ISSN (Online): 2455-3662
EPRA International Journal of Multidisciplinary Research (IJMR) - Peer Reviewed Journal
Volume: 9| Issue: 4| April 2023|| Journal DOI: 10.36713/epra2013 || SJIF Impact Factor 2023: 8.224 || ISI Value: 1.188

A TRIVIALLY PROPOSED FORMALISM OF MONSTROUS* WAY OF UNIFICATION OF RELATIVITY AND QUANTUM PHYSICS USING 11– HYPERDIMENSIONAL HYPERCOMPLEX NUMBER SYSTEM UPTO DEKACADINION BASED ON THE ALGEBRAIC NORM OF THE GENERALIZED CAYLEY–DICKSON CONSTRUCTION

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Article DOI: https://doi.org/10.36713/epra13026
DOI No: 10.36713/epra13026

ABSTRACT
From 1 to Monocadinion and extending till Dekacadinion a trivial wayout is presented for a unified approach of relativity and quantum mechanics in a trivial formulation using the Cayley – Dickson constructions in all the algebraic, modified and generalized forms subject to further research.

KEYWORDS: ***Hyperdimensions – Hypercomplex – Zorn Ring – Dekacadinion***

FORMULATIONS

The Cayley–Dickson construction, starting from the real numbers ℝ generates the composition algebras of the complex numbers ℂ, the quaternions ℍ, the octonions 𝕆 and so on… where the construction itself defines a new algebra as a Cartesian product of an algebra with itself, with multiplication defined in a specific way having an involution known as conjugation.

There can also be the split–complex numbers being ring – isomorphic R_{iso} resulting in the split–complex approach of Cayley–Dickson as split-quaternions and then the split-octonions where in further terms for all the concerned functions and operators of C-D constructions the symmetry approach can be given as disappearance in below - number wise forms of[1-5,9,10],

1. Losing order
2. Commutativity of multiplication
3. Associativity of multiplication
4. Alternativity
    a. In the ordering,
        i. Complex numbers lose the ordering of the reals
        ii. Quaternions are multiplicative non - commutative
        iii. Octonions being associative while alternative (for vulnerability conditions)
        iv. Sedenions non – alternative but power associative with a properly defined lowest degree polynomials

$$forming - \begin{cases} 2 \times 2 \text{ real matrices } \Rightarrow \text{split} - \text{quaternions for an associative algebra isomorphim} \\ \text{Zorn}(R) \Rightarrow \text{split} - \text{octonions for } R_{iso} \text{ formmalisms} \\ and\ so\ on \ldots \end{cases} \qquad Eq(A)$$

The chain takes place in orders of[4-8]:

- Complex = Monocadinion (2^1 = 2 dimensions)
- Quaternion = Dicadinion (2^2 = 4 dimensions)
- Octonion = Tricadinion (2^3 = 8 dimensions)
- Sedenion = Tetracadinion (2^4 = 16 dimensions)
- Trigintaduonion = Pentacadinion (2^5 = 32 dimensions)
- Sexagintaquatronion = Hexacadinion (2^6 = 64 dimensions)

- Centumduodetrigintanion = Heptacadinion (2^7 = 128 dimensions)
- Ducentiquinquagintasexion = Octocadinion (2^8 = 256 dimensions
- Ennecadinion (2^9 = 512 dimensions)
- Dekacadinion (2^{10} = 1024 dimensions)
- Hendekacadinion (2^{11} = 2048 dimensions)
- Dodekacadinion (2^{12} = 4096 dimensions)
- Tridekacadinion (2^{13} = 8192 dimensions)
- ...and so on.

Thus, it is easy to conclude the relativistic and Quantum Physics unification (in a trivial way) of 11 hyperdimenions and hypercomplexes taking gravity as 1D, time as 2D, space-time as 4D, magnetism as 8D, electricity as 16D, weak nuclear force as 32D, strong nuclear force as 64D, space-time-light as 1024D while each of the 11 hyperdimensions are not all same size[NOTE]. While further research is needed to justify this.

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NOTE: The 2 – multiplier form is used to double the previous dim through a (trivial) split formalism of the later dim to the former dim by $/_2$ as depicted for $(numbers\ in\ eq(A))$ which would be justified properly via further research.

[*]Monster group is not concerned and is not to be confused with these constructions.
The authors have no conflict of interest related to this paper.