MiTiempo

What the time is - Summary

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Features of time

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< Definition of the time >

1. **Energy** is vibration in multiple dimensions.
2. **Space** (of universe) is the area where energy is distributed.
3. Define the "***tracing dimension***" as a dimension, by variance of which a value-change (movement) of the resting other dimensions is expressed.
4. In order for a dimension to work as a tracing dimension, any single value of it should correspond to a single value of any resting dimension for a movement.
5. Define the "***imaginary order of freedom***" as that there is no freedom of selecting a value, and furthermore the value is not a constant but moving in a single direction (increase or decrease).
6. A dimension showing the imaginary order of freedom can act as an alternative tracing dimension.
7. **Time** is a dimension to trace values in space dimensions.

< 4D spherical model of the universe >

8. The energy of the initial cosmos was vibration in multiple dimensions. In order to describe it as vibration, a tracing dimension is essential. The dimension showing the longest cycle in relative value change can work as a tracing dimension to express value-changes (movements) of the all other dimensions. Define the tracing dimension as the "***Original time***".

9. The initial energy separated to two universes (***Giant separation***), which have opposite energy circulations in two planes in 4D space. The energy, distributed in 3D surface of a 4D sphere, turned to expand at the **Big Bang** (***4D spherical universe***).

10. Vibrations in the hidden dimensions render energy to the space. Refer the intrinsic space energy to as the "***Space energy***" or "***Spacia***".

11. A vibration of the Space energy vests additional energy "***Apparent energy***", which is our observable energy in the 3D space as light or a quantum particle.

12. ***Fundamental force*** works between energy pieces based on momentums. The apparent energy is circulating in two orthogonal planes in 4D space. A local piece of energy receives the fundamental force with the whole circumference, and results in a centripetal force in total. In the tangential directions (all directions of 3D space) the force is set off and becomes zero in total. Furthermore, the Space energy is the medium of any observable energy in 3D space. Therefore, we cannot detect an interaction with the Space energy.

13. The radius of the 4D sphere of the cosmic energy (space energy + apparent energy) exhibits the imaginary order of freedom when traced by the Original time. Therefore, it can be a new tracing dimension to trace a movement in the 3D space. Refer it to as the "***Observed Time***".

14. The expansion speed of the universe by the Original time decreases due to the intra-circulation interaction of the fundamental force and then will turn to shrink. By the Observed Time (4D sphere radius), the 3D space of universe expands at a constant speed.

< Common time >

15. Tracing a single object (energy) targets only a single point where its space location and the time cross each other. Each place of 3D space has its own distinctive radius of a 4D vector. However, because the absolute value of the radius is common at any location, the Observed Time, if taken as the absolute value radius, can work as a common time for all locations of 3D space. Although a movement is a change of location, we can trace it by a common time if we use the Observed Time.

16. The cosmic energy is located only at a single point of time whereas it spreads out in a tremendously huge area of 3D space. 3D surface of a 4D sphere is a potential geometry giving such a distribution.

17. The single point of the time dimension, where the cosmic energy is located, is the present. The time exists only at the present. The past is a record of past existing at the present, and the future is an expectation on what to happen in future existing at the present.

18. Because time duration of measuring a movement in 3D space is extremely short compared with the time scale of the cosmic expansion, we can regard the expansion speed of the radius of universe by the Original time be constant. Therefore, the Original time and the Observed Time are in proportional, and it is essentially the same tracing by either one only associated with difference in unit.

19. The Observed Time is the only common tracing dimension for any locations in the space.

< Measuring a movement >

20. Tracing a movement primarily takes place at a single point both in time and in space.

21. For measuring a movement, it is necessary to record respective positions of space at individual time points (***Chronological recording***). By recording measured values successively, we can measure a movement via comparing the current one with past values remaining at present.

22. We cannot directly trace a movement because an object and its observer are different in the location. We indirectly trace it by measuring position information of an object using a device (***Remote tracing***).

23. We recognize a movement as follows: light from an object passes through the eyes, transforms to an electric signal, and is recorded in the brain. Chronological record in the brain can work as an alternative tracing dimension because it has the imaginary order of freedom. Tentatively call the short-term recording, by which we recognize senses such as sight, as the "***Brain time***".

24. The information recognized and short-termly recorded by the brain shall be stored as a memory in a different region of the brain. Call the long-term time recognition by memories as the "***Memory time***". We feel time passage by lining up pieces of memory, in which loss of memory pieces and misrecognition of order of pieces increase over time.

25. Not only in case of human senses, are all measurements performed by Remote tracing and Chronological recording using a measuring device.

< Common measuring time and the clock >

26. Individual observers recognize their own time passage. However, each one cannot recognize its correlation with the Observed Time, which is a common tracing dimension to all observers.

27. Should take a movement, which varies at a uniform speed by the Observed Time, as a standard, each observer can correlate its time passage with movement of the standard. Therefore, such a standard can work as a common measuring time.

28. What exhibits this kind of common measuring time is the **clock**. By connecting plural clocks, we can recognize common time passage.

29. Movement of light for one cycle can be a common measuring time since it is a uniform motion by the Observed Time. Therefore, we can assign a period of vibration of a specific light as a common standard of time interval. The current standard time interval is "one second", which is defined as the duration of a certain number periods of the radiation corresponding to the transition between the two energy levels of the cesium 133 atom.