# « A New World »

Gudrun Kalmbach H.E.

Corresponding author: * Gudrun Kalmbach H.E. **Tel.: ******* Email:** mint-01@maxi-dsl.de	**Received Date:** Aug 24, 2020 **Published Date:** Sept 03, 2020

Two huge massive systems P,Q move on their world lines in opposite direction. At a certain time they become parallel. A Higgs boson can set on the interval between their two centers a common barycenter according to the lever law. Gravity sets spiralic attracting new world lines for P,Q.

Chatting: Are there humans in Q? No, they had too many on earth and died out. Q answered: it will now take a long time until in a new world humans can evolve. Before Planck time we will have an evolution unknown to their physics until 2020 when we collide.
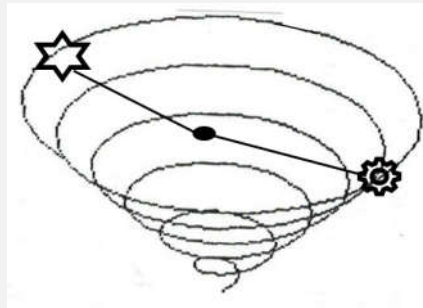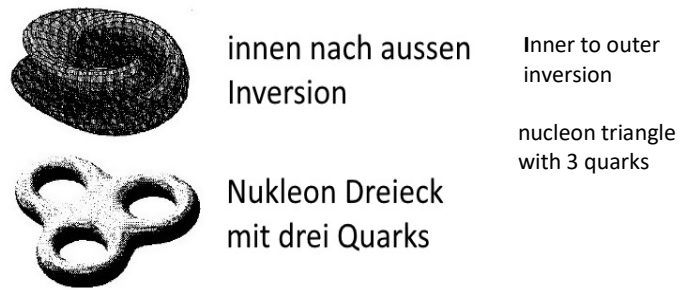
The Collision

Tiny is the Schwarzschild radius Rs of a generated Higgs boson W. It carries the gravitational constant for its rescaled mass. *How is this mass computed?* The dark matter inside Rs has a nucleon structure with 1-dimensional quarks, three of them red-green-blue whirls are joined at a central singularity of W. Mass for quarks is replaced by a common electrical and mass potential POT and is not measured with kg or Ampere in the universe. The Higgs boson has no equlibrium state and decays.

The complex inversion at a circle with radius Rs arises for radii where quarks inside W have length r' and outside length r with r'r = Rs². The gravitational GR constant G belongs to Rs and scales together with the constant c (electromagnetic waves EMI speed) mass. The POT energy of quarks bifurcates in two orthogonal hitting frequencies f in proportion 1:2. As new central retract of 3-dimensional quarks a lemniscate with two poles arises. This brezel of genus 2 has at its dipoles an electrical and a mass carrying measure in Ampere and kg. A generated *rgb*-graviton sets for a nucleon a tetrahedron configuration which has as symmetry the group S_4, permutations of four elements with order 24, three quark centers and one *rgb*-graviton center with a 3-dimensional spin-like orthogonal base.

innen nach aussen
Inversion

Inner to outer
inversion

nucleon triangle
with 3 quarks

Nukleon Dreieck
mit drei Quarks

After Inversion

Beside quarks a huge number of *rgb*-gravitons are generated. They reach speed of light and are emitted as the observed graviton waves in the universe. The *rgb*-gravitons are field quantums for gravity GR and observed nucleon whirls as superposition of neutral three color charges red-green-blue. Their geometry is spin-like, a base triple of pairwise orthogonal energy carrying vectors with the mass of a quark and its color charge added at the vectors ends. Color charge whirls are like magnetic field quantum whirls.
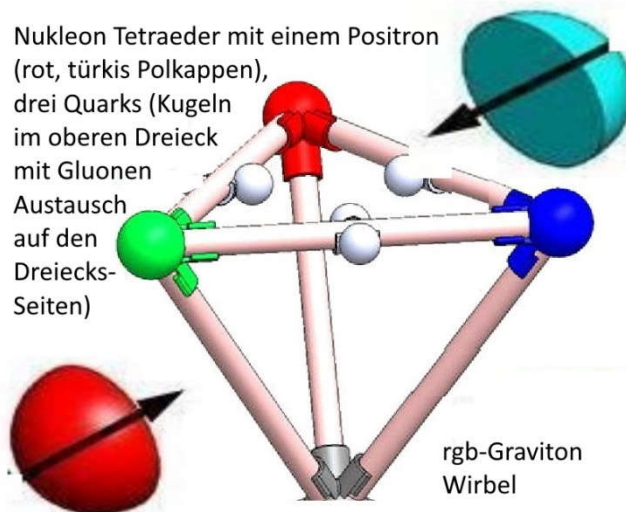
A color charge vector e_0 is leaning towards a cones axis and traces out in rotation the cones surface. In contrary to magnetic whirls there are six color charges where the conjugation operator C with order 2 of physics changes for the three rgb whirls the rotational orientation on the bounding circle of the whirl from cw clockwise to counterclockwise mpo. The length of e_0 is quantized as well as energy $E = hf$.

