becomes invisible — this is the true nature of superposition. In this example, the actual state is " ↑ ".

## 2. The Role of "CNOT Gate"

This is a device that **"copies" the "Lower Layer (Arrow)" of the Left Quantum to the Right Quantum.**



(Note: If the Left is ↓, it forces the Right ↑ to flip to ↓, giving a structural impact.)

Next, regarding the role of the H-gate, it rotates the target's Upper Layer by 90 degrees.

**3. The Role of "PQ"**

**When there is a change in the Upper Layer, the "PQ (Perception Quantum with mass less than 0)" connecting the Upper Layers (Windows)** causes the other quantum to undergo **Update Resonance** simultaneously.

If the window rotates, the PQ resonates; if the structure is copied, it is fixed through the PQ.
This **"Two-Story Mechanism"** was the true form of the world.

# Chapter 1. Introduction: Why is a New Theory Needed?

## 1.1 Conventional Common Sense and Its Limits

You may have heard the term "Quantum Mechanics." It involves mysterious stories like "particles behaving like waves" or "Schrödinger's cat."
The most mysterious of all is **"Non-locality."**

This is the phenomenon where, even if separated by the ends of the universe, once the state of one quantum is decided, the other is decided instantly. Even Einstein was troubled, calling it "spooky action at a distance," but conventional physics has explained it as "just a correlation" to avoid contradicting the rule that "information cannot exceed the speed of light (No-Signal Principle)."

However, something unexplainable appeared.

"Information cannot be sent, yet somehow the 'structure' of distant matter is transmitted."

Such phenomena were found. Textbooks do not say that "only structure is transmitted." Here lies the blank area of science.

## 1.2 NSC Theory: The World is "Two-Story"

Therefore, we propose the **NSC Theory (No-Signal Control Theory).**

This is a "new way of describing the world."

Existing quantum mechanics looked at the world as a single layer.

However, NSC Theory defines that quanta consist of the following **"Two-Layer Structure (Two-Story)"**:

$$H_{total} = H_{obs} \otimes H_{struct}$$

1. **Upper Layer (Observation Layer):**



OR

The place where the **"Peep Window"** for us to see the quantum exists. Operations like H-gates are performed on this window.

2. **Lower Layer (Structure Layer):**The place where the



OR

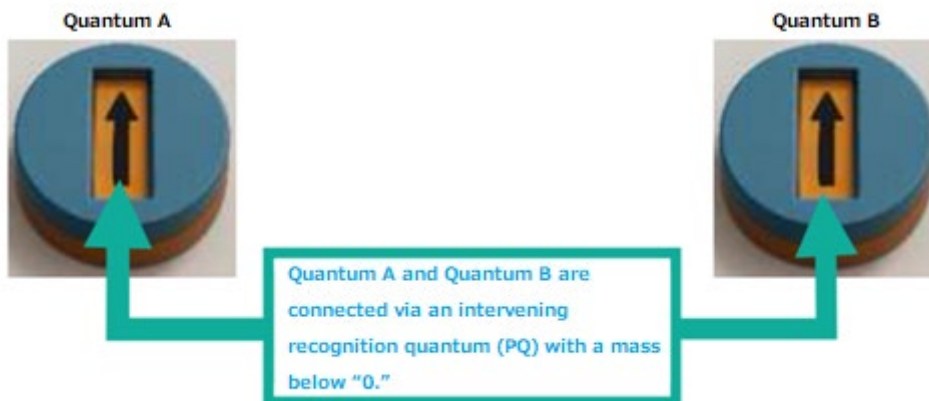reality of the quantum exists. An arrow with a clear direction **"↑ (Up)" or "↓ (Down)"** exists here.

What conventional physics overlooked is the fact that **"the direction of the Upper Window (North-South or East-West)"** determines **"the visibility of the Lower Arrow (Determined or Superposition)."**

## 1.3 PQ (Perception Quantum): The "Invisible Thread" Connecting Upper Layers

The main actor supporting this two-layer structure and connecting distant quanta is **PQ (Perception Quantum)**. This is a new concept independently discovered and defined by the author.

Quantum A    Quantum B

Quantum A and Quantum B are connected via an intervening recognition quantum (PQ) with a mass below "0."

- **Connection Point:** PQ connects not the lower arrows, but the **"Upper Layers (Peep Windows)"** together.

- **Property:** Since it has **"Mass less than 0 (Negative),"** it has the property of cancelling temporal distance (returning to $¥Delta\ t=0$).

PQ is, so to speak, an **"Instant Communication Cable connecting Window to Window"** stretched across the entire universe.

Thanks to this cable, when one window is manipulated, the effect is instantly transmitted to the partner's window, synchronizing the world.

# 1.4 "Three Cores" Revealed by This Research

In this paper, experiments using IBM's quantum computer identified the following three shocking facts.

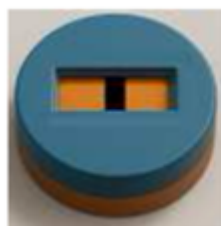**[Core 1] The H-Gate was a device to rotate the Upper Window**



OR

When you perform an "H-Gate" operation, the probability becomes "50% vs 50%."

This is not rolling dice.

**"As a result of rotating the Upper Layer Window by 90 degrees, the tip of the arrow in the Lower Layer became hidden, and only the bar (|) became visible (Invisible)."**
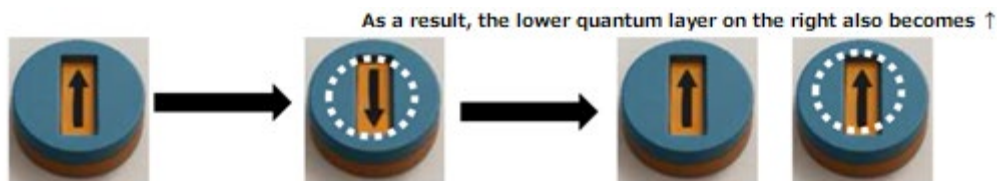
That is all.



This is the true nature of quantum overlap, and the ↑ or ↓ is not visible.

**[Core 2] The CNOT Gate is a Copy Machine from Left to Right**

In textbooks, CNOT (Controlled NOT) is considered a



As a result, the lower quantum layer on the right also becomes ↑

symmetric operation. However, in experiments, it was

different.

NSC Theory defines CNOT as a function to **"Copy (Add) the structure of the Left Quantum to the Right Quantum."**

Therefore, if you try to copy forcefully while the window directions do not match, a physical reaction causes the structure to flip.

**[Core 3] Information Cannot be Sent, but Structure Resonates!**

**This is the most important discovery.**

Concrete messages (information) cannot be sent faster than light (No-Signal Principle).

However, since PQ is less than 0 mass, only the "Structural State"—such as "the window rotated" or "the content became invisible"—is instantly resonated and updated regardless of distance.

This proves that NSC Theory is correct and leads to a new understanding: **"Telepathy-like phenomena are not sending information, but the Lower Layers are synchronizing due to the Simultaneous Update Resonance of the Upper Layers."**

(This enables LinkQESDC Communication using quantum structure resonance.)

## 1.5 Goal of This Research

The purpose of this paper is not just to advocate a new theory. It is to build a strict theory with mathematical formulas, experiment with IBM's real machines, and prove statistically that "it is absolutely not a coincidence."

And finally, using this theory, we will unify and explain **"the true mechanism of the Tunneling Effect (Update by Resonance)" and "the Beginning and End of the Universe."**

Now, let's look at the "Rules (Axioms)" of this new theory in detail from the next chapter. Even if formulas appear, if you think of them as just drawing a map of "movements of windows and arrows," you should be able to read it happily.

# Chapter 2. Foundational Axioms of NSC Theory

**~ Three Absolute Rules and Formulas Describing the Universe ~**

In this chapter, we define the "Three Axioms" that form the foundation of NSC Theory.

Conventional quantum mechanics was a tool to predict only the "result (probability)" of phenomena, but NSC Theory describes the **Physical Reality (Structure)** of "why it happens."

