Quantum theories

A quest for an epistemic reset in higher dimensional space

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Brilliant mathematical concepts describe physical realities on all different levels, but classical mechanics, relativity, electrodynamics and quantum mechanics are epistemologically separated by different mathematical notations and space concepts while QM resides in 4-dimensional curved Minkowski space-time. QM requires at least 12 dimensions for one particle in phase-space.

Let’s assume, the diverging concepts do not require another formula but rather an epistemic reset which enables reinterpretations of physical phenomena from a uniting point of view.

Here is the suggested visualization model ans us to unite features of different concepts such as Riemannian manifolds and Hilbert spaces, as a discrete dynamic hyper-Euclidean vector space. It is derived from the geometry of the 5-dimensional space based on the 3D representations of the Penrose kites and darts tiling, which exhibits the principles of the Poincaré homology sphere. This is the space which works like a machine as required by group theory and may serve as a toy model for the universe as suggested by Y. S. Poisson.

The poster presents some cosmological features such as Lienz quantum spheres in the 83 Kepler model on the large scale as well as for the depiction of ‘time’. On the other hand it shows on the quantum level how the same 4 symplectic structures which are constituting the higher-dimensional space, are serving as ur-spatial reassembly of the Lorentz group in spin foam models for quantum gravity.

Maybe finally only the assumption of a higher-dimensional space-time reality is needed.

The advantage of 5D geometries for describing physical phenomena was a.o. strongly recommended by Y. Poisson and L. de Broglie. In his letter of continuous transformations the sphere is ‘sphaira’ in 5-dimensions, Ehren. Klein’s Klein projective set of a 5-Dimensional projective space 3+3 - with its 3-fold symmetry which reflects the symmetry of the eptah-dodecahedron. The recently developed hyper-Euclidean geometry derived from Poincaré space (2 known as a 2D slice of 5-dimensional space) may be useful in testing algebraic structures variously as a model of 5D-architect geometry which provides an aesthetic access to symmetries. It may be regarded as an extension of Mackay’s generalized crystallography - a universal crystallization by means of a fundamental polyhedron which confines Poincaré’s theory of homology sphere homomorphically to a 3-sphere, or triangle cradled by the white run of becoming in Plato’s ideal world. Following Ehren. Klein’s idea to regard the world as relations and interaction of spaces - the visualizations below may provide new hints on how Relativity theory with the concept of the simultaneity of events in SRT and AMR’s gravity in a ‘curved space-time’ can be embedded into this higher-dimensional framework which exhibits the profound particularities and characteristics of phase-space in QM.

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Quantum mechanics is a consistent with special relativity on a operational level is expected to lead at an atomic level to relativity, the dynamic space-time models by means of the causal behavior between atom -in atom wave phenomena, quantum mechanical predictions combined with relativity, predictions do not satisfy the same causal reality patterns as the results of predictions of a relativistic physics. It is because of that, that the principle of unitariness and causality are different. Therefore, to understand the symmetry of the electromagnetic field and the gravitational field is possible if one understands the quantum theory of the electron.

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One immediate indication shows us that the classification of algebraic surfaces and the theory of the birational transformations are intimately connected with the classification of real closed hypersurfaces in the space of five dimensions from the point of view of Analysis situs.

To fathom the problem of matter and its atomic structure, it is without any doubt necessary to place systematically a view point from the Universe with 5-dimensions which seems more fruitful then the one of Mr. Weyl’s... 

Planetary systems - spherical in 4D

Electromagnetism & ‘Space-Time’


As a final reference we refer to the current developments in the field of unified space-time theories, which exhibit a discrete group of symmetries, which are all derived from two intersecting triangles to recognize the same dimensionality and forms the noncommutative-geometric space-time. This include also the discovery of the superconformal and discrete symmetries, the homogeneity of the natural numbers, the construction of the prime numbers and magnetic charges, which are all represented by the tiling space-time C, thus, therefore from a geometrical point of view it’s good to state that it’s possible to fathom the nature of the universe through the unitary framework.

...I hold that in the physical world nothing else takes place but this variety of (the curvature of space)...

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While quantum mechanical predictions comply with relativity, objective properties do not satisfy the same causal reality patterns as the results of predictions of a relativistic physics. It is because of that, that the principle of unitarity and causality are different. Therefore, to understand the symmetry of the electromagnetic field and the gravitational field is possible if one understands the quantum theory of the electron. The principle of GPS a connection of arbitray points in a pseudo-Euclidean 4-dimensional space-time is a combination of the separation of space and time. In the framework of general relativity the Maxwell equations or the Hilbert-Einstein field equations have the same form on the Planck scale.

The "entangled epitahedra" picture: a 3D animation depicts two polyhedra in a Boolean intersection, while their faces are in rotation such that the dodecahedron becomes spherical.

The “principle of counter-rotation” of pentagons as demonstrated by H. Strobel using Poinsot’s theorem, which proves that the 12 pentagon’s faces and the circular decoration which becomes a complex knot of circles; 12 epitahedra forming the infinite 5-dimensional space, which works like a machine.

C) ‘An immediate indication shows us that the classification of algebraic surfaces and the theory of the birational transformations are intimately connected with the classification of real closed hypersurfaces in the space of five dimensions from the point of view of Analysis situs.

...It cannot help striking me that this extension of Algebra ought to lead to a further extension in the solution of three dimensions; & that again perhaps to a further extension in the solution of four dimensions;...’

..."It is wrong always, everywhere, and for anyone, to believe anything upon insufficient evidence.”...