Report

A Skewed Relativity

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Abstract

A new skewed relativity is discussed in this brief report.

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It was pointed out by Ezra Newman in the sixties that an imaginary shift of the coordinate in purely Classical equations leads to the purely Quantum Mechanical gyromagnetic ratio $g = 2$. Newman puzzled about it for decades and finally could not explain this enigmatic finding. The herein author has been working on this for a few decades and has concluded the following: 1. The explanation lies at very small scales where the square of the Compton scale is retained and 2. When a complex coordinate is generalized to three dimensions, as Sachs had pointed out we end up with a four dimensional space, which moreover has a Minkowski invariant thrown in.

On a further analysis the author noted that in this quarternionic description the spacetime is rather different to the simple Minkowski spacetime. To put it pictorially the former resembles the curly spiral binding while the latter is more like the smooth paper. The author also concluded that this was the reason why despite a century of efforts Einsteins gravitation could not be reconciled with Particle Physics. This in fact was predicted by Wolfgang Pauli decades ago.

Moving on we consider the second order representation of the quarternions in terms of the 2×2 Pauli matrices. This time the line element will be given by $\sigma_(i)x^i$. We get again an invariant but unlike in the 4×4 matrix consideration, this time there is no invariance under the reflection symmetry. It is a new skewed relativity. Nevertheless there are different situations like neutrinos, noncommutative geometry and two dimensional surfaces like Graphene where this "new" relativity applies.

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