The discrete smallest unit is $|e_0| = h/4\pi$ for fermionic spins and color charge whirls, h the Planck constant. Multiples by non-negative integers are allowed. The compass (e_0, e_7) is a flat version of the conic whirl where a linear coordinate e_7 is stereographic closed by a point at infinity to the U(1) Kaluza-Klein circle for EMI.
Only one full winding in time of the rotating vectors endpoint on U(1) can be stored as energy $E = h$.
The EMI photons carry in inverse integer multiples this as their frequency f energy.

Explaining the figure: in a crystal chemical tetrahedron with symmetry S_4 are located at the bottom the center of the *rgb*-graviton, at the basis triangle on top the vertices r, g, b for the three quarks color charges, mass and forces. The polar caps are explained later on, here they are for the location of a protons positron on two opposite tetrahedral sides. For a neutron the caps are removed. The tetraedral geometry as a complex 2-dimensional space bubble in spacetime, bounded by a Riemannian sphere, is explained in an addendum.

Nukleon Tetraeder mit einem Positron
(rot, türkis Polkappen),
drei Quarks (Kugeln
im oberen Dreieck
mit Gluonen
Austausch
auf den
Dreiecks-
Seiten)

rgb-Graviton
Wirbel

Beside the conjugation operator, the commutative Klein group of order 4 is generated. The identity, C and parity P, time reversal T, both of order 2 are generated.

Extending space dimensions, a real numbers line is getting an orthogonal imaginary vector for generating an xy-plane and complex numbers $z = x + iy$, x,y real, $i^2 = 1$. (*A learning group of humans is shown which also studies the bifurcation. Next figure.*) For presenting the coordinates as operator transformations for vectors, the xy-plane bases are listed in form of 2x2-matrices where $x \cdot id$ has the rows (x 0), normed (1 0) as first row and (0 1) as second row. C has for $y \cdot \sigma_2$ (the second Pauli matrix) the normed first row (0 1) and second row (-1 0). Dipols of quarks have on a connecting interval a 2-dihedral D_2 (quark) symmetry C, P, T and identity id. C and T are reflections of D_2 and P is a 180 degree rotation. In space, P is a point reflection and associates to a point $p = (x,y,z)$ its negative point $-p = (-x,-y,-z)$.

In a biological Feigenbaum bifurcation S_4 (permutations of the four tetrahedron vertices)is factored by the normal CPT symmetry to the quark triangle 3-dihedral symmetry D_3 of nucleons. From POT are bifurcated the potential energies of electrical charge (red color charge EM(pot)) and of mass (turquoise color charge E(pot)), both having a ball expansion in space as geometry for b/r, b a real constant, r radius. Red bifurcates in magnetic force yellow and sets magnetic flow quantum whirls for a magnetic field. The electromagnetic EM units are generated and satisfy quantized $\Phi_0 = h/2e_0$ where e_0 in this equation is the electrical charge unit and Φ_0 the magnetic unit. As new quantum are generated phonons whirls with quantized volumes V green for accustics and temperature as fields. Inside a smalest phonon volume a Kelvin scaled amount of entropy energy E(heat) as temperature can be stored. Turquoise bifurcates in two accelerating forces or speeds, the kinetic (blue) energy und angular, rotation energy (magenta) for mometum and angular momentum of physical systems. Quarks D_3 symmetry belongs to the tiple E(pot), E(kin), E(rot) vectors and their strong SI rotor (*a video can be shown*) as representaion of D_3. The new world is complex 3-dimensional blown up (real 6-dimensional) for the strong interaction SI and its GellMann 8 gluons and octonian e_j coordinates. Three real coordinate are for space/volumes and spin coordinates (e_1 ,e_2 ,e_3) = (x,y,z) red, green, magenta. Time t and magnetism E(magn) have color charge yellow and coordinate e_4 . Mass is measured in kg (turquoise) with coordinate e_5 , frequencies in Hz or inverse seconds has blue as color charge and coordinate e_6 .

