

An attempt to multiply the vectors

Let V be Euclidean vector space with scalar product (x, y) . Consider Clifford algebra over V with quadratic form $Q(\mathbf{x}) = -(\mathbf{x}, \mathbf{x})$.

Let us try to mimic the multiplication, then we will criticise the construction:

To every vector $\mathbf{x} \in V$ assign rotation $L_{\mathbf{x}}$, which is rotation around axis directed along \mathbf{x} on the angle π . To formal product

$$\mathbf{x}_1 \otimes \mathbf{x}_2 \dots \mathbf{x}_n$$

we assign the element of orthogonal group

$$SO(V) \ni P = L_{\mathbf{x}_1} L_{\mathbf{x}_2} \dots L_{\mathbf{x}_{n-1}} L_{\mathbf{x}_n}$$

It seems that we reconstruct in this way the Clifford algebra? NO!

- a) this is a map on image of group *pin* in orthogonal group (see the blog on 18 July)
- b) this map destroys parity (see the blog 21isitmistake.pdf)
- c) we cannot consider summation??