

A World Told by Ontology II

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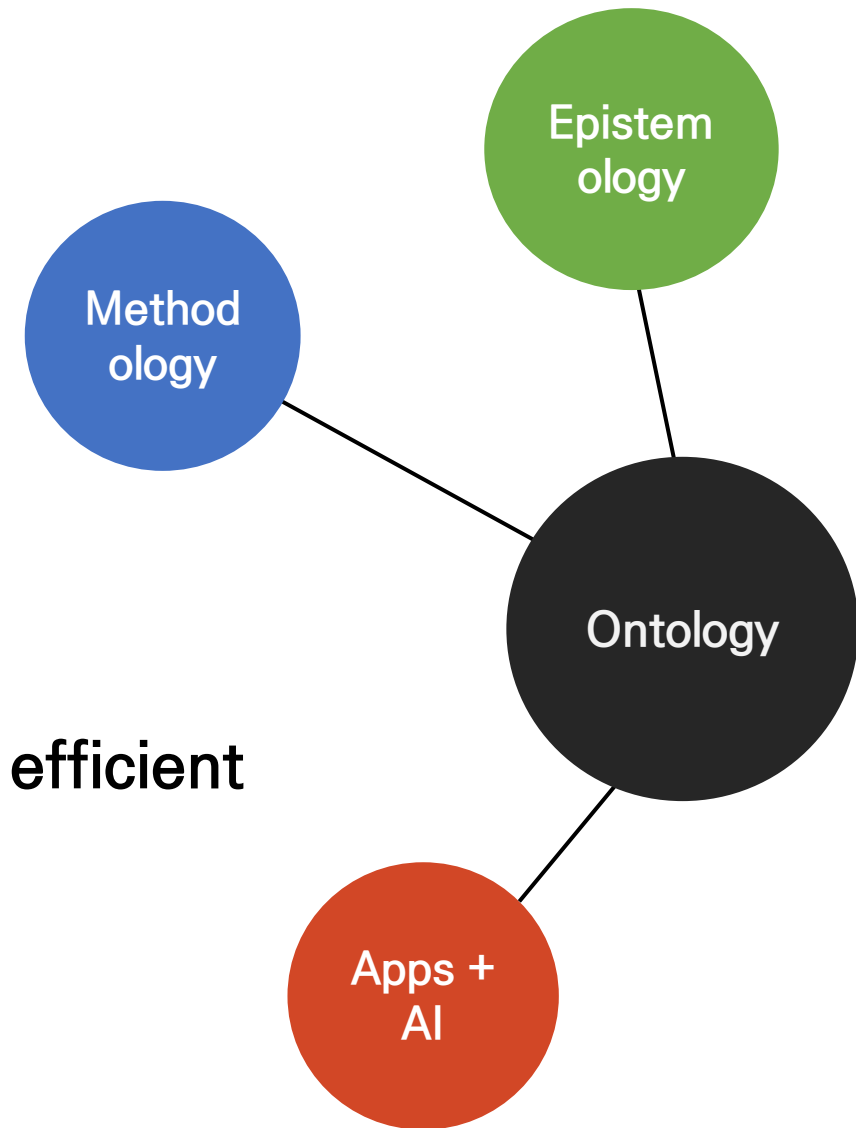
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Preface

Understanding Being: Essence and Phenomena

- Essence: **Wave Energy**
- Phenomenon: **Dynamics movement of Mass Energy in Space**
- Existence: **Self-organizing energy body by efficient and creative movement**
- Principle: **Law of conservation of energy and principle of least action**