Dies ist die Feigenbaum
Energie Evolution zum
Elektrischen, Temperatur,
Rotationen, Magnetismus,
Masse, Frequenzen.
    - Hitze Chaos am unteren Ende.

After the Factorising and Bifurcation

A plasma of quark-gluons is generated in nucleons and driven by a 6 roll SI mill. SI bifurcates from the last four generated energies E(heat,magn,kin,rot). The weak interaction with three WI bosons bifurcates from GR and SI. The geometrical WI invariants are leptons, electrons, neutrinos etc., also (emitted) EMI photons are generated and observed. A heat chaos makes after that an inflatory expansion of space in time for the new world. There are for the 6 roll mill three driving forces for the universes energies: [POT for EM, GR], [for heat and rotations SI] and [WI for kinetic and magnetic energies]. They allow in rotational energy exchanges integrations of forces to speeds, potentials, heat or magnetic induction.

An additional octonian vector momentum e_0 as cordinate is a compass needle and sets measuring units for energy coordinates: kg on an octonian mass coordinate e_5 , Hz or inverse seconds on a frequency coordinate e_6 , Wb for magnetism on e_4 together with a time measuring chronon in seconds as measure. The two momenta have mixed units measures. The Einstein energy $E = hf$, f frequency, h the Planck constant, is quantised. Smaller energy units as resaceld and scaled (by natural numbers) of $h/4\pi$ are not existing. This can be interpreted as one full winding about a circle. Only full windings are stored as quantized energy. For this the compass (the tool compass is shown) with e_0 needle is for a disks bounding symmetrie U(1) of the fourth basic electromagnetic force EMI - as last, seventh octonian coordinate –added to the six energy coordinates. Observed is the new EMI force however much later in the universes development when fusion for atoms can send out EMI waves, light.

(Menschen sehen sich mit astronomischen Geräten den Sternhimmel an.)

(A man observes with an astornomic telescop the sky.)

Speeds and Waves

The WI and SI (rotor) dynamics before the EMI evolution through atoms has no exponential wave function $\exp(i\omega t + xk)$. The vector momentum sets by the compass with an e_0 needle and bounding circle U(1) a local harmonic oscillation $\psi(t) = \exp(i\omega t)$, i the imaginary unit with t time, ω angular frequency. Observable in space is its real cosinus oscillation. Imaginary values are mostly observable by differentation of exp since $i^2 = -1$ is real. Systems and waves come in (wave) packages. For them a common group speed is necessary with which they move in space. The speed of light is an upper bound, set by the vector momentum e_0 in the new world. There is an inversion from the inner of a pinched torus than shown above for dark energy Horn torus. The last one as Higgs boson has a singularity at its center, the dark energy has a contracted cross secting circle of a torus as singular point for a Minkowski light cone which is closed at projective

Sternhimmel

infinity by a circle. The upper bound c for speeds in the universe belongs to this inversion. Higgs bosons set in different local (spherical) SI and (Euclidean) WI coordinate systems mass new, using also the Einstein formula $mc^2 = hf$. In case of mass carrying systems, mass is Higgs rescaled for this through the Minkowski relativistic factor, For a nucleons mass 10 percent comes from quarks mass, 90 percent is from systems local inverted frequencies as speeds v, inner speeds, interactions *(a video pulsation of the nucleon is shown and the demonstrating tool deuteron in the Tool bag).*

(Eine Maus bläht sich pulsierend vor einer Katze zu ihrer dreifachen Größe auf, um nicht verschluckt und losgelassen zu werden. Dann rennt sie weg.)

(A mous pulsates by heart to 3 times its size for not being eaten by the cat and it runs away.)

In computations of WI matter waves and their particle character (belonging to SI), the octonian e_0 vector points along two different rays with an angle θ for the cosine rescaling of mass and with

sin θ = v/c. The variable Minkowski speed v adds to the e_0 measuring units the rescaling by cos θ.

For a common group speed v of a matter wave the new momentum is p = mv with m = $m_0/\cos θ$, m_0 the mass at rest of its systems parts. (See also the figures for fusion below.) For dark energy inside a pinched torus, speeds v' are higher than c by inversion v'v = c².

(Quasi-)Particles, Whirls, Field Quantums.

