Some more applications of Spatial Arithmetic

1) Spatial Arithmetic explains the Twin Paradox

In the twin paradox, both observers see the other as moving, yet only the one who remains in the stationary frame ages more. Explaining this paradox using acceleration is unsatisfactory. According to relativity, it is velocity that causes time dilation relative to a stationary observer, not acceleration. However, since both observers see the other as moving, the twin paradox arises.

Spatial Arithmetic explains the paradox as follows:

The actual motion of energy (one person truly moving) increases the spatial value of the truly stationary observer. As a result, the time of the stationary observer flows more slowly.

Through this explanation, Spatial Arithmetic also shows that spacetime is not a background. Instead, what we call spacetime is actually the spatial value generated by the motion of energy. This means that each reference frame, each object, each state of energy possesses its own spacetime. Therefore, each human being — even each organ or individual cell — has its own spacetime, meaning a distinct accumulation of generated spatial value.

The essence of matter is energy under compression, causing variations in spatial value, and each material object possesses its own spacetime.

2) Spatial Arithmetic and Hawking Radiation

Hawking radiation is predicted radiation emitted by black holes. It causes black holes to lose mass and energy (black hole evaporation). However, Hawking radiation has never been directly observed from astrophysical black holes. Radiation observed in laboratory analog experiments carries extremely small energy.

Therefore, Hawking radiation cannot be considered a sufficient explanation for black hole evaporation. The radiation is either unobserved in reality or far too weak experimentally to account for the loss of mass and energy of a black hole (the black hole information paradox). Moreover, black holes also absorb matter, increasing their mass and energy rather than remaining fixed. Hawking radiation, with its extremely small energy, cannot reasonably explain significant mass-energy release.

Spatial Arithmetic explains the black hole information paradox as follows:

When an energy state is compressed to an extreme degree (a black hole), the resulting increase in spatial value cannot continue within the current universe. Spatial value cannot be generated in this universe and is instead transferred to another universe created within that compressed energy state itself. Thus, the mass and energy of the black hole are transferred to a new universe. Furthermore, the black hole may draw spatial value/energy (extract spatial value — the negative area in L-coordinate system) from this universe, allowing it to travel through time, potentially even moving backward into the past of this universe.

3) Spatial Arithmetic explains Quantum Mechanics

In the microscopic world:

- Heisenberg Uncertainty Principle and wave–particle duality:

When there is no observation (no directed generation of spatial value), the energy state (light/vibration) has not yet determined a direction of spatial value generation, thus exhibiting wave-like behavior.

When observation occurs (directed generation of spatial value), the energy state selects a direction to generate spatial value, becoming particle-like (still vibration in essence, but more concentrated).

3) Spatial Arithmetic explains Quantum Mechanics

In the microscopic world:

- Quantum entanglement:

Entanglement is not due to any particle transmitting information faster than light connecting two energy states. Instead, it is the synchronized generation of spatial value between them.

This is only a personal viewpoint that I would like to share from my own reflections. Thank you for reading these lines.