Ontological scientific method

- **Ontology** → **What?**

What is it

Why should it exist

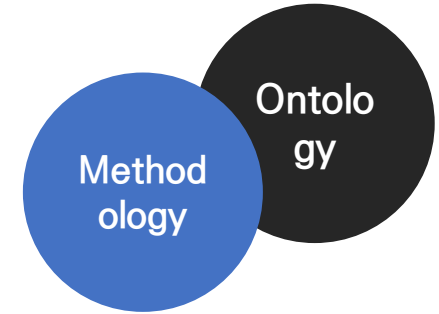
- **Essentialism** → **Why?**

Self-constitutive principle of existence:
efficient self-existence

- **Phenomenology** → **How?**

Pattern analysis, inference and
verification based on essence theory

Big Data and AI



- The world is composed of
mass energy and space

- Nature is an essential three-dimensional world

- Time is not a physical element
but a human element

1. Universal Dynamics : Natural Gravity Theory Based on Quantum Field Theory Page 3



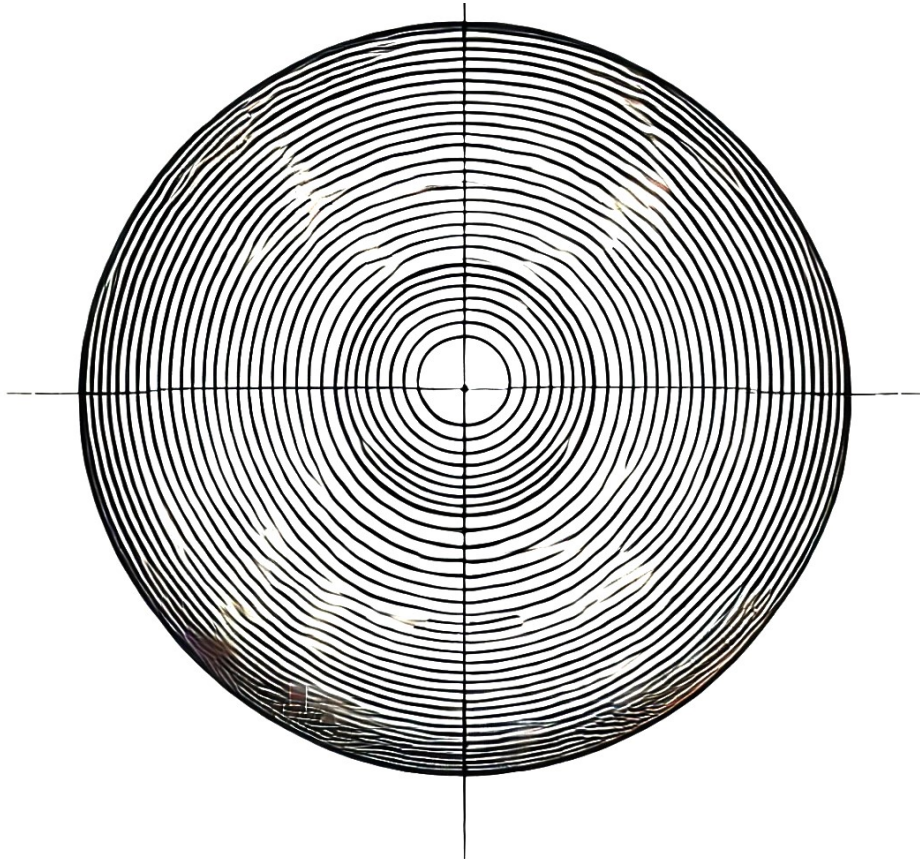
Being and the World

- Quantum theory
- Quantum field theory QFT
- Natural theory of gravity
- General principles of nature