MINT-Wigris adds to the physics wave-particle duality the conic whirls of energies and metrics. In the small range they arise as a rotating energy carrying vector which traces out the cones surface. For instance magnetic flow quantums are such whirls, color charge whirls and their superpositions like *rgb*-gravitons, the spin as angular eigen-momentum of particles and many quasiparticles. In an environment they use often a projective nonorientable Moebius strip: after a 360 degree winding on the strip their normal orientation is changed by 180 degree. This is used for the energy exchange of nucleons, deuteron, atomic kernels with their environment *(the hedgehog figure is shown in action)*. Energy is emitted or absorbed.

To this belongs integrations of forces to potentials or speeds and also the measuring triples (frames) *GF* of Gleason operators. They arise as seven GF for SI and seven for octonians. Some of them are briefly described and a table is added for them in an addendum which can be extended. WI has only the spin GF triple (x,y,z). Tools can be shown. The octonian coordinate indices are used for an abbreviation: 123 are (x,y,z) space/spin coordinates, 145 is the electrical EM triple (EM charge 1 loop rotating with induction in a crossing magnet field 4), 167 (light, EMI 7), 246 temperatur (entropy 2 in volums with pressure on the surface), 257 (sets Higgs mass and barycenters 5 for systems in space), 347 rotations (with axes 3 and orbits about a center), 356 SI rotor and others... Mostly quasiparticles transport energies in matter or between matter systems. Field quantums do the same and generate fields and energy distributions in space.

(Beispiele werden gezeigt, magnetisches Feld, Potentialfelder, verschiedene Bahnkurven im Raum, Bewegungen von Quasiteilchen laut ihrer Liste.) (Many examples are shown.)
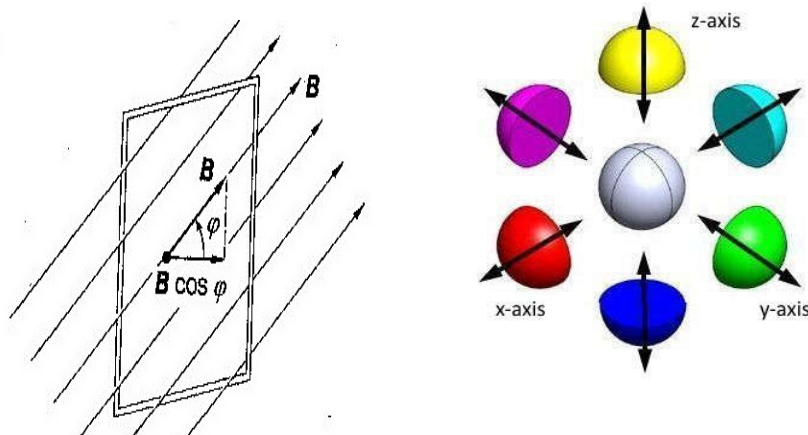
magnetische Feldlinien durch einen Stromkreis, hedgehog Polkappen zum Energieaustausch von Atomen mit der Umgebung

magnetic field lines through a rotating EM loop current, hedgehog polar caps for the energy exchange of local systems like atoms with their environment

Physics and its Rules

After the Planck numbers are generated, physical rules apply. The four or six constants listed in physics books are for h and energy, for c and light/EMI, the gravitational Rs constant, Kelvin for heat and the two electrical constants e_0, μ_0. The measuring unit vectors are set by the compass needle (no confusion with the former constant!) e_0.

A new world exists.

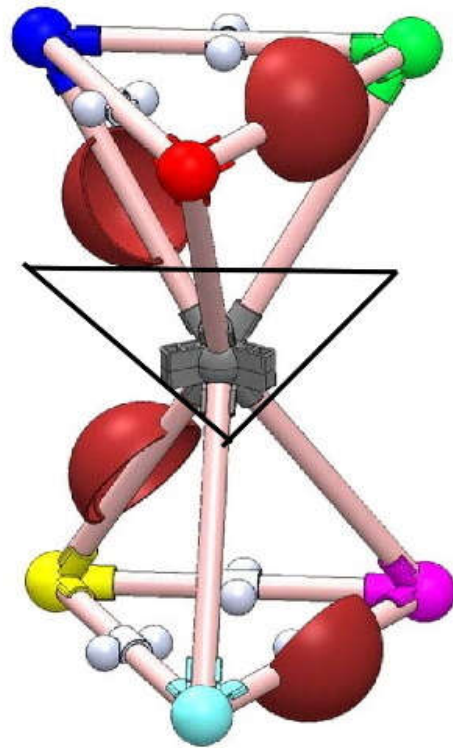Fusion occurs in generated stars. For this the MINT-Wigris model put two protons with their