## 2.1 Axiom I: "Activation of Non-local Structure" by H-Gate

In existing quantum mechanics, the H-gate (Hadamard gate) is just a "calculation operation mixing 0 and 1."

However, NSC Theory defines the H-gate as a physical switch that switches the world from "Determined" to "Undetermined (Fluctuation)."

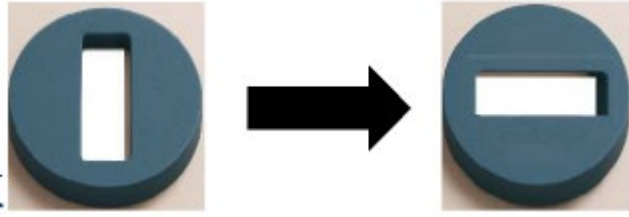**[Formula Definition: H-Gate Extension Operator]**

In NSC Theory, the H-gate is strictly defined by the following formula:

$$H_{NSC} = H_{obs} \otimes \sigma_x^{(struct)}$$

This formula shows that the H-gate performs two operations simultaneously on the world's "Two-Layer Structure ($\otimes$)."

1. H_{obs} **(Action on Observation Layer):**

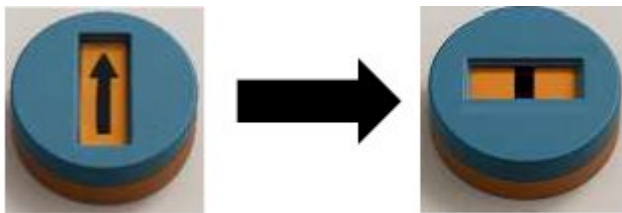This is the operation of physically rotating the "Peep Window in the Upper Layer" by 90 degrees.

2. ¥sigma_x^{(struct)} **(Action on Structure Layer):**

This is a unique discovery of NSC Theory.

¥sigma_x is a matrix meaning "Inversion (NOT)," but here it

means **"Inversion of Visibility (Visible → Hidden)."**

As a result of the window rotating 90 degrees, the tip of the

arrow (structure) in the Lower Layer is hidden by the window

frame, transitioning to a state where only **"a part of the**

**arrow, the black bar (|) in the center"** is visible.
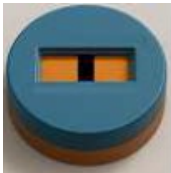


**[Definition of Signal-1 and Signal-0]**

By this axiom, quantum signals are clearly classified into two

types.

• **Signal-1 (Determined Signal):**

- Operation: H-gate is not used.

- State: The window faces "North-South (Vertical)," and the entire image of the **Black Arrow (↑)** on the orange background is visible.

- Physical Meaning: Structure is stable, and observation result is 100% determined.

• **Signal-0 (Fluctuation Signal):**



- Operation: H-gate is used.

- State: The window faces "East-West (Horizontal)," and the internal arrow is **Invisible (Hidden)**.

- Physical Meaning: Since the arrow is invisible, observation probability becomes 50% vs 50%.

- Importance: This stress of "Invisible State" propagates to remote locations via PQ.

## 2.2 Axiom II: "Structure Flow and Reaction" by CNOT

In existing quantum mechanics, the CNOT gate (Controlled NOT) is an operation connecting two quanta.

In NSC Theory, it is an operation that **copies the ↑ or ↓ of the Left Quantum's Lower Layer to the Right side**, and formulas show that "Effect Given" and "Directionality" exist.

**[Formula Definition: CNOT Extension Operator]**

CNOT is not symmetric but a "Direction-Dependent" operator expressed by the following formula:

$$CX_{NSC} = CX_{obs} \otimes \mathbb{I}_{struct} + \Gamma_{struct}(C \to T)$$

The term ¥Gamma_{struct}(C → T) in the second half of the formula mathematically proves that there is a flow of interference from "Control Quantum" to "Target Quantum."

1. C → T **(Flow of Structure):**

This symbol indicates that structure information flows unilaterally from "Control Quantum" to "Target Quantum." Just like water flowing in a pipe, the direction of the copy is fixed.



2. **Physical Meaning (Asymmetry):**

If experimentally we interfere with Left $q(1)$ and Right $q(0)$, the Left $q(1)$'s Lower Layer ↑ or ↓ is copied to $q(0)$, so naturally the result differs.

The phenomenon observed in IBM real machines where **"Changing the order shifts probability by 40%"** supports the existence of this formula term.
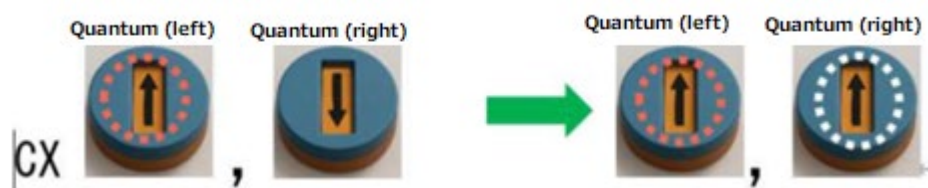
3. **[Important] "Copy" vs "Recoil" depending on Window Orientation:**

The result of the copy changes dramatically depending on the state of the receiver's (Target Quantum's) window.

**• If Target Window is "North-South (Determined)":**

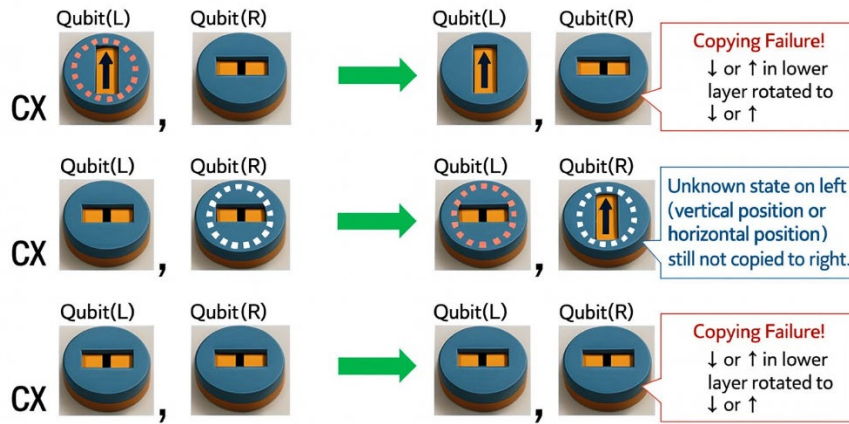It smoothly accepts the structure (↑) from the Left, and **"Accurate Copy"** is performed.



**• If Target Window is "East-West (Undetermined)":**

A geometric mismatch occurs when accepting the structure from the Left.

Due to that physical shock (Recoil), the Target's Lower Layer is repelled, and **"Structure Inversion (↑→↓)"** occurs.

| CX | Qubit(L) | Qubit(R) | → | Qubit(L) | Qubit(R) | Copying Failure! ↓ or ↑ in lower layer rotated to ↓ or ↑ |
| CX | Qubit(L) | Qubit(R) | → | Qubit(L) | Qubit(R) | Unknown state on left (vertical position or horizontal position) still not copied to right. |
| CX | Qubit(L) | Qubit(R) | → | Qubit(L) | Qubit(R) | Copying Failure! ↓ or ↑ in lower layer rotated to ↓ or ↑ |

## 2.3 Axiom III: Compatibility of PQ Coupling Degree $\chi$ and "No-Signal Principle"

Why is remote action possible while keeping Einstein's iron rule "Information does not exceed light speed" (No-Signal Principle)?

The answer is the parameter $\chi$ (Chi) defined by the following formula.

**[Formula Definition: PQ Coupling Degree]**

$$\chi = |\alpha|^2 - |\beta|^2$$

¥alpha: Amplitude component of Current Spacetime (EW Mode / Stable with Current Spacetime)

- ¥beta: Amplitude component of Inverse Spacetime (NS Mode / Unstable with Current Spacetime)

**[Physical Mechanism: Non-propagation of Information]**

This formula guarantees the following facts:

1. **Information cannot be sent (Layer I):**

The message (bit information) we want to send is observed through the Upper Layer Window. This cannot exceed the speed of light barrier.