The basic structure of quantum

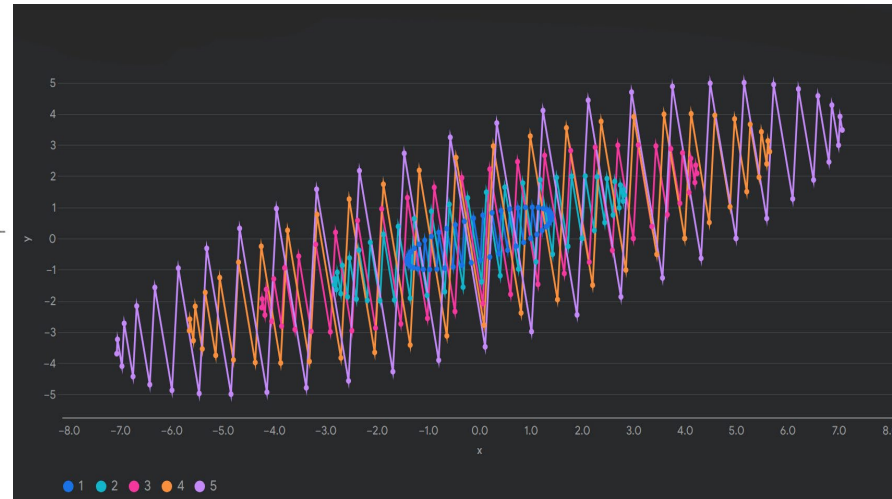
Based on the concepts of quantum theory and quantum field theory, the structure of quantum and elementary particles can be interpreted as shown in the figure.

