

Quantum Entanglement from the Perspective of the Theory of the Infinite Quantum Field

1. Introduction to Quantum Entanglement

Quantum entanglement is one of the most fascinating phenomena in quantum mechanics, where two or more "particles" remain interconnected such that a change in the state of one "particle" instantly affects the state of the other, regardless of the distance between them. This phenomenon challenges classical notions of locality and causality. From the perspective of the theory of the infinite quantum field, quantum entanglement can be explained as a natural consequence of the harmonized auto-irritation of the field, where all "particles" are manifestations of the unified, indivisible reality of the field.

2. The Infinite Quantum Field as the Foundation of Reality

The theory of the infinite quantum field posits that this field is the ontological foundation of reality—homogeneous, continuous, and indivisible. All phenomena in the universe, including "particles," space, and time, are manifestations of this field.

Discrete auto-solicitations: When the field reacts to itself through processes of auto-solicitation, localized modifications arise, which we recognize as "particles."

Harmonization: Every auto-solicitation does not disrupt the unity of the field but creates localized manifestations that remain ontologically connected to the whole.

3. Harmonized Auto-Irritation and the Emergence of Quantum Entanglement

The process of creating entangled "particles":

When the infinite quantum field generates two "particles" through auto-irritation of the same intensity, they are fully harmonized because they arise from the same ontological process within the field.

The harmonization of these auto-solicitations reflects their dynamic interconnectedness, resulting in quantum entanglement.

Absolute connection through the field:

Although "particles" may appear spatially separated, they remain connected through the indivisible foundation of the infinite quantum field.

Their connection is not a consequence of information exchange across space but of the intrinsic unity of the encompassing field.

Changes in the states of entangled "particles":

When the state of one "particle" changes, it automatically affects the other because both are part of the same field.

This change does not require the transmission of information across space, as the field already contains complete information about both "particles."

4. Ontological Implications of Quantum Entanglement

The unity of the universe:

Quantum entanglement indicates that the universe is not a collection of isolated objects but an integrated whole where all phenomena are connected through the shared foundation of the field.

Overcoming locality:

Entanglement demonstrates that local events are not entirely independent but are part of a universal process within the field.

Fundamental interconnectedness:

All "particles," regardless of their spatial separation, share a common foundation and remain in dynamic harmony with the field.

5. Quantum Entanglement and Modern Physics

Quantum mechanics and the field:

In quantum field theory, "particles" are already considered local excitations of the field, but the theory of the infinite quantum field adds an ontological dimension to this interconnectedness.

Holographic connectivity:

The phenomenon of entanglement can be linked to the hypothesis that the universe's entire information is "embedded" in the field, enabling instantaneous connectivity.

Experimental evidence:

Experiments confirming entanglement, such as Bell tests, can be understood as empirical confirmation of the unified nature of the field.

6. Conclusion

From the perspective of the theory of the infinite quantum field, quantum entanglement is not a mysterious or inexplicable phenomenon. It is a natural expression of the dynamic harmonization within the unified foundation of the field. "Particles" that arise through the field's auto-solicitations remain connected because they are manifestations of the same reality. This perspective not only explains entanglement but also deepens our understanding of the universe's fundamental interconnectedness.