

From a Point to the Whole World: Quantum Model and Physical Quantity

【Abstract】 How is the world made up? So far, there is no good explanation. Based on the point model of the world, the quantum model is made by logical reasoning. Several thought experiment about perception are made to explain how physical quantities such as time and space emerge. Here we show that a dividing, decaying, and rotating point can build a colorful world.

1. Quantum Model

There **MUST** be the smallest composition of the world. Otherwise the world is an integral unit. We define the smallest composition for quantum.

According to the law of identity and homoorganicity, quantum **MUST** have following characters.

Character 1: All quanta **MUST** be same.

If there are two different quanta, they must be in two different worlds. It goes against that they are in the same world.

Character 2: Quantum **MUST** be divided.

If quantum can not be divided, the world built up by it can not be divided. It goes against that the world has already been divided into quanta.

When you see this sentence, quanta exist and the number is fixed. But when you see this sentence, former quanta have been divided, and the number increases. So the world is both limited and unlimited. There is the smallest composition and it can also be infinitely divided.

We can image that the newborn world is a single quantum, which is exactly same as present. Through continuous fission, it grew into the present world, and it will be divided forever.

Character 3: Quantum **MUST** decay.

If quantum does not decay, all things built up by it never grow old. It goes against the fact.

We define the quantum's N states. State 1 which is the best means birth, and state N which is the worst means death.

There is a conflict between decay and the law of identity. We can image that there is a mirror world, in which quantum states are completely opposite to our world. When the energy of decay meet the opposite one, they annihilate.

Character 4: Quantum **MUST** move.

If quantum does not move, then the world is still, which is against the fact.

There are no difference of speed or direction. The movement can be imagine as spin.

Character 5: There **MUST** be interaction between quanta.

If there is no interaction between quanta, all things built up by it can not touch each other. It goes against the fact.

There are two kinds of interaction. Attraction means becoming more similar between two quanta' states, and repulsion means becoming more different.

Quantum is a dividing, decaying, and rotating point and can change it's state by interaction.

2. Physical quantity

How does a dividing, decaying, and rotating point make the world. In order to explain all physical phenomena, several thought experiments about perception have been designed.

Experiment 1: Space.

Let's imagine that we're in nothingness. Everything is same, then we can't feel space, which is like snow blindness after a long time of walking in the snow. When we find something different around, then we will feel distance.

Quanta with same state doesn't make space, and they make a mass point. Two quanta with adjacent states make a quantum distance. Distance between any two quanta can be expressed as the sum of distance between every adjacent quanta.

How is space made? Division, decay and rotation of quantum are three dimensions of space.

When quantum A looks at another B with different state, it will find that B goes around to do uniform circular motion. It is three-dimensional image of state difference.

Experiment 2: Time.

Now we return to nothingness, and we can't feel time. When we find something is decaying around, then we feel the difference between before and after. This is the generation of time.

Quantum is always decaying and time is always passing.

The difference of quantum state is the same as decay, so time and distance are unified. The decaying time is equal to interaction time and rotation period.

Experiment 3: Mass.

Now we return to nothingness, and we can't feel mass. When we find something is gathering, we will feel the difference between more and less. This is the generation of mass.

Everything has mass, but a single quantum will not be noticed unless it stands with its group. So mass is relative. Photon is considered as no mass, because the mass is too small and meaningless.

Quanta with same state make a mass point. Mass point has no space but mass, and its density is infinite great.

When states of every two adjacent quanta are different, they make the smallest density which can be considered as vacuum.

Experiment 4: Force.

Now we return to nothingness, and we can't feel force. When we find something is moving, we will feel the difference between motion and static. This is the generation of force.

Displacement of quantum makes force. There is no force in a mass point. Decay of mass point can make force by state change. Force between two mass points can be made by rotation or interaction.

For any mass point, another one seems to be pulled by the centripetal force and do circle motion, which is the generation of gravity. So gravity always exists and shows attraction.

When states of two mass points change by interaction, they become near or far away by relative movement, which is the generation of electromagnetic force.

Experiment 5: Energy.

Now we return to nothingness, and we can't feel energy. When we find something is exchanging, we will feel the difference of hot and cold. This is the generation of energy.

Interaction of quantum makes energy. The one which gets energy becomes younger, and the other one becomes older. The sum of energy is fixed in interaction. Decay of quantum means a net loss of energy.

3. The shape of the world

A single quantum has no mass, space, or shape, and is just a point. But quanta have shape.

Two quanta can be considered as two rotating points. They go so fast and make a ring.

A string of quanta can be considered as a winding and rotating line, which is made of many points doing uniform circular motion. It spins so fast and makes a hollow cylinder. The length of the cylinder means the amount of quanta, the radius means the state difference of quanta, and the rotation angle difference means the sequence of quanta. This is the generation of DNA structure.

The spin axis of quantum is always along Division Dimension. But the world is also spinning, the spin axis of a small string can only point to a larger one nearby, because the larger one looks like the whole world. This can be called Mass Effect.

When there is no larger one around, a quanta string spins in all directions and makes a ball. For our human, the solar system looks like several small balls surrounding a big ball. But in a much larger scale, it seems to be a ball made up of several layers.

When there is a larger one around, a quanta strings is not a ball but a bar which always points to the larger one.

Points, rings, lines, cylinders, bars, balls and their combinations make up the world.

4. Conclusion

A point without any physical difference makes space, time, mass, force, energy and other physical quantities by division, decay and rotation. It makes all things in the world by interaction and combination.

This paper is completely based on logic reasoning. I am only responsible for my logical reasoning process.

This paper will end with a logical reasoning of necessary and sufficient.

IF IT MUST BE, AND IT CAN BE, SO IT IS.