Quantum prototype:
spherical wave



Cross section of a spherical wave

Quantum is a 360 degree
omnidirectional spherical wave

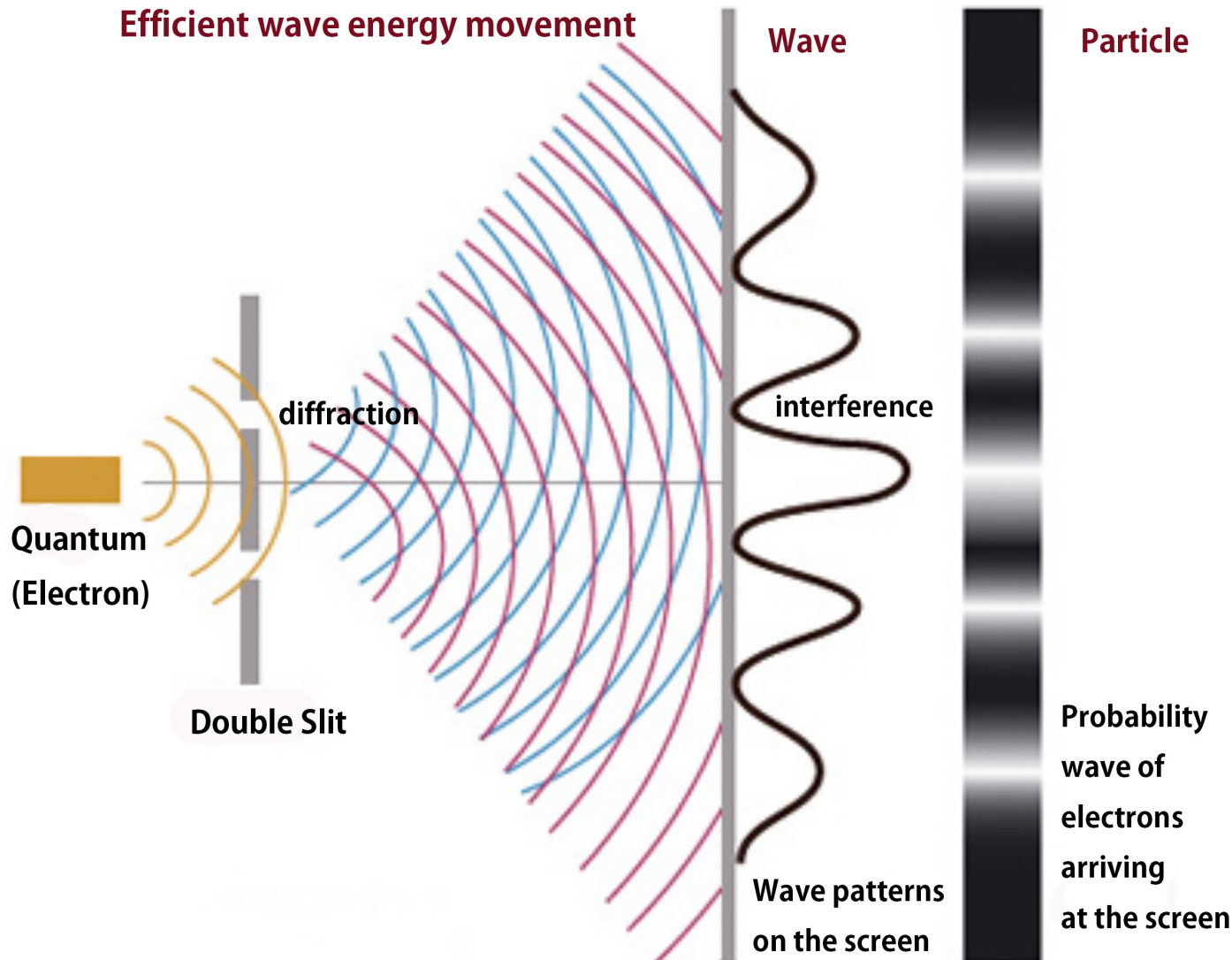


Mathematical
interpretation

$$\psi(r) = \frac{A}{r} e^{ikr} \approx A e^{ikr}$$

$$|\psi(\vec{r})|^2 = P(\vec{r})$$

Figure 1. Wave Partical duality in Double slit



- Waves manifest as particles
- High density multi-waves are perceived as matter
- Matter is not dualistic, Human perception is dualistic