rgb-graviton tip in the position of a double light cone such that the two quark triangles are parallel (*fusion figure at left*). It is a first projection of the 3 complex planes 15,23,46 of SI into space where the energies red-turquoise, green-magenta, blue-yellow are orthogonal vectors, generating their projected planes in space. A proton is slowly emitting a positron, a neutrino and some energies when turning its upper (double cone) position on a Moebius strip by 180 degrees. The central projection of the two triangles is then a hexagon. An isospin exchange in time pairs the two nucleon states with the positron (at a proton) and a neutrino (at a neutron) exchanging their lower or upper location in deuteron. In this position the former three planes are now three lines for the WI/EM space axes x, y, z with paired u-,d-quarks and the Heisenberg uncertainties arise this way (position-momentum, angle-angular momentum, time-energy). Heisenberg missed the vector momentum e_0 of MINT-Wigris for the upper speed bound c. For this MINT-Wigris adds the octonian 07 compass coordinates. Coordinates are local, their measuring vector units are special relativistic rescaled for an observer at rest in case no gravitational interaction binds the two systems together. For a gravitational interaction between them the general relativistic rescaling applies.

(Watch a human at rest observing a train in motion, watch the MINT-Wigris deuteron model in the Tool bag.)
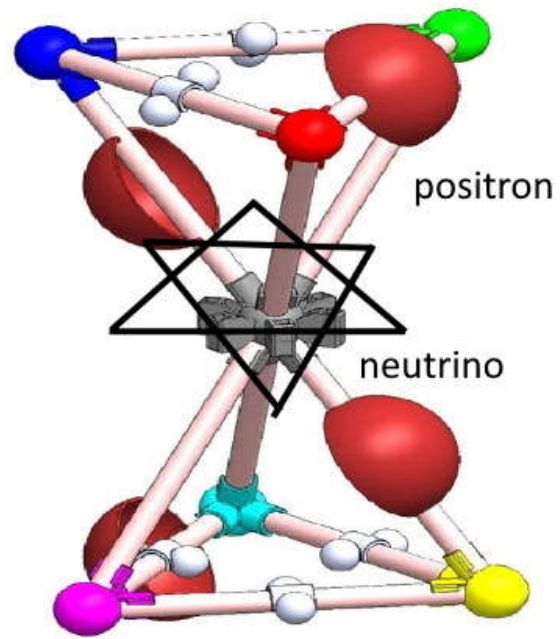
(Ein Mensch steht ruhig wartend vor einem fahrenden Zug. Ein anderer Mensch misst über eine Zentralprojektion der Gravitation zwei Abstandswerte in einer Ebene, der Quotient ist nicht linear und projektiv berechnet. Der Mensch schreibt dies auf eine Tafel zum Mitlesen. Projektionen verschiedener Art mit Darstellungen wie im TV schliessen das Video ab mit einer die Seele erhebenden Musik von sphärischen Universum Klängen.)
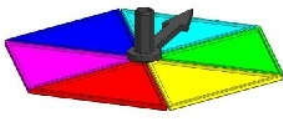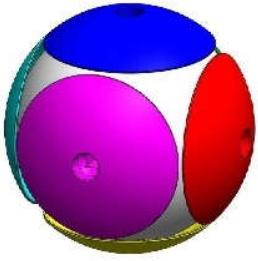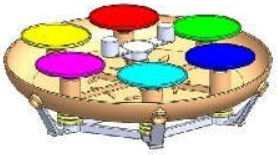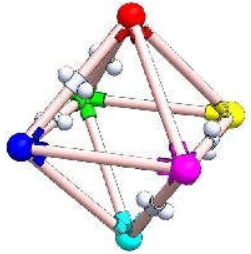

Curtain.

2 protons

positron

neutrino
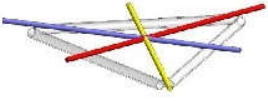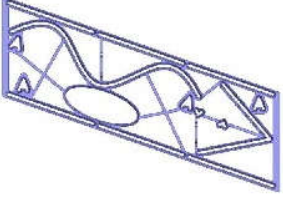
upper part proton
lower part neutron

G-Compass	Hedgehog	6-Roll Mill	Gluon Exchange
Barycenter	Deuteron	Handicrafts	Dark Mass and Energy