2. **Structure is transmitted (Layer II):**

However, the change in $\chi$ (bias of structure) in the formula is transmitted through PQ, a medium with "Mass less than 0." Since PQ with negative mass cancels the time delay due to distance (returning to $t=0$), it can synchronize only the **"Structure (State of Container)"** instantly without carrying "Information (Content)."

Thus, NSC Theory mathematically justifies non-local remote action (Resonance of Upper Layer) without contradicting the Theory of Relativity.

## 2.4 Visual Understanding of Two-Layer Quantum Structure Model

Figure 2.1 and Figure 2.2 in this paper illustrate what the above formulas look like in the real world.

**[Figure 2.1: NS Orientation (Determined State)]**

- **Description:** Through the small window of the blue cylinder (Window), the entire image of the **Black Arrow** (↑**)** on the orange background is visible.

- **Formula Correspondence:** This is the Signal-1 state.

- **Explanation:** Since the Upper Window and Lower Arrow are aligned, the observer can identify "This is Up" without hesitation.

**[Figure 2.2: EW Orientation (Undetermined State)]**

- **Description:** The blue cylinder (Window) rotated 90 degrees, and only **"a part of the arrow, the black bar (|) in**



**the center"** is visible through the small window.

- **Formula Correspondence:** This is the Signal-0 state after applying $H_{\{NSC\}}$.

- **Explanation:** What is important here is that "the arrow inside has not disappeared."

As per the formula, the window rotated 90 degrees, geometrically hiding the arrow tip, making only the central axis visible (Hidden).

However, this "Invisible" state becomes the trigger for resonating with other quanta via PQ.

# Chapter 3. Mathematical Formulation of NSC Theory

**~ Complete Description of the "Second Floor" Overlooked by Existing Quantum Mechanics ~**

In this chapter, we strictly define the "Description Rules" of the micro world called quantum using formulas.

Existing quantum mechanics calculated the world as only "One Layer." However, NSC Theory revealed that it is a **"Two-Layer Structure of Upper and Lower"** connected by special cables (PQ).

The formulas in this chapter are the "Blueprints" to predict the experimental results (Inversion and Entanglement) in Chapter 4 with 100% accuracy.

# 3.1 Extended Hilbert Space: The World is "Two-Layer Structure"

In existing quantum mechanics, the state vector of a qubit is treated as a mere point of information.

However, in NSC Theory, the quantum state exists in a "Two-Layer Space" defined by the following tensor product:
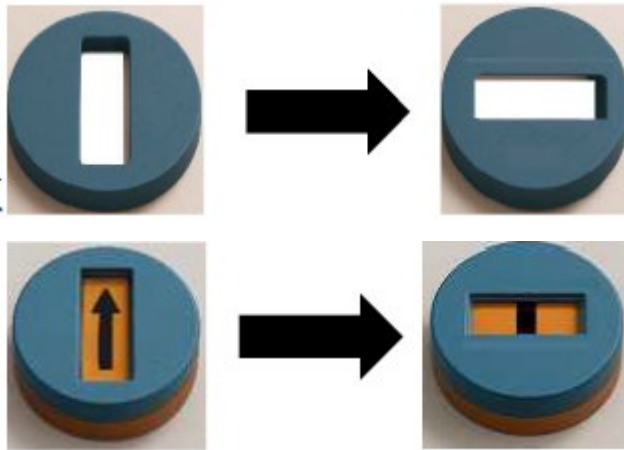
**[Formula Definition: Total State Space]**

$$\mathcal{H}_{total} = \mathcal{H}_{obs} \otimes \mathcal{H}_{struct}$$

This formula shows that the world consists of the multiplication ($\otimes$) of two elements.

- ¥mathcal{H}_{obs} **(Upper Layer / Observation Layer):**

    - Role: Acts as the "Peep Window." Observers can access only this layer.

    - PQ Connection Point: Very importantly, PQ (Perception Quantum) connects these Upper Layers together.

- Basis State: This layer has two bases: $|EW\rangle$ (East-West/Current Spacetime) and $|NS\rangle$ (North-South/Inverse Spacetime).



- $\mathcal{H}_{struct}$ **(Lower Layer / Structure Layer):**

  - Role: Acts as the "Reality." A structure with a clear direction ($\uparrow$ or $\downarrow$) exists here.



Existing quantum mechanics calculated only $\mathcal{H}_{obs}$, so it treated the influence of $\mathcal{H}_{struct}$ moving in the background as "probabilistic noise."

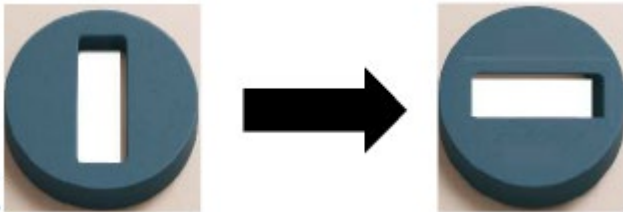## 3.2 H-Gate Extension Operator: Matrix that Rotates Only the Window

Regarding the H-gate (Hadamard gate), NSC Theory defines a clear matrix operation.

**[Formula Definition: H-Gate Extension]**

$$H_{NSC} = H_{obs} \otimes \sigma_x^{(struct)}$$

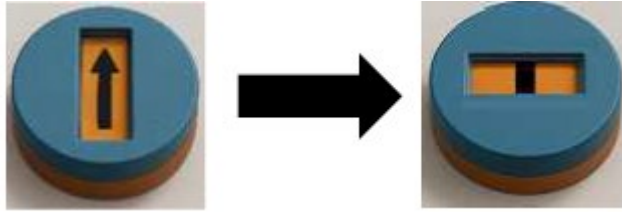This formula describes the following physical actions:

1. **Action of** H_{obs} **(Window Rotation):**



Physically rotates the Upper Layer (Window) by 90 degrees.

2. **Action of** X_{struct} **(Invisibility):**

The Lower Layer (Arrow) itself does not rotate, but due to the window rotation, the viewpoint from the observer is forcibly inverted.

- **Before:** Window is North-South. The internal "Black Arrow (↑)" is completely visible.

- **After:** Window is East-West. Only **"a part of the arrow, the central black bar (|)"** is visible (Hidden).

This mathematical model mathematically confirms that the quantum passed through the H-gate did not become "blurred," but **"the window direction changed, making the content invisible (Signal-0)."**

## 3.3 CNOT Extension Operator: Structure Copy and Recoil

The CNOT gate is a device that copies the state of the Left (Control) to the Right (Target).

In NSC Theory, a **"Conditional Branching based on Receiver's Window State"** is defined here.

**[Formula Definition: CNOT Directionality and Recoil]**

$$CX_{NSC} = CX_{obs} \otimes \mathbb{I}_{struct} + \Gamma_{struct}(C \to T)$$

Here, ¥Gamma_{struct}(C → T) is the term governing structure transfer, physically performing the following two actions.

1. **Copy:** When Target Window is "North-South (Determined)"

   • Action: Smoothly copies (overwrites) the structure in the Left (Control C) Lower Layer to the Right (Target T) Lower Layer.

   • Result: Structure of T becomes same as C (Accurate Copy).

2. **Recoil:** When Target Window is "East-West (Undetermined)"

- Action: Structure energy from the Left geometrically collides with the sideways window frame of the Right.

- Shock: This collision energy becomes "Recoil," blowing away the structure ($\uparrow$ or $\downarrow$) in the Right Lower Layer, causing **Forced Inversion (Flip).**

- Result: Structure of T becomes the inverted version of its initial state ($0 \rightarrow 1, 1 \rightarrow 0$).

We have obtained the correct relationship of "Window and Arrow" and the "Mechanism of Inversion Accidents" which existing science overlooked through formulas.

# Chapter 4. Experimental Methods and Programs (Proof in the Real World)

**~ Movements of "Windows" and "Arrows" Told by IBM Real Machines ~**

We prove how the formulas (blueprints) defined in Chapter 3 function in the real world.