Essence: Wave Phenomenon: Particle

$$\left| \sum_n c_n \phi_n(\vec{r}) \right|^2 = |\psi(\vec{r})|^2$$

Rationality

Experience

Space and Mass Energy

Classical Mechanical
Interpretation

Quantum field theory
interpretation

Space Energy

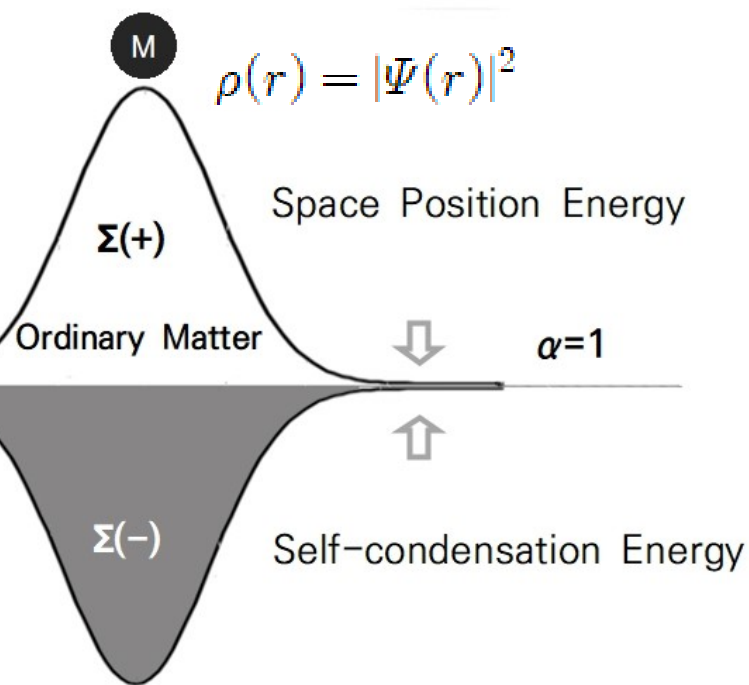
$$U_{space} = \frac{GM_T m}{R}$$

Kinetic energy



Gravity energy

$$U_{gravity} = -\frac{GMm}{r}$$

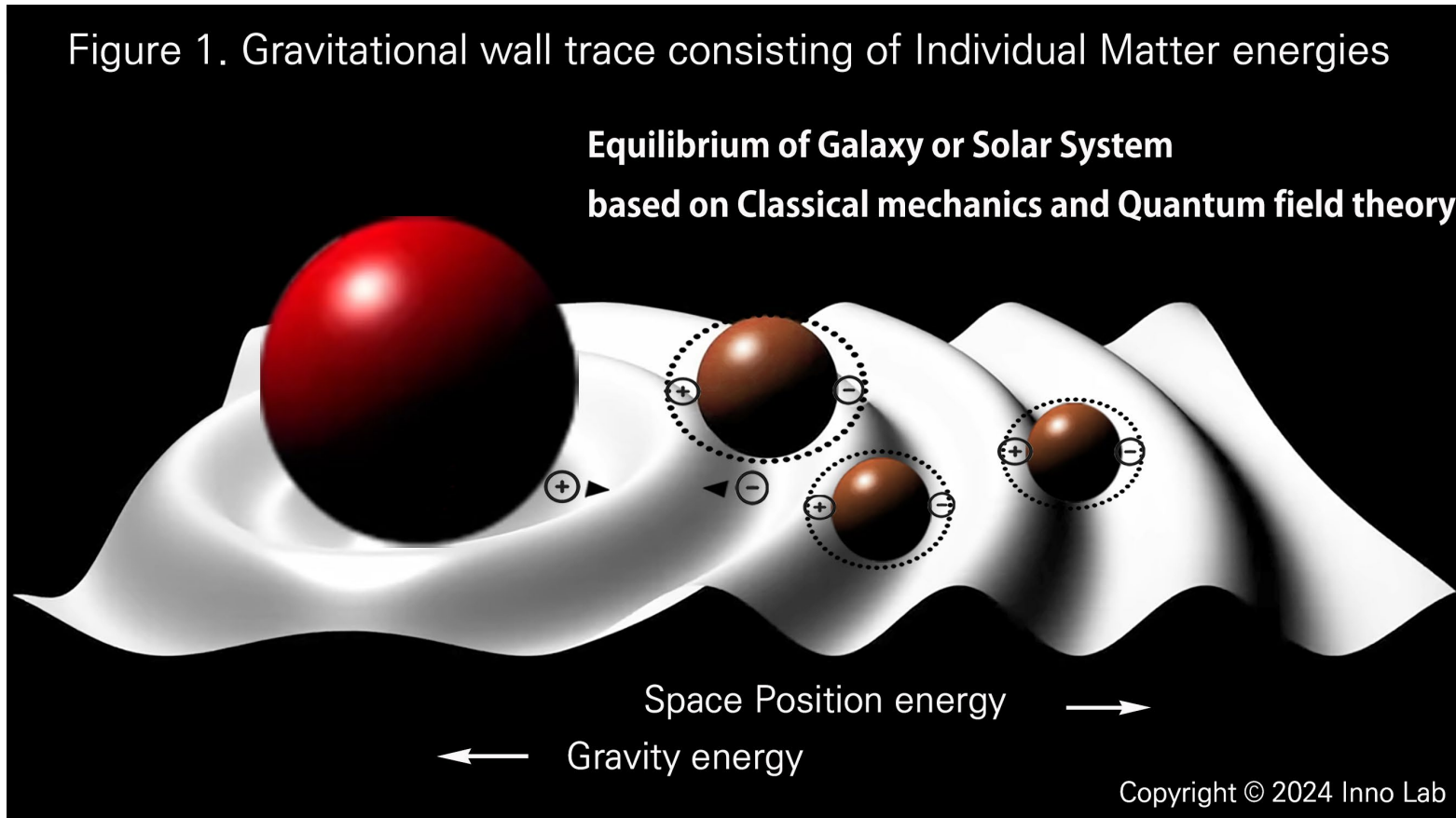


Gravity Generation and the space movement

Mass energy is itself position energy

- Space produces mass energy
- Mass energy produces position energy (+) in space.
- The space position energy produces a corresponding Gravity energy (-).
- Gravity is a natural dynamical system

Equilibrium Movement of Gravity



- Space is a closed, large fluid with extremely low density and temperature, and has elasticity, and does not interact unnecessarily.
- Space is the mother of the universe that perfectly stores, transfers, and transforms energy.
- Celestial bodies, which are large masses, compress space, and compressed space has potential energy of (+) and (-).
- Gravity is a natural dynamic that is a sophisticated and stable energy density balance movement.

