

Significance of Time Dimension

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ABSTRACT: The consequences of the fact that only one time-dimension exists, have been discussed. It has been stressed that the time dimension is a primary dimension. Next it has been suggested that the space may be woven not only from loops but from the threads too. One has tried to answer how to discover the additional dimensions.

1. Time dimension

Even if the time is given as the quaternion, then there is only one real scalar coordinate. The scalar conserves typically time character, although the time expressed by the 2^n -nion describes better the character of time as a generalized field of charges and currents [1]. Only one time dimension exists in the space-time, because it is described by the structure which assigns each point the quaternion (generally 2^n -nion or more generally $m2^n$ -nion [2]). In each such a number there exist only one scalar component and 2^n-1 (or $m2^n-1$) vector component.

The scalar component of space-time existed first and we had the pre-time. Only then the next components have appeared. This pre-time wasn't the time in this sense in which it has been understood now. Particularly it wasn't the generalized field of charges and currents, because they have the space-time distribution and there wasn't any space-time understood like today when the pre-time existed.

The appearance of the additional space dimensions may be compared with the putting up an umbrella. At the beginning there was a handle and the perpendicular wires appeared next.



Fig. 1

The dimensions exist which are the unclosed loop. The space can be woven from loops but it can be woven from threads too. (figure 2)

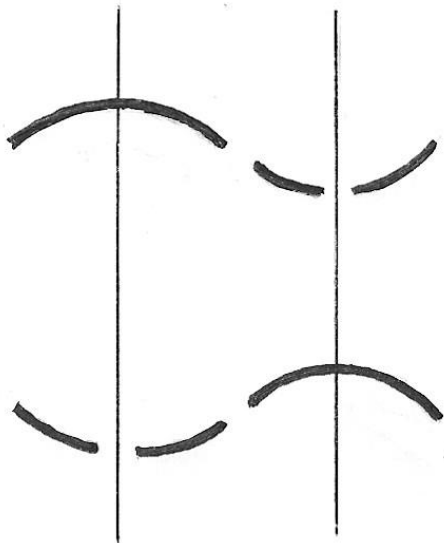


Fig. 2

2. Detection of additional dimensions.

The additional dimensions can be detected analyzing the motion of light. It is known [3,4] that the light moves with the velocity oscillating around the velocity $v = c$ because of the interaction with complex mass particles. These particles move in additional perpendicular complex dimensions.

In purpose to discover the additional dimensions it is worth investigating the velocity of light between two mirrors which are placed in the microscopic or even quantum distances.

References:

- [1] Z. Morawski, "Approach to Nature of Time", this website
- [2] Z. Morawski, "Number of Dimensions of the Universe", this website
- [3] R. P. Feynman, "Strange Theory of Light and Matter"
- [4] Z. Morawski, "Implications of Complex Mass", this website