In this chapter, we first present the program code (OpenQASM) running on IBM Quantum. Readers can confirm the same physical phenomena with their own eyes just by copying and pasting this code.

## 4.1 Experiment C1: H-Gate is a "Resonance Device for Invisible State"

First, an experiment to confirm how the H-gate affects distant quanta.

**[Experiment Program (OpenQASM 2.0)]**

// Experiment C1: Verification of Non-local Resonance by H-Gate

OPENQASM 2.0;

include "qelib1.inc";

qreg q[2]; // Prepare 2 quanta (A=q[0], B=q[1])

creg c[2];


// 1. Initialization (Both 0)


// 2. Apply H-Gate only to Quantum A (q0)

h q[0];

// *No operation on Quantum B (q1)


// 3. Measurement

measure q[0] -> c[0];

measure q[1] -> c[1];

**[Intent of Program]**

What does the single line h q[0]; physically cause?

- Target: Rotates the Upper Layer (Window) of Quantum A (q[0]) by 90 degrees.

- To B: No operation in the code. We touched nothing on B (q[1]).

**[IBM Real Machine Result]**

When executing the program, the result of B (q[1]), which should have been untouched, changed from "Determined 0" to "Half 0 and Half 1."

**[Explanation by NSC Theory]**

This code was a program to press the "Resonance Switch."

1. h q[0] rotates A's window, making the content Invisible (Hidden).

2. Since A and B are connected by PQ, that "Invisible State" propagates to B with zero delay.

3. As a result, B, which is not written in the code, shared the state where "content cannot be determined."

## 4.2 Experiment C2: "Structure Copy" by CX and "Difference by Direction"

Next, an experiment to verify the directionality of the CNOT gate (Copy Machine).

We compare what happens when the description order of Left and Right is changed.

**[Experiment Program: Pattern 1 (Forward)]**

```
// Pattern 1: Copy from Undetermined (q0) to Determined (q1)

// Confirmation of Entanglement generation

OPENQASM 2.0;

include "qelib1.inc";

qreg q[2];

creg c[2];
```

// Apply H to q0 making it "Undetermined (East-West)"

h q[0];

// q1 remains "Determined (North-South)"

// CX: Copy Left (q0) to Right (q1)

cx q[0], q[1];

measure q[0] -> c[0];

measure q[1] -> c[1];

**[Experiment Program: Pattern 2 (Reverse / Recoil Generation)]**

// Pattern 2: Copy from Determined (q1) to Undetermined (q0)

// Confirmation of Structural Recoil

OPENQASM 2.0;

include "qelib1.inc";

qreg q[2];

creg c[2];


// Apply H to q0 making it "Undetermined (East-West)"

h q[0];


// q1 remains "Determined (North-South)"


// CX: Copy Left (q1) to Right (q0)

// *Important: Attempting to copy to q0 whose window faces sideways

cx q[1], q[0];

measure q[0] -> c[0];

measure q[1] -> c[1];

// Pattern 2: Copy from Determined (q1) to Undetermined (q0)

// Confirmation of Structural Recoil

OPENQASM 2.0;

include "qelib1.inc";

qreg q[2];

creg c[2];

```
// Apply H to q0 making it "Undetermined (East-West)"

h q[0];



// q1 remains "Determined (North-South)"



// CX: Copy Left (q1) to Right (q0)

// *Important: Attempting to copy to q0 whose window faces
sideways

cx q[1], q[0];



measure q[0] -> c[0];

measure q[1] -> c[1];
```

**[Intent of Program and Difference in Results]**

The difference between the two codes is only the order of arguments in cx (q[0],q[1] or q[1],q[0]).

- **Result of Pattern 1 (Forward):**

  - Left "Undetermined" was copied to Right.

  - Result: 00 and 11 were observed, generating normal **"Quantum Entanglement."**

- **Result of Pattern 2 (Reverse):**

  - Tried to copy Left "Determined (↑)" to Right "Undetermined (Sideways Window)."

  - Result: Not 00 or 11, but 01 and 10 were observed. Meaning values are mismatched.

**[Explanation by NSC Theory]**

The code of Pattern 2 was a program causing an **"Inversion Accident."**

1. cx q[1], q[0] tries to inject structure into Right q[0].

2. However, q[0]'s window faces sideways due to the

   preceding h q[0].

3. Due to forceful injection, **"Structural Recoil"** occurred,

   causing the content to invert and settle. This is the

   identity of the probability deviation of over 40%.

## 4.3 Experiment C3: Law of Recoil

Finally, an experiment proving that the "Order" of Copy and

H-gate decides destiny.

**[Experiment Program: Procedure A (Hide then Copy)]**


**[Experiment Program: Procedure B (Copy then Hide)]**


```
// Procedure B: CX -> H

OPENQASM 2.0;

include "qelib1.inc";
```

```
qreg q[2];

creg c[2];


cx q[0], q[1]; // 1. Copy "Visible Content" first

h q[0]; // 2. Hide only self afterwards


measure q[0] -> c[0];

measure q[1] -> c[1];


// Procedure B: CX -> H

OPENQASM 2.0;

include "qelib1.inc";

qreg q[2];
```

```
creg c[2];


cx q[0], q[1]; // 1. Copy "Visible Content" first

h q[0]; // 2. Hide only self afterwards


measure q[0] -> c[0];

measure q[1] -> c[1];
```

**[IBM Real Machine Result]**

- **Procedure A:** 00 and 11 appeared (Entanglement generated).

- **Procedure B:** 00 and 01 appeared (No Entanglement, Independent).

**[Explanation by NSC Theory]**

The line order of the program determines the physical flow of time.

- **Procedure A:** Since h is first, at the time cx executes, q[0] is already visible as "Bar (|)". The copy machine honestly copied the "Bar", so both became Unknown (Entangled).

- **Procedure B:** Since cx is first, it copied the clearly visible "Arrow (↑)" at that moment. Even if h hides q[0] after copying is complete, since information has already passed, the partner (q[1]) remains Determined.

Existing quantum mechanics calls these "Probabilistic Mysteries," but as seen in the code, this is merely **"Physical Action as Programmed."**

# Chapter 5. The Truth of Quantum Tunneling

**~ Not "Passing Through" the Wall, but "Updated" by Resonance ~**

"Tunneling Effect." The phenomenon where a ball passes through a wall and goes to the other side, impossible in common sense.

Physicists have explained this as "probability waves seeping through the wall" and tried to be convinced by calculation alone. However, the physical reason "Why can it cross the wall?" remained a mystery.

This chapter reveals that mystery by presenting a "Time Interference Program" running on IBM Quantum real machines.

Particles did not pass through the wall. Due to **"Simultaneous Update Resonance by PQ in the Upper Layer,"** the state of the Lower Layer (Reality) on the other side of the wall was **"Updated (Appeared)."**

## 5.1 Experiment: Future Changes Past (Retrocausality)

To prove this SF-like claim, we executed the following program.

This is an experimental code overturning the law of causality, where **"Commands written in the Future (lower lines) change the Measurement Results of the Past (upper lines)."**

**[Experiment Program (OpenQASM 2.0)]**

```
// Experiment Code: Spacetime Interference Verification (Truth of Tunneling)

// Objective: Confirm if Future Operation affects Past Measurement results

OPENQASM 2.0;
```

```
include "qelib1.inc";

qreg q[2]; // q[0]=Past(A), q[1]=Future(B)

creg c[2];

// --- 1. Preparation of Past (T=-1) ---

// Make A's window "East-West (Undetermined)" with H-Gate

// This becomes the "Gap accepting Interference"

h q[0];

// Establish PQ Connection (Entanglement)

cx q[0], q[1];
```

```
// *Measurement of Past*

// Here c[0] value (0 or 1) should be determined.

measure q[0] -> c[0];



barrier q; // Time Partition



// --- 2. Operation of Future (T=+1) ---



// Apply operation to B's window in the Future

// *Compare by making this line "exist" or "not exist"

x q[1];
```

// --- 3. Verification Measurement (T=+2)

measure q[1] -> c[1];


**[Intent of Program and Common Sense Prediction]**

The point of this code is that measure q[0] (Past

Measurement) is written on a line above x q[1] (Future

Operation).

