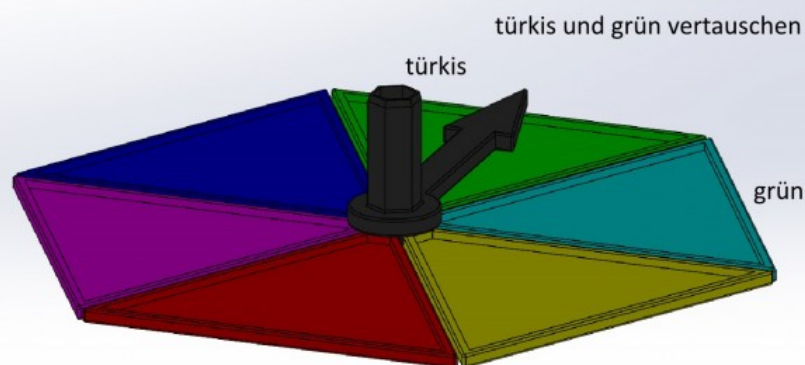


Physics teaching in schools worldwide

New Models



Bad Worishofen, Jul 17, 2019 ([IssueWire.com](http://www.IssueWire.com)) - Teaching physics for future, Gudrun Kalmbach H.E.

In 2019: The MINT-Wigris Toolbag can be used for teaching physics in the future. It has a patent and is ordered through the email address below.

The new units are described. It is pointed out that this is called today learning with the computer. Every school has to get - together with a new Computer set – a MINT-Wigris toolbag and further information are given by the teacher or internet articles. There are 8 tools for teaching the known facts for the four basic forces, six basic energies and deuteron symmetries which locate, store and measure them in suitable spaces.

Tool **hedgehog**. The strong SI, weak WI interactions and gravity master the nano range in atomic kernels AK and light as force EMI makes things visible (tool **template**). The hedgehog is not treating light, this is for atoms.

Unit 1. The first strong SI action sets an electrical EM potential field about an AK and a neutral or positron as its charge (figure 3).

Unit 2. Magnetic momentum, fields, flow quantum cones are generated and taught through known figures and formulas.

Unit 3: **barycentric coordinates** (figure 4) is set in a third tool and **Higgs bosons** set at the barycenter a rescaled mass for the nucleon.

Unit 4: weak WI interaction sets Euclidean coordinates through rotation and has the couplings of the Heisenberg uncertainties. In the SI tool **gluon exchange** (figure 1) it is shown that gluons confine in a nucleon three quarks, drawn as vertices of a triangle. It shows that SI is not connecting the deuterons two nucleons, only the WI action makes this through isospin exchange between a proton and a neutron (also in the AK). WI and SI have different speeds. This and the rescaling of mass from unit 3 has to be complemented by special relativity with the Minkowski metrical watch (consult for this the handbook) for rescalings. Spin like all energy absorptions and emissions moves up/down along nonorientable projective Moebius strips. It can be taught that leptons block off this nonorientable spin action for the oriented Euclidean space and set through rotating their EM or neutral charge in a plane a clockwise or counterclockwise direction and also the left hand and right-hand screw orientation for the Euclidean coordinates of the universe geometry.

Unit 5: The Minkowski rescaling of mass generates a common group speed v for the deuteron with

which it moves in its environment. This together with the rescaled mass m gives then the momentum $p=mv$ of the deuteron.

Unit 6: the **deuteron** (figure 2) is hanging at a stick and its shadow in the floors plane E is stretched or squeezed when it is moved up or down with the stick towards E . This is a gravity GR action and RGB-gravitons are like gluons superpositions of colour charge whirls. Colour charges are having attached six energy vectors; EM charge and potential red r , magnetic energy yellowy, mass-energy, and GR potential turquoise t , rotational energy as angular momentum magenta m , kinetic energy and momentum as blue b and heat green g . The **G-compass** (figure 3) has as normed

