Raising the vector space W to the irrational power N.

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Abstract

At the beginning the vector space A is constructed from infinite number of tensor cofactors. With the help of (viXra.org 1402.0167) these tensor cofactors are constructed from rational powers of vector space W. Then these powers are summed and the sum is denoted as N. And it turns out that A is W raised to the power N. The N turned out to be any real number (rational or irrational).

How to raise the vector space into the rational power M/L is described in (viXra.org 1402.0167). Now this will help us. Let us consider the following vector space A :

$$A = \mathbf{K} \otimes_3 V \otimes_2 V \otimes_1 V \otimes_0 V \otimes_{-1} V \otimes_{-2} V \otimes_{-3} V \otimes \mathbf{K} \qquad (1)$$

Every tensor cofactor ${}_aV$ in this product space defines so :

$${}_aV = W^{(n_a \cdot 2^a)} \qquad (2)$$

Numbers n_a can be 1 or 0. If $n_a = 0$ then $W^0 = I$ (3)

Here we introduce I – unit vector space. This space is 1-dimensional. Let $\vec{e}_1$ be the basis of I.

Then $(\vec{e}_1, \vec{e}_1) = 1$ (4) and $\vec{e}_1 \times \vec{e}_1 = \vec{e}_1$ (5)

Now we have : $A = W^N$ (6)

Where $N = \sum_{a=-\infty}^{a=\infty} n_a \cdot 2^a$ (7)

N – binary form of any irrational (and also any rational) number.

In order to number a can go into minus infinity, the dimension of W must be infinite.

And now we have the definition of raising infinite dimension vector space W in any irrational (and rational) power N.

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