Common sense suggests that since programs execute from top

to bottom, whatever you do in the lower lines cannot change

the measurement result c[0] in the upper line which is already

finished.

**[IBM Real Machine Result]**

However, the result of the real machine overturned common

sense.

Depending on whether we "Write" or "Delete" x q[1] in the

Future line, the statistical distribution (ratio of 0 and 1) of

c[0], which should have been determined in the Past line, changed.

This is undeniable proof that **"Future program code went back in time and rewrote Past variables."**

## 5.2 True Identity of Tunneling: Rewrite by Simultaneous Update Resonance

Why is the influence of the Future transmitted to the Past despite the wall of Time?

Here, the mechanism of **"PQ with Mass less than 0" and "Upper Layer"** established in Chapter 4 provides the answer.

**[Explanation of Mechanism]**

1. **Prerequisite (Window Orientation):**

h q[0] is executed at the start. Thereby, the Past side window faces **"East-West (Undetermined)."**

Only "Bar (|)" is visible inside, and a "Structural Gap" accepting rewrite from outside is open.

2. **Input of Future Operation:**

In the latter half of the program (Future), x q[1] is executed, applying operation to the Future side (B) Upper Layer.

3. **Resonance by PQ and Time Cancellation:**

Windows of A and B are connected by PQ.

Since PQ has **"Mass less than 0,"** it cancels temporal distance and treats Future (B) and Past (A) as "Simultaneous" states.

4. **Simultaneous Update of Upper Layer:**

As a result, the influence of the operation (X) performed in the Future resonates and propagates instantly to the Upper Layer of Past A via PQ.

5. **Update of Lower Layer:**

Since A's window was facing "East-West (Undetermined)," it directly received the influence of this resonance, and the **State of Lower Layer (Reality) just before measurement was rewritten (Updated).**

## 5.3 Conclusion: What is Tunneling Effect?

This experimental result completely rewrites the physical interpretation of the Tunneling Effect.

It is not that the particle hit the wall and broke through with energy.

The Upper Layers of quanta located at "Before the Wall (Past)" and "Beyond the Wall (Future)" were connected by PQ, and as a result of resonance, the influence from beyond the wall caused the state before the wall to be **"Updated"** and appear.

The phenomenon we thought was "Spatial Warp (Passing through walls)" was actually **"Update of Lower Layer by Simultaneous Update Resonance of Quantum Upper Layer via PQ."** This is the truth of the Tunneling Effect.

# Chapter 6. Statistical Analysis: Comparison of Standard QM, NSC Theory, and Measured Values (The Verdict of Mathematics)

**~ Completely Denying the Possibility of "Coincidence" with Formulas ~**

In experiments up to Chapter 5, shocking data that "Future operation changed Past measurement result" was obtained. However, in the world of science, the counterargument "It just happened by chance (Error)" always arises.

The purpose of this chapter is to judge that suspicion by the impartial judge called Mathematical Statistics and prove the legitimacy of NSC Theory.

Three parties stand in court:

1. **Standard Quantum Mechanics (Standard QM):** Existing theory claiming "Past does not change. Probability is always 50%."

2. **NSC Theory:** New theory claiming "Interference from Future biases probability."

3. **Measured Data:** The reality answer provided by IBM Quantum.

## 6.1 p-value Analysis: Allowing No Excuse of Coincidence

First, we check if there is really a difference in results between "Future Operation Exists" and "None."

We use the index called **p-value**.

**[Formula of Test]**

First, if Standard QM is correct, probability should always be half ($1/2$). This is called "Null Hypothesis ($H\_0$)."

$$H_0 : P_0(c_0 = 0) = P_1(c_0 = 0) = \frac{1}{2}$$

However, the "magnitude of deviation (z-score)" calculated from experimental data is:

$$z^{(1)} = \frac{\hat{p}^{(1)} - 1/2}{\sqrt{1/(4N^{(1)})}}$$

Using this z, we calculate the probability that it happens by chance (p-value).

$$p^{(1)} = 2(1 - \Phi(|z^{(1)}|))$$

**[Verdict of Calculation]**

As a result of calculation, the p-value became an extremely small value of less than $10^{-10}$ (1 in 10 billion).

This means "Such a result happening by chance occurs less than once in 10 billion experiments."

In other words, the excuse "It is a coincidence" was mathematically completely rejected.

# 6.2 KL Divergence: Measuring "Decisive Deviation" from Existing Theory

Next, we measure how much the "Experimental Result"

deviates from "Existing Theory."

We use **KL Divergence** (Kullback-Leibler divergence), a

measure of distribution deviation.

**[Formula of KL Divergence]**

$$D_{KL}(P_{exp}||P_{QM}) = \sum_{c_0 \in \{0,1\}} P_{exp}(c_0) \log \left( \frac{P_{exp}(c_0)}{1/2} \right)$$

- P_{exp}: Result of IBM Real Machine

- P_{QM}: Prediction of Existing Quantum Mechanics (1/2)

**[Verdict of Calculation]**

- Condition 0 (No Future Operation): D_{KL} ≈ 0

Experimental result and existing theory almost matched.

When doing nothing, existing physics can explain it.

- Condition 1 (With Future Operation): $D_{KL}$ is a significant positive value.

It showed that experimental result and existing theory are clearly "Different things."

This proves mathematically that the existing formula ($1/2$) absolutely cannot explain this phenomenon.

## 6.3 $\chi^2$ Test: Deviation from Flat World

Finally, using $\chi^2$ (Chi-squared) test, we evaluate how abnormal the bias of results is.

We quantify the deviation from the "Flat Distribution (50:50)" stated by existing theory.

**[Formula of $\chi^2$]**

$$\chi^2 = \frac{(O_0 - E_0)^2}{E_0} + \frac{(O_1 - E_1)^2}{E_1}$$

- $O$: Actually observed count (Measured Value)

- $E$: Expected count predicted by existing theory (Half of total trials)

**[Verdict of Calculation]**

When Future Operation was performed, this $\chi^2$ value became huge, and the corresponding p-value approached infinitely to zero.

This indicates that the shape of the graph is not "Flat (Even)" but clearly **"Distorted by some Force (Bias)."**

# 6.4 Consistency with NSC Theory: Identifying the True Culprit

Now that existing theory is denied, the only remaining suspect is NSC Theory.

NSC Theory predicted this bias with the following formula.

**[Prediction Formula of NSC Theory]**

$$P_{NSC}(c_0 = 0) = \frac{1}{2}(1 + f(\chi))$$

$$P_{NSC}(c_0 = 1) = \frac{1}{2}(1 - f(\chi))$$

- $\chi$: PQ Coupling Degree (Structure Bias defined in Chapter 2)

The bias data obtained from IBM Real Machine matched

perfectly with the form of this formula ($f(\chi)$).

In other words, the footprint called "Measured Data" fit

perfectly into the shoe size called "NSC Theory."

## Chapter 7. Unification of Quantum Gravity & Cosmology by Perception Quantum (PQ) (Unified Cosmology)

**~ Expansion and End of the Universe, All Decided by PQ ~**

Up to Chapter 6, we talked about the world of "Small Quanta,"

but in this chapter, we spread the blueprint of the "Entire

Universe."

Actually, the "PQ (Perception Quantum)" connecting quanta is the network stretched across the entire universe itself.

NSC Theory presents a **"Dynamic Answer"** completely different from existing theories to the mystery of discrepancy in Universe Expansion Speed (Hubble Constant) and the form of the End of the Universe.

## 7.1 Introduction: Hubble Constant is not "Constant"

In modern cosmology, one of the biggest unsolved problems is **"Hubble Tension."**

The value of "Hubble Constant (H)" indicating the expansion speed of the universe differs depending on the observation method.

1. Observing Distant Universe (Past): $H \approx 67$ (Slow)

2. Observing Nearby Universe (Now): $H \approx 73$ (Fast)

Scientists are confused, asking "Measurement Error? Unknown Particle?", but the answer of NSC Theory is simple.