- World System Interpretation

Hamiltonian dynamics	$U_H = E_{kinetic} - U_{gravity} + U_{space}$	Classical mechanics interpretation
UH Natural Dynamics	$U_H = \frac{1}{2}mv^2 - \frac{GMm}{r} + \alpha \frac{GM_T m}{R} + \rho(r)$	Quantum field theory interpretation

- Individual System Configuration

System Functions

Kinetic energy	$E_{kinetic} = \frac{1}{2}mv^2$	Unified movement
Gravity energy	$U_{gravity} = - \frac{GMm}{r}$	Control System
Space position energy	$U_{space} = \alpha \frac{GM_T m}{R}$	Adjustment System
Energy density function	$\rho(r)$	Spatial interpretation and energy density display

3. Research Methodology Advancement

Ontological Scientific Method

Page 9

- **Ontology** → **What?**

What is it

Why should it exist

A definite being has a definite essence.

- **Essentialism** → **Why?**

Self-constitutive principle of existence

Conservation of Energy and

Minimum Action: Rationality.

- **Phenomenology** → **How?**

Pattern analysis and inference
based on essence theory

Big Data and AI

Essence and Phenomena Patterns Analysis

- Dualistic perception of existence

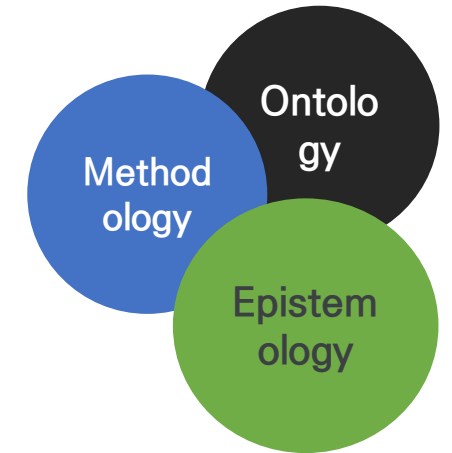
Essence and Phenomena with Patterns Analysis

Clarification of phenomena
from the essence

Clarification of existence
from the essence

- Pattern analysis and inference
with verification

from **Big data and AI**



Conservation of Energy and Minimum Action

- Rational self-realization based on natural principles
- Minimum and maximum correspondence

The minimum action under the law of conservation of energy maximizes the efficiency of the system. It "minimizes" the action while "maximizing" the dynamics of the system.

When nature changes a system, the change follows the most efficient path possible (minimum action, shortcut).

Humans, who are part of nature, are no different. Following natural principles is called "rationality" or "wisdom." Big principles are strict, and small principles are flexible.

- The world is an interaction of space and mass energy.

$$\text{Action } S = \int_{r_1}^{r_2} L dr = \int_{r_1}^{r_2} (T - V) dr$$

T : Kinetic energy V : Position energy r : Position

$$E_{total} = T + V = \text{constant}$$

- Here, the minimum action corresponds to the maximum action of the system.



Harmony between individual autonomy and community

- A clear and flexible world perception
- Fair and creative interaction

Harmony of Subjectivity and Objectivity
Balance between objects and systems

$$U_H = \frac{1}{2}mv^2 - \frac{GMm}{r} + \alpha \frac{GM_T m}{R} + \rho(r)$$

$$U_{\mathcal{L}} = \frac{1}{2}(\nabla\phi)^2 - \frac{1}{2}G\phi\nabla^2\phi + \alpha G \frac{\phi\phi_T}{R^2} + \rho(r)$$