2×2 -matrix G the order 6 and is taken from the general relativistic nonlinear scaling factor of Minkowski to the Schwarzschild metric. For general relativity can be mentioned that this factor is in its reduced projective tensorial 2×2 -matrix version arising from a central projection and includes an unsymmetrical distance measure. When interpreted in form of a planet P rotating about a central sun Q then $|QP| = r$ is the distance Q measures towards P as a radius and P measures its distance to Q by $|PQ| = r - R_s$ where R_s is the general relativistic Schwarzschild factor of Q . Also the

RGB-gravitons of SI generate a projection from the 3-dimensional S^3 sphere factor down to the Pauli/Hopf S^3 for the three Pauli matrices of space. For WI and EM the geometry is described by the Hopf map $h: S^3 \rightarrow S^2$ and for SI the geometry is $S^3 \times S^5$. The S^5 sphere is also a fibre bundle like Hopf where a circle as fibre is projected down to a point. In the deuteron case, the image of S^5 is an inner complex projective space CP^2 . It needs the extension of spacetime coordinates to 8. The tool bag uses for this **octonian coordinates** which double up the spacetime WI quaternionic spacetime coordinates. S^5 is not sitting in spacetime as shown in the above deuteron projection onto the spacetime plane E . Additional octonian coordinates are for an Einstein energy plane mass/frequency, for EMI light as a rolled circle with a stereographic projection as the 7th octonian coordinate. The last octonian coordinate called e_0 is a vector projection whenever this is needed or set stochastically, for example moving a spin vector nonorientable from an up or energy absorption direction to a down or energy emitting vector. Changes of energy are in this small range on discrete energy levels. The carriers for energy transfer are **quantized**. Emission or absorption of energies include for coordinates the discrete Bohr radii, the dihedral symmetries for angles and for discrete-time intervals the time cycles of SI, WI and GR for deuteron, and for light a helix winding on a cylinder.

Unit 7: CP^2 for deuteron has as boundary a complex Riemannian sphere S^2 . Inside heat is measured as **entropy** and the stochastic heat exchange of deuteron with its environment is then the last step to the SI 6-cycle, also described as a flow, - the mill of the last teaching unit.

Unit 8: the **6-roll mill** (figure 4) has a potential described by an elliptic umbilic of catastrophe theory. The high-speed flow inside deuterons AK can be a quark/gluon plasma, containing also other particles at suitable times. In octonians, flows have along a world line a normal vector for its equipotentials and a tangent vector for its streamlines. They can come higher dimensional along with a flow as surface, not a curve, also 3-dimensional. A good coordinate description of flows is 7-dimensional, of atoms 6-dimensional, for fields 5-dimensional. There are many projective dual 3- and 4-dimensional spaces from which space and spacetime are only one example in octonians. The Fano memo (figure 5) shows the coordinates as seven points of a minimal projective plane and the seven lines are 3-dimensional subspaces. The points not (collinear) on a fixed-line can present the dual 4-dimensional affine space. In the Fano memo, the coordinate e_0 is drawn outside at left since it sets vectors. The EMI point 7 at the tip of the Fano triangle is a rolled circular coordinate for light and exponential functions describing it.

References

[1] G. Kalmbach H.E., MINT-WIGRIS, MINT Verlag, Bad Woerishofen, 2017, available under <https://www.scholars-press.com> [2] Many related MINT articles and parts of books in the 104 items long list of the authors (mostly scientific) publications. Often they are stored on the internet and can be downloaded or are available in the authors MINT (Mathematik, Informatik, Naturwissenschaften, Technik) book editions, vol. 1-38, 1997-2018, - the Deutsche Nationalbibliothek Frankfurt/M. [3] G. Kalmbach H.E., the Deuteron States, Nessa Journal of Physics, 2017, vol. 1, issue 2, pp. 1-17 [4] T. Poston and I. Stewart, Catastrophe theory and its applications, Pitman, London, 1978 [5] E. Schmutzer, Projektive einheitliche Feldtheorie, Harry Deutsch, Frankfurt, 2004, (the unified electrical and gravity fields is here 5-dimensional with three 4-dimensional projections similar to the above octonians coordinates in [1] into spacetime (e_1, e_2, e_3, e_4), the deuteron space (e_2, e_3, e_5, e_6) and a scalar field (e_1, e_4, e_5, e_6 .) [6] Internet video under YouTube: Moebius Transformations Revealed 2014

Recent open access articles of G. Kalmbach H.E. for download.