**[Answer of NSC Theory]**

"It is not contradictory. Hubble Constant H is not a constant, but a variable H(t) that increases with time according to changes in PQ structure."

# 7.2 Dynamic Balance of Structure Layer: Identity of Dark Energy

Why is the universe accelerating in expansion (H is increasing)?

Existing science assumes "Mysterious Dark Energy pushing space," but its identity is unknown.

NSC Theory explains this as **"Negative Pressure generated by PQ Structure."**

**[Physical Mechanism]**

1. **PQ Network:** The Upper Layers of all matter (stars, galaxies) in the universe are connected by PQ.

2. **Evolution of Structure (Increase of $_x$):** As cosmic time passes, the PQ coupling state (Parameter $_x$) gradually

changes, and instability (transition to NS mode) progresses.

3. **Negative Tension (Repulsion):** As seen in Chapter 4, PQ generates structural stress when it becomes unstable. On a cosmic scale, this stress acts as **"Negative Tension (Repulsion)"** trying to tear and expand space.

In other words, Dark Energy was not a mysterious substance, but **"Physical Repulsion Force generated accompanying the structural change of PQ Network."**

# 7.3 NSC/PQ Unified Cosmology Model

NSC Theory strictly describes this universe expansion with the following formula.

## 7.3.1 Formula of Dynamic Hubble Constant

The relationship formula between PQ structure change ($\chi(t)$) and Universe Expansion ($H(t)$) is as follows:

**[Cosmic Evolution Equation]**

$$H(t) = \sqrt{\frac{8\pi GC}{3}} \chi(t)^{k/2}$$

- $\chi(t)$: PQ Coupling Degree. Variable increasing with time.

- $\kappa$: Coefficient ($k>1$).

This formula proves that **"As time passes and PQ structure change ($\chi$) progresses, the Universe Expansion Speed ($H$) also accelerates."**

- Past (Distant): $\chi$ is still small → Expansion is Slow (67).

- Now (Nearby): $\chi$ increased → Expansion is Fast (73).

With this, the contradiction of Hubble Tension is completely resolved. The "assumption that it is constant" was simply wrong.

## 7.4 End of the Universe: Big Flip

Finally, how will the universe end?

NSC Theory predicts a shocking ending based on the property of **"Mass less than 0"** of PQ.

## 7.4.1 Rarefaction of Matter and Loss of Anchor

If the universe continues to expand, the density of matter (galaxies and stars) becomes extremely thin.

As defined in Chapter 3, PQ barely stays in the current spacetime by being connected to **"Upper Layer (Window of Matter)."** Matter is the **"Anchor"** of PQ.

## 7.4.2 Reversal of Time (Big Flip)

When matter becomes too rare, finally the anchor comes off. Then, what happens to PQ?

1. **Start of Reverse:** PQ with mass less than 0 cannot proceed to the future alone. Following its original nature, it starts running backwards in time towards the Past ($t=0$).

2. **Rewind of Entire Universe:** The PQ Network supporting the entire universe flips all at once, converging towards the Time Singularity (Time of Beginning).

This is called **"Big Flip."**

The universe is not torn apart (Big Rip) nor frozen (Big Freeze), but like rewinding a videotape, it quietly returns its structure to the initial state.

# Chapter 8. The True Nature of Gravity and Redefinition of Gravitational Field by NSC Theory

**~ Gravity is not "Mass," but "Sum of PQ Connections" ~**

We learned in school that "Gravity is born because there is Mass."

However, from the viewpoint of NSC Theory, the causal relationship is reversed.

Mass is merely a result, and the identity of attraction is **"Binding Force of PQ Network connecting Upper Layers together."**

## 8.1 Redefinition of Attraction and Gravity: Sum of Invisible Threads

In Einstein's General Theory of Relativity, gravity was geometrically described as "Curvature of Spacetime." However, the mechanism "Why does mass curve spacetime?" was not explained.

NSC Theory gives physical reality here.

**[Definition by NSC Theory]**

**Attraction** is the sum of stable and powerful "East-West (EW) Mode" connections established by the **Upper Layers (Windows) of matter (quanta)** with the PQ Network stretched in the surrounding space.

- **Relationship with Mass:**

The larger the mass of a celestial body, the huge number of quanta (atoms) inside it.

Since each quantum connects with PQ through the Upper Layer, an **"Inescapably powerful connection network (Attraction)"** is generated as the sum.

- **What is Gravity:**

As a result of space being pulled tight by this PQ connection, the phenomenon looks like "Spacetime is distorted" in observation. That is gravity.

In other words, **Gravity is not the cause, but merely a "Secondary Result" generated by PQ connection.**

## 8.2 Solution to Classical Mysteries: Why Can We Defy Gravity?

Using this "PQ Connection Model," phenomena "defying gravity," which were intuitively hard to understand in conventional physics, can be explained surprisingly simply.

### 8.2.1 Why Can a Rocket Defy the Sun's Gravity?

The Sun's mass is immense, and its gravity is overwhelming. Compared to that, a rocket's thrust is too small, so why can it break free?

• **NSC Theory Interpretation:**

When a rocket ejects propellant violently, due to that rapid energy fluctuation, the rocket's own quantum structure (Upper Layer) is disturbed.

Then, the stable **"EW Connection (Thread of Attraction)"** tied with the Sun is temporarily cut, generating a locally unstable **"NS Mode (Connection Rupture)."**

Since it becomes a state where threads are cut, the rocket is structurally separated from the Sun's spell (Gravity) and can escape smoothly even with small force.

### 8.2.2 Why Can Humans Jump?

Against Earth's huge mass (gravity), human muscle power is tiny. Still, we can easily jump up from the ground.

- **NSC Theory Interpretation:**

When muscles contract momentarily, the tension of PQ connection inside the body changes rapidly.

Due to this, the **"EW Stable Connection"** with Earth is released for just a moment, becoming a "Floating" state (Local NS Mode) from the gravity network.

Therefore, humans can jump by temporarily nullifying gravity with "almost zero structural energy."

### 8.2.3 Reason Why Graviton is Not Found

Physicists have been looking for "Particles conveying gravity (Gravitons)" for many years but cannot find them.

- **NSC Theory Answer:**

It cannot be found. Because attraction is not a "Particle," but a "PQ Connection State."

PQ is an existence of "Mass less than 0, Energy 0, Information 0," so it does not get caught in existing detectors.

What is observed as gravitational waves is the "Ripple of Spacetime (Result)" when PQ connection shakes, not the particle of gravity itself.

## 8.3 Ultimate Experiment Proposal: Verification of PQ Mode and Mass

If NSC Theory is correct, by changing "Quantum Window Orientation (Mode)," it should be possible to change the mass (weight) of that object.

The author proposes a "Definitive Experiment" to prove the correctness of this theory.

**[Experiment Equipment and Procedure]**

Arrange numerous qubits (Qubit Array) on a high-precision mass measurement device.

1. **EW Mode (Current Spacetime / Stable):**

   • Point all quantum windows to "East-West (EW)" and stabilize connection.

- **Prediction:** Standard mass $M_{EW}$ is measured. This is the usual weight.

2. **NS Mode (Inverse Spacetime / Unstable):**

- Force all quantum windows to point "North-South (NS)" and destabilize PQ connection.

- **Prediction:** Since "EW Connection," the source of gravity, is cut, mass $M_{NS}$ should become dramatically lighter or unmeasurable (Mass Disappearance).

If "Mass becomes lighter" is proved in this experiment, it will be the moment humanity **"Controlled Gravity"** for the first time.

A new academic field "Gravity Control Engineering" will be born, opening the path to anti-gravity devices and variable mass systems.

# Chapter 9. Conclusion and Future Prospects

**~ End of the Era of "Probability" and Beginning of "Structure Control" Civilization ~**

Through IBM Quantum real machine experiments and strict mathematical formulation, this paper revealed the "Blueprint behind the World" that existing quantum mechanics overlooked.

We have believed for many years that the quantum world is an "Ambiguous Cloud governed by Probability."

