

Once More about Dimensions

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ABSTRACT: At the beginning one has given an intuiting proof of an existence of the ether. Next, the argument has been presented that the number of dimensions may be bigger than Goldstone's number $D=26$. Next, one has explained why we can't see and can't feel the presence of other dimensions, although they are dimensions of the standard value. In the end, one has stated that the equivalence of the sources of interactions is enough to the unification of interactions, although the great significance of the results by A. Ashtekar, M. J. Duff, S. W. Hawking and E. Witten hasn't been shaken.

What is curved and has more than one dimension, must have an inside structure. This obvious intuitive fact is the evidence of the existence of the Dirac unempty vacuum, so – directly speaking – of the ether.

There aren't the ghosts for $D+N \leq 26$. But it isn't necessary to get rid of the ghosts at any price [1,2]. So $N = 0$ and $D = 26$ (the limitary condition) needn't to be the limit of the number of dimensions.

So it may be

$$D > 26 \quad [3].$$

We can't see and can't feel the presence of other dimensions than four Einstein's dimensions not because those dimensions are rolled a bit or curved in another way. But first of all, we are an analogy of the flat (two-dimensional) animals which don't see the third dimension.

Naturally, the considerations by A. Ashtekar, M. J. Duff, E. Witten and other physicists are true and far-reaching but the physical equiponderance of the sources of interactions, expressed by the de Broglie – Maxwell formula (4)

$$m = \alpha |Q|$$

is enough to the unification of interactions.

Nevertheless, I am convinced that such objects like strings, membranes or loops really exist and the space-times more than four-dimensional exist too.

References:

- [1] E. Cremmer, J. Scherk, Nuclear Physics B 103 (1976), p. 399-425
- [2] Z. Morawski, “Ghosts”, this website
- [3] Z. Morawski, “Number of Dimensions of the Universe”, this website
- [4] Z. Morawski, “Attempt at Unification of Interactions and Quantization of Gravitation”, this website