1 Cross products and Gleason frames, PJAAM, vol.10, 2014, pp. 1-15

2 MINT-WIGRIS, in Quantum Physics and Nuclear Engineering Conference, March 14-16, 2016, London, UK, dx doi.org/10.4172/2469-410X.C1.003

3 Projective and projection geometry for a new kind of unification, in Quantum Physics and quantum technology Conf., Sept. 25-26, 2017, Berlin Germany, J. of Lasers, Optics & Photonics,

4 Deuteron States, in Journal of Physics, Nessa Publ., vol. 1, issue 2, 2017

5 Projective gravity, in ijcr Internat. Journal of Contemporary research and review vol.9, issue 3, 2018; also in Journal of Lasers, Optics & Photonics 2017proceedings

6 Deuteron States Model, in Journal of Lasers, Optics & Photonics, vol. 5, issue 1, 2018,

7 Projective coordinate construction for energies, to appear Nov. 2018, WCLOP conf. proceedings

8 Social energies, in Academy of Social Science Journal, vol. 3, issue 06, 2018

9 A Deuteron Unification Model for gravity with the standard model of physics, J. of Phys. Chemistry & Biophysics, vol. 8, issue 3, 2018, DOI: 10.4172/2161-0398.1000274

10 A Gleason probability for heat, SCIFED Materials Research Letters, vol.2, issue 3, 2018

11 A measuring mass triple for the neutrino oscillation, Advanced Research J. of Multidisc. Discoveries, vol. 27, issue 1, 2018

12 Field Quanta for the Deuteron States, Biomedical Journal (BJSTR), vol. 7, issue 1, 2018

13 Membran oscillations and Heisenberg uncert., J. of Membrane Science & Tech., vol. 8.2, 2018

14 Generation and annihilation, J. of Physics & Astronomy, vol. 6, issue 2, 2018

15 Collisions of mass systems, Intern. J. of Current Innov. Research, vol. 4, issue 6(A), 2018,

16 Octonians for Astrophysics, J. of Astrophysics, vol. 1, issue 3, 2018

17 Energies basic numbers, Advance Research J. of multi-disciplinary discoveries, vol. 29.1 2018

18 Einstein metrics and two projection maps, Journal of modern and applied Physics, vol. 2.2, 2018

19 Octonian System, Acta Sc. Women Health, vol. 1, issue 2, 2019 (10 pages)

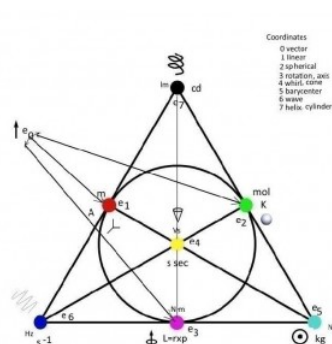
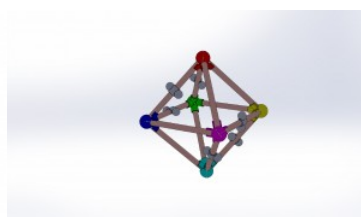
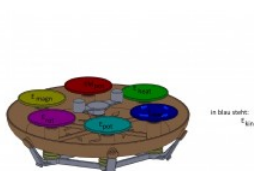
20 Construct the 8 models from the Tool Bags, J. of gastroenterology & digestive systems, vol . 3, issue 2, 2019 (3 pages)

21 View physical systems new, Acta Scientifica Publ. 2019, to appear

22 Integration and Differentiation, J. of Nanoscience and Technology 2019, to appear

Contact :

Gudrun Kalmbach H.E., MINT, PF 1533, D-86818 Bad Woerishofen, mint-01@maxi-dsl.de



Media Contact

MINT mint

mint-01@maxi-dsl.de

PF 1533, D-86818 Bad Woerishofen, Germany

Source : MINT Bad Woerishofen

See on IssueWire : <https://www.issuewire.com/physics-teaching-in-schools-worldwide-1638752326415572>