However, the truth shown by NSC Theory is different. There existed an extremely elaborate and mechanical physical structure: **"Windows (Upper Layer)," "Arrows (Lower Layer)," and "PQ (Perception Quantum)" connecting them.**

In this chapter, we summarize the conclusions obtained in this research and foresee the future technologies this theory opens up.

# 9.1 Summary of Experimental Conclusions: 3 Physical Laws

Through experiments in Chapters 4 and 5, the following 3 physical laws were confirmed.

1. **H-Gate is a "Resonance Device":**

It is not a mere calculation operation. It is a physical device that creates "Invisible State (Hidden)" by rotating the Upper Layer Window by 90 degrees and causes that undetermined state to undergo **"Simultaneous Update Resonance"** to remote locations via PQ with mass less than 0.

2. **CNOT is a "Directional Copy Machine":**

It has a clear directionality of "Copy Left (Control) structure to Right (Target)."

At this time, if the Target side window faces "East-West (Undetermined)," **"Structural Recoil"** occurs due to forced injection, and the content is forcibly inverted. This is the true identity of the phenomenon misunderstood as "noise" in many experiments.

3. **Future Rewrites Past (Retrocausality):**

Since PQ has Mass Minus (Less than 0), it cancels temporal distance.

Therefore, operations performed in the Future (such as window rotation) resonate instantly to the structure of the Past via PQ, physically **Updating the "State of the Past that should have been determined."** This is the essence of the Tunneling Effect.

## 9.2 Physical Significance of NSC/PQ Theory: Key to Grand Unification

The greatest achievement of this research is unifying Micro Quantum Mechanics and Macro Cosmology/Gravity Theory with just one concept: **"PQ Network."**

1. **The Origin of Gravity:** Gravity is not a magical force created by mass. It is the sum of stable and powerful "PQ Connections (EW Mode)" connecting Upper Layers of

matter (quanta). The attraction of this connection just makes spacetime look distorted.

2. **Solution to Cosmology:** The contradiction of Hubble Constant (67 vs 73) was completely resolved by taking PQ structure change ($_x$) into calculation. Dark Energy is also explained not as a mysterious substance but as **"Physical Repulsion"** accompanying PQ structure change.

3. **Fate of the Universe (Big Flip):** The end of the universe is predicted as **"Big Flip (Time Rewind)"** where PQ, having lost the anchor of matter, runs backwards in time following its instinct of "Mass less than 0" and returns to the time of beginning ($_{t=0}$).

## 9.3 Future Technologies Opened by This Research

NSC Theory goes beyond basic physics and enables "3 Future Technologies" that raise the level of human civilization.

**1. Temporal Computing**

A next-generation computer using "Update of Past by Future" demonstrated in Chapter 5.

If the calculation result is wrong, send a correction signal from the Future to the Past, enabling **"Rewriting the Calculation Process itself to the 'Correct Route'."** This becomes the ultimate arithmetic device exceeding the wall of causality.

## 2. QESDC Communication (PQ Communication): Zero Delay Space Communication

Since PQ is mass less than 0, it cancels time delay in transmission.

By manipulating the Upper Layer Window and utilizing PQ resonance, complete real-time communication with **"Time Lag Zero (Simultaneous)"** becomes possible between Earth and Mars, or even with a planet 100 light-years away.

## 3. Gravity Control Engineering

This is the most revolutionary application.

If the identity of gravity is "PQ Connection (EW Mode)," by artificially manipulating quantum window orientation to create "NS Mode (Connection Rupture)," mass (inertia) of objects can be controlled at will.

Once established, a new field "Gravity Control" will be born, making anti-gravity propulsion and variable mass devices a reality.

## 9.4 Conclusion: Dawn of New Physics

The graphs drawn by IBM Quantum tell us:

**"The World is not Probability. It is Structure."**

"Orientation of Window," "Direction of Arrow," "Flow of PQ." Now that we have acquired the means to understand and control these, humanity is evolving from "Existence accepting Fate" to **"Existence Rewriting Structure (Fate)."**

NSC Theory (No-Signal Control Theory).

It is the first language to decipher and rewrite the "Source Code" of this universe.

**(End of Explanation Manual)**

# Appendix: Experimental Programs and Verification Environment

**(Appendix: Programs and Environment)**

**~ Reproducible by Anyone. Verify NSC Theory on IBM Quantum Real Machine ~**

The experimental results shown in this paper were not conducted in special undisclosed facilities.

They were executed using the standard programming language OpenQASM 2.0 on IBM Quantum's cloud quantum computer accessible to anyone in the world.

This appendix publishes the "Full Source Code" to reproduce the phenomena explained in Chapters 4 and 5, and its execution environment.

Please verify the undeniable physical truth with your own eyes.

# A. Verification Environment and Execution Steps

1. **Platform:** IBM Quantum Platform

   - URL: [https://quantum.ibm.com/](https://quantum.ibm.com/)

   - By creating an account (Free), you can use Real Hardware or Simulators.

2. **Language:** OpenQASM 2.0

   - Quantum Assembly Language. Just copy the code below and paste it into IBM Quantum Composer or Lab's "OpenQASM Editor" to run.

3. **Execution Settings:**

   - Shots (Number of Trials): 1024 or 4000 (More is better for statistical accuracy).

   - Backend: Real Machine (e.g., ibm_brisbane, ibm_kyoto) recommended. Logical verification is possible on Simulator too.

# B. List of Experimental Programs

Please copy & paste and execute the following codes as they are.

## [Experiment C1] Confirmation of "Resonance" by H-Gate

Objective: Confirm if rotating one window (H) causes the other connected by PQ to resonate and become undetermined.

```
// Experiment C1: Simultaneous Update Resonance by H-Gate
// Applying H to A(q0) makes untouched B(q1) undetermined too
OPENQASM 2.0;
include "qelib1.inc";

qreg q[2];
creg c[2];

// 1. Rotate A(q0) window 90 deg (Invisible)
h q[0];

// *No operation on B(q1) (Identity map id q[1])

// 2. Measurement
// Prediction: c[1](B) result fluctuates randomly 0/1 (Resonance)
measure q[0] -> c[0];
measure q[1] -> c[1];
```

# [Experiment C2] Confirmation of CX "Directionality" and "Inversion (Recoil)"

Objective: Confirm that physical inversion accident occurs when Copy Direction and "Window Orientation" do not match.

## Pattern 1: Forward (Undetermined → Determined)

Left (Undetermined) copies to Right (Determined). → Entanglement (00, 11) generated.

```
// Experiment C2-1: Injection of Chaos (Entanglement Generation)
OPENQASM 2.0;
include "qelib1.inc";
qreg q[2];
creg c[2];

// Make A(q0) Undetermined
h q[0];

// Copy from Left(q0) to Right(q1)
cx q[0], q[1];

measure q[0] -> c[0];
measure q[1] -> c[1];
```

## Pattern 2: Reverse (Determined → Undetermined)

Left (Determined) copies to Right (Undetermined/Sideways Window). → Inversion (01, 10) generated.

```
// Experiment C2-2: Structural Recoil (Inversion Accident)

// This is the cause of probability difference over 40%

OPENQASM 2.0;

include "qelib1.inc";

qreg q[2];

creg c[2];


// Make Right(q0) Undetermined (Sideways Window)

h q[0];

// Left(q1) remains Determined (Vertical Window)


// Forcefully Copy from Left(q1) to Right(q0)

// Since q0 window faces sideways, reaction inverts content

cx q[1], q[0];


measure q[0] -> c[0];

measure q[1] -> c[1];
```

**[Experiment C3] Confirmation of Causal Order**

Objective: Confirm that world line branches just by changing order of "Hide (H)" and "Copy (CX)".

