MP 8: Waves, Relativity and Quantization

Time: Wednesday 16:15–17:35 Location: ZHG002

MP 8.1 Wed 16:15 ZHG002

Impulsbasierte One-Way-Wellengleichung für die analytische Wellenberechnung in inhomogenen und anisotropen Medien — •Hans-Joachim Raida — 53639 Königswinter

Die konventionelle, in der Akustik und der Physik "standardmässig" verwendete (Two-Way)Wellengleichung 2. Ordnung $(\frac{1}{c^2}\frac{\partial}{\partial t^2} - \Delta)\vec{s} = \vec{0}$ [$\vec{s}$ =Verschiebungsvektor) beschreibt Stehwellenfelder für den trivialen Spezialfall eines homogenen isotropen Mediums. Wegen der Doppelableitungen ist die Lösung mathematisch recht aufwändig bzw. wegen der skalaren, quadrierten Wellengeschwindigkeit $c^2{=}(+c)^2{=}(-c)^2$ sind die Richtungen der Einzelwellen nicht eindeutig. Oft fehlen analytische Lösungen und es wird auf Näherungslösungen ausgewichen. Zudem können "Artefakte" entstehen. – Im Jahr 2014 wurde die impulsbasierte One-Way-Wellengleichung 1. Ordnung $(\frac{\partial}{\partial t} + \vec{c}\cdot\nabla)(E\vec{s}) = \vec{0}$ aufgestellt und in 30 Veröffentlichungen (DAGA, MDPI et al.) unterschiedliche Teilaspekte behandelt. Die One-Way-Wellengleichung ist – dank einer "kombinierten Feldvariable" $(E\vec{s})$ – sehr viel einfacher zu lösen als die Wellengleichung 2. Ordnung und die Vektor-Wellengeschwindigkeit $\vec{c}$ definiert eindeutig die Wellenausbreitungsrichtung. Die impulsbasierte "One-Way-Theorie" ist relevant für die bekannten akustischen sowie elektromagnetischen Wellen in inhomogenen oder anisotropen Medien. Nur für o.g. Spezialfall des homogenen isotropen Mediums (d.h. $\nabla\vec{c}{=}\mathbf{0}$) ist der d'Alembert-Stehwellen-Operator $\Box{=}(\frac{1}{c^2}\frac{\partial}{\partial t^2} - \Delta)$ gleich dem Produkt aus zwei One-Way-Wellenoperatoren $(\frac{\partial}{\partial t} + \vec{c}\cdot\nabla)$ $(\frac{\partial}{\partial t} - \vec{c}\cdot\nabla)$.

MP 8.2 Wed 16:35 ZHG002

Relativistic addition of velocities in a five-dimensional spacetime — •Roland Alfred Sprenger — Herford, Germany

Another method of adding relativistic velocities is shown. It uses a fifth dimension of spacetime rotating the coordinate system of the Minkowski diagram into it and thus is an indication of the existence of a fifth dimension. As proof of correctness of the rotation method it is derived from the addition theorem of velocities. Photographs of a hardware model and diagrams of a computer-generated model illustrate how to find the resulting velocity by the rotation into the five-dimensional spacetime. Alongside the paradox is resolved that any velocity added to lightspeed results in lightspeed.

MP 8.3 Wed 16:55 ZHG002

How come the quantum? Testing a proposal for the origin of Planck's quantum of action — •Christoph Schiller — Motion Moutain Research, Munich

Answers to Wheeler's question "How come the quantum?" are rare. The main reasons are presented and an answer going back to an approach by Dirac is proposed. The proposal implies a topological origin of Planck's quantum of action. The proposal is checked against numerous requirements and experiments that include non-commutativity, probabilities, spinor wave functions, Heisenberg's indeterminacy relation, the Schrödinger equation, and the Dirac equation. Complete agreement with observations is found. A model for particle mass and several experimental predictions are deduced. Unexpectedly, the checks with observations also eliminate all possible alternatives and thus provide arguments for the uniqueness of the proposal. The proposal confirms that quantum mechanics, quantum field theory, particle physics, and physical space are emergent.

Details and publications at https://motionmountain.net/research

MP 8.4 Wed 17:15 ZHG002

The missing link between quantum theory, general relativity and string theory: $c\ m\ day/r_{Earth's\ equator}{}^2 = 2/\pi$ — •Helmut Christian Schmidt — LMU, Munich, www.physics-beyond-standard-model.com

Quantum theory, general relativity and string theory are mathematically correct, but not complete. What can a person see? This can only be explained by a thought experiment. The light beam in the Michelson interferometer rotates in the same way as a Foucault pendulum. The experiment is only finished when one rotation is complete. The laboratory table for normalizing m and s rotates once a day, while a pendulum on the north pole indicates the sidereal time. Assuming a number chain for particles, we get: The spin corresponds to the apse line and is always orthogonal to the largest neighboring object and gives the gravity. For the system of Earth and photon, the pivot point of the angular momentum is the earth's surface. This gives $\sqrt{\pi/2\ c\ m\ day} = r_{Earth\ equator}(NN489m)$ Normalizing to electron, the energy of an electron is: $E_e = g_{freq}\pi + 1 - g_{pot}/\pi$. An algorithm is derived from a Christoffel symbol and similar to a lattice gauge calculation, even without the four interaction constants. It provides exact rest masses for neutrons, protons, muons, tauons, quarks u, d, and pions. The theory can be applied to the inner planetary system and the cosmos and explains quantum entanglement and the hierarchy problem.

$m_{Neutron}/m_e = (2\pi)^4 + (2\pi)^3 + (2\pi)^2 - (2\pi)^1 - 1 - (2\pi)^{-1} + 2(2\pi)^{-2} + 2(2\pi)^{-4} - 2(2\pi)^{-6} + 6(2\pi)^{-8} = 1838.6836611$

If $c\ m\ day/r_{Earth's\ equator}{}^2 = 2/\pi$ is assumed to be true, there are a number of consequences: Formulas for action, energy and centers of gravity can be summarized in a single line by polynomial $P(2\pi)$. $E_{neutron}/E_e = P(2\pi)$ is representative of all neutral objects, with the shortest formula consisting of 10 summands (3x3+1). The orbital periods result from 3 spatial dimensions $2^3 = 8$ as polynomial P(8). For example, for the system of observer, earth and bound moon, the orbital period of the moon is $month = 1/2(8^2 - 8 - 1 - 3/8) = 27.3\ days$. Further precise calculations for orbits and orbital periods in the solar system are given. It is important that the information from 2 real objects is also combined and stored in the cerebral network using the same algorithm as $E_{neutron}/E_e = P(2\pi)$ in virtual objects at a common point in time. This would explain the anthropic principle from theoretical physics.

h, G_N and c^5 result in a common constant:
$hG_Nc^5s^8/m^{10}\sqrt{\pi^4 - \pi^2 - \pi^{-1} - \pi^{-3}} = 0.999991$

This leads to an estimate for H0 and the wavelength of the CMBR. The polynomials $P(2\pi)$ give rise to new questions in physics, especially regarding Hilbert's 6th problem.

www.researchgate.net/publication/383976153