Introduction

We will follow the approach in which spinors are constructed in terms of nilpotents formed from the spacetime basis vectors represented as generators of the Clifford algebra $Cl(1,3)$.

$$\gamma_a \cdot \gamma_b \equiv \tfrac{1}{2}(\gamma_a \gamma_b + \gamma_b \gamma_a) = \eta_{ab}$$

$$\gamma_a \wedge \gamma_b \equiv \tfrac{1}{2}(\gamma_a \gamma_b - \gamma_b \gamma_a)$$

The inner, symmetric, product of basis vectors γ_a gives the metric, η_{ab} .

The outer, antisymmetric, product of basis vectors gives the basis bivector.

Generic Clifford number

$$\Phi = \phi^A \gamma_A$$

where

$$\gamma_A \equiv \gamma_{a_1 a_2 \dots a_r} \equiv \gamma_{a_1} \wedge \gamma_{a_2} \wedge \dots \wedge \gamma_{a_r}$$

$$r = 0, 1, 2, 3, 4$$

Spinors are particular Clifford numbers

$$\Psi = \psi^\alpha \xi_\alpha$$

where ξ_α are spinor basis elements, composed from γ_A .

We will consider transformation properties of Clifford numbers.