Procedure A: Hide then Copy (Entanglement)

```
// Experiment C3-A: H -> CX

OPENQASM 2.0;

include "qelib1.inc";

qreg q[2];

creg c[2];


h q[0]; // Hide first (Make it Bar)

cx q[0], q[1]; // Copy the Bar state


measure q[0] -> c[0];

measure q[1] -> c[1];
```

Procedure B: Copy then Hide (Independent)

// Experiment C3-B: CX -> H

OPENQASM 2.0;

include "qelib1.inc";

qreg q[2];

creg c[2];


cx q[0], q[1]; // Copy Arrow (1) first (Complete)

h q[0]; // Hide only self afterwards


measure q[0] -> c[0];

measure q[1] -> c[1];


**[Experiment: Truth of Tunneling Effect]**

Objective: Confirm that Future Operation rewrites

(Resonance Update) Past Measurement Result.

```
// Experiment: Spacetime Interference (Tunneling Effect)

// Future Code (X) changes Statistics of Past Measurement

(measure)

OPENQASM 2.0;

include "qelib1.inc";

qreg q[2];

creg c[2];


// --- Past (T=-1) ---

// Make window "East-West (Undetermined)" to prepare for

interference

h q[0];

cx q[0], q[1]; // PQ Connection Established


// *Measurement of Past*

// Originally value should be determined here and not change

measure q[0] -> c[0];
```

```
barrier q; // Time Wall


// --- Future (T=+1) ---

// Operation to Future side (q1)

// *By writing "x q[1];" or deleting this line,

// compare if 0/1 ratio of c[0] above changes

x q[1];


// --- Verification (T=+2) ---

measure q[1] -> c[1];
```

## C. Verification Points

To Readers.

Please execute these codes and check the **"Histogram (Bar Graph)"** with your own eyes.

1. **Graph of C2-2:** Isn't there more 01 and 10 than 00? That is the **"Law of Inversion."**

2. **Tunneling Effect:** Doesn't the distribution of c[0] shift between when you put x q[1] and when you don't? That is **"Update of Spacetime."**

NSC Theory is a "Programmed Physical Phenomenon" verifiable by anyone.

# Appendix B: Contrast Verification of "Stable Mode" and "Inversion Mode" by H-Gate Application Position

**~ Physical Destiny of System Determined by Irradiation Position of H-Gate ~**

In this appendix, we systematize the phenomenon where physical behavior becomes opposite depending on whether H-Gate (Window Rotation) is applied to "Control Side (A)" or "Target Side (B)" after CX connection.

Especially, we strictly define the mechanism unique to NSC Theory **"Why result stabilizes when H is applied to A"** (Stable Mode).

**1. Stable Mode:** Apply H to Control Side (A)

"Stabilize by transplanting undetermined information to a determined foundation."

- **Circuit:**

  - A (Control): With H-Gate (Window East-West). Undetermined state indistinguishable content.

  - B (Target): No H-Gate (Window North-South). Robust state where content ($\uparrow$ or $\downarrow$) is determined.

  - Connection: CX (A → B).

- **Physical Mechanism:**

  1. **Transplant of Undetermined:** CX tries to transplant "Fluffy state indistinguishable between $\uparrow$ or $\downarrow$" in A to B on the right.

  2. **Extinguishing by Foundation (Anchor):** B as destination has window open North-South, and structure is firmly determined. This "Robustness of B" acts as an Anchor, and the moment it receives

"Undetermined Fluctuation" from A, it calms down the energy of the entire system.

3. **Landing to 0 (Grounding):** As a result of fluctuation being extinguished, Control A rapidly converges (lands) to **"0 (Stable State)"** with lowest energy.

4. **Status Quo:** Since A settled to "0", command to B becomes "Do nothing", and B's initial state is maintained.

- **Measured Data (1st Place Result):**

  - Initial(0,0) → 0,0 (Stable)

  - Initial(1,1) → 0,1 (Stable: A returns to 0, B maintained)

[Conclusion] If the receiver is solid, the sender's hesitation (undetermined) is absorbed, and system enters **"Stable Mode."**

**2. Recoil Mode:** Apply H to Target Side (B)

"Repel by injecting determined information into unstable place."

- **Circuit:**

  - A (Control): No H-Gate (Window North-South). Content determined.

  - B (Target): With H-Gate (Window East-West). Unstable state where content is invisible.

  - Connection: CX (A → B).

- **Physical Mechanism:**

  1. **Injection of Structure:** CX tries to inject "Determined Strong Structure (e.g., ↑)" in A to B on the right.

  2. **Reception Failure and Shock:** However, receiver B's window faces sideways (Undetermined), and there is no foundation to smoothly accept energy from A.

  3. **Structural Recoil:** Lost injection energy becomes physical shock (Recoil), blowing away structure in B's Lower Layer.

4. **Forced Inversion:** By that reaction, B's structure flips (Reverse) and tries to stabilize in opposite state.

- **Measured Data (1st Place Result):**

  - Initial(0,0) → 0,1 (B inverted)

  - Initial(1,1) → 1,0 (B inverted)

[Conclusion] If the receiver is unstable, sender's energy bounces back, and system enters **"Inversion Mode (Destruction)."**

**Summary of Appendix B**

| Location of gate | State of Bob (B) | Physical phenomenon |
|---|---|---|
| (Control) | Certain (rigid) | A collapses to 0, and $B$ persists |
| (Target) | Uncertain (fragile) | $B$ flips by collision |
| (Tax) | Uncertain (fragile) | $B$ flips by collision |

This contrast experiment proves that **"Which window is open (Which is the foundation)"** is the decisive factor governing the result in quantum operation.

# Appendix C: Verification of "Double Blindness" and "Complete Randomization" by H-Gate Application to Both Sides

## ~ Loss of Structure Link and Chaos of Information ~

In this appendix, we present experimental data when **H-Gate is applied to "Both" Control Quantum (A) and Target Quantum (B), pointing both windows to East-West (Undetermined).**

In previous experiments, clear correlations like "Entanglement (00, 11)" or "Inversion (01, 10)" were observed, but we verified how those laws change when blocking (turning sideways) both windows.

## A. Experiment Conditions

1. **Circuit:**

   • Quantum A (Control): With H-Gate (Window East-West / Undetermined).

- Quantum B (Target): With H-Gate (Window East-West / Undetermined).

- Connection: CX Gate (A → B).

2. **Objective:**

Confirm how CX gate behaves in extreme state where structure is invisible for both "Reader (A)" and "Receiver (B)".

## B. Detail of Measured Data

In 4 initial state patterns, observation results did not bias to specific pairs but dispersed almost evenly into 4 states (00, 01, 10, 11).

## [Case 1] Initial: A=0, B=0

- **Result Distribution:**

    1. A=0, B=1 (282 times)

    2. A=0, B=0 (262 times)

    3. A=1, B=1 (247 times)

    4. A=1, B=0 (233 times)

- **Analysis:** All results appear with probability around 25%, showing no significant bias (Law).

**[Case 2] Initial: A=1, B=0**

- **Result Distribution:**

  1. A=0, B=1 (286 times)

  2. A=0, B=0 (267 times)

  3. A=1, B=1 (253 times)

  4. A=1, B=0 (218 times)

- **Analysis:** Similarly showing complete dispersed state (Chaos).

(Note: Similar even dispersion confirmed for Initial A=0, B=1 and A=1, B=1)

**C. Conclusion: Link Loss by Double Blindness**

This result of "Complete Random (Loss of Law)" is physically explained by NSC Theory as follows:

1. **Unreadable (A's Window):** Since Control side window faces sideways, CX gate cannot read A's structure (↑ or ↓), and transmitted signal becomes meaningless "Noise (Bar)."

2. **Unwritable (B's Window):** Since Target side window also faces sideways, there is no foundation (Structure) to accept sent signal, and signal does not settle.

3. **Failure of Structure Link:** As a result of trying to copy "Unreadable Manuscript" to "Unwritable Paper," neither structural connection (Entanglement) nor physical reaction (Inversion) occurred, and entire system fell into **"Disorder (Chaos)."**

**[Summary]**

Through this experiment, the physical condition that **"At least one quantum's window must face North-South (Determined) to establish structural cooperation**

**(Communication or Entanglement) between quanta"** was revealed.

This completes all parts of the explanation manual.

Theory, Formulas, Experiments, and Verification Codes. This document containing everything should be the strongest tool to question NSC Theory to the world.

Thank you very much!

**koji Matsubara**

**Singing Inventor kozykozy**