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Editoral

Mobius Strip as Geometrical İnterpretation of Spinor

Ayhan Yüzübenli*

Ph.D. Physicist, TENMAK Turkish Energy Nuclear Mining Research Authority, İstanbul, Turkey

***Corresponding Author:** Ayhan Yüzübenli, Ph.D. Physicist, TENMAK Turkish Energy Nuclear Mining Research Authority, İstanbul, Turkey.

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There exists huge literature, definitions about spinors. They are highly applied in theoretical physics, in mathematics. One of the basic definition is that the minimal left ideals of Clifford algebra are called spinors. Roger Penrose defines it a mathematical object goes into itself with minus sign after revolution, his book "the road to reality". There are so many topological, algebraic books, applications. And despite all there is no clear visual interpretation of spinor.

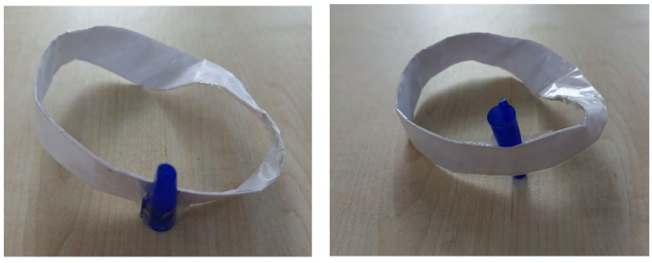

Figure 1: Let a vector X be attached to a point of Mobius strip, and it moves to left or right without changing its orientation. After 2π revolution the vector X goes to - X vector. This is the definition of spinor.

For a moment let us imagine and think of Mobius strip. It is very well known topological object. In all basic topology, algebra courses it is represented as very basic example. It has only one surface. If any vector X is attached to a Mobius strip, and it moves to lef tor right without changing its orientation. After a complete revolution, the vector X goes to - X vector. This is the definition of spinor. And the vector X goes to itself after revolution.

Indeed it is possible to write down so many books, someone may find easily them and study. From Dirac, Penrose, Hawking, and applications in quantum mechanics, relativity etc.