T 49: Andere Gebiete der Physik

Zeit: Mittwoch 16:30–18:30 Raum: Philo-HS2

T 49.1 Mi 16:30 Philo-HS2

How do scientists make neutrinos party? — •Zara Bagdasarian — IKP-2 Forschungszentrum Jülich

The neutrinos are ubiquitous, billions of them pass through every square centimeter of you every second. But do they cause you any harm? Actually, the chances of them interacting with you are less than once in a few years. Being such an introvert makes neutrino both an extremely valuable source of intact information and extremely hard to detect. But we do not do things because they are easy, but because they are hard. Scientists from all around the world are going to the various extremes to make neutrinos join the physics party.

T 49.2 Mi 16:45 Philo-HS2

Notational invariance of the standard model — •Lello Boscoverde — Istituto della Fava Pazza, Garching, Germany

We present our updated investigations into the notational invariance of the standard model, including an introduction to the principles of notational invariance and the topology of underlying symmetries—continuous vs. discrete, local vs. global, etc.; and examples from application to the standard model.

T 49.3 Mi 17:00 Philo-HS2

Einst Planck hätte dies GUT geheißen — •Morguen Rotwang — Adam-Weisenhaupt-Boulevard 23, 53115 Bonn

Der Wunsch nach einer Großen Vereinheitlichten Theorie steht in antiproportionalem Verhältnis zum Erfolg eine ebensolche zu etablieren. Einstein verstand wie in seinen Zugbeispielen aufgrund seiner Arbeiten zur speziellen Relativitätstheorien in der Quantentheorie nur 'Bahnhof'. Und Heisenbergs kreativer Nimbus wurde durch den Wegfall der Cooper-Paarung mit Pauli als advocatus diaboli bestenfalls unwahrscheinlich konservativ. Bis zum heutigen Tag stehen diese Fundamente unvereinbar nebeneinander. Den Ausweg aus diesem Dilemma konnte nur Planck leisten, der jedoch durch sein Lebenswerk strahlend zumnehmend mehr in Grußformeln vertieft war. Modernere Ansätze verwirrten sich so sehr in der Pluralität der Superlative, dass nach Ende eines drei Generationen währenden Tauziehens um das Standardmodell die Superstrings der SUSY unangetastet blieben. Wir ziehen nun all dies zu Rate und bilden mit dem eigentlich fundamentalen Baustein, in Einheiten der Wirkung von Raum x Zeit quantisiert, einen Letzten Satz eines vereinheitlichten Verständnisses.

T 49.4 Mi 17:15 Philo-HS2

A new method of destination the rest masses of the elementary particles — •Norbert Sadler — Norbert Sadler; Wasserburger Str. 25a; 85540 Haar

It can be shown that at the primordial nucleosynthesis the Exceptional E-8 Symmetry Group as a suitable gauge symmetry on the energy density distributation of the universe can be applied.

The E-8 Group replaces the "omnipotent Higgs-Field"!.

The E-8 Symmetry Group percolates, filters over the 57 dimensional object the mass ernergy equivalence of the elementary particles.

Further Information: www.cosmology-harmonices-mundi.com

T 49.5 Mi 17:30 Philo-HS2

Derivation of Mass & Fine Structure Constant of a free Electron at rest — •Manfred Geilhaupt — Hochschule Niederrhein

Why this presentation might be important? Restmass and Charge of a free electron and the fine structure constant derived from a Principle Theory is still an open question in physics. Einstein: "A theory that assumes mass and charge of an electron a priori is incomplete." This holds true for Einstein's GR-Principle Theory up to now! However, GR combined with Thermodynamic (TD)-Principles is able to reveal the nature of quantized mass (me˜1/Ne), defined by the Quantum Number Ne and by the theoretically calculated fine-structure constant depending on both the Einstein-metric number g44 from GR and the Einstein gamma-factor from SR. The most surprising result for me was that the Sommerfeld fine structure constant has its roots within Einsteins GR-Theory combined with Thermodynamics (GR+TD). The second surprising result is that GR+TD explains why we have only three leptons (electron-, myon-, tau-particle) due to the restricting Einstein invariance argument applied.

T 49.6 Mi 17:45 Philo-HS2

Particle masses depend on a balance of electrostatic and other interactions — •Karl Otto Greulich — Fritz Lipmann Institute, Beutenbergstr.11, D 07745 Jena

According to the alpha/beta rule (K.O.Greulich 2010 J Mod Phys, 1, 300-302, K.O. Greulich, 2016 DPG Spring meeting T 99.4) for exact calculation of particle masses, all particles can be arranged on a linear axis, where each two neighbors differ by a factor of alpha = 1/137. When ml is the mass of the lighter and mh of the heavier particle and with the definition of the fine structure (Sommerfeld) constant alpha = e**2 / 2 e0 h c one obtains mh e**2 = ml * 2 e0 hc where e is the elementary charge and e0 the dielectic constant of the vacuum. It appears that a subtle balance of electrostatic and other interactions governs the ratio of each of such two masses.

T 49.7 Mi 18:00 Philo-HS2

The Origin of Mass - A Fundamental Mechanism — •Albrecht Giese — Taxusweg 15, 22605 Hamburg

The origin of mass is one of the basic questions in our understanding of physics. The great attention being paid to the Higgs theory is an indication of this. However, Higgs's theory does not really work. Aside from its great complexity, the necessary Higgs field is contradicted by astronomical observations; and this theory does not provide the necessary Yukawa coupling needed to determine any actual mass.

On the other hand, there is a very fundamental solution for inertia based on classical physics. If two objects are bound to each other in such a way as to maintain a certain distance from each other, then this configuration necessarily has inertia, even if the two objects do not have any mass. This is basically caused by the fact that binding fields propagate with the finite speed of light.

If this model is used to determine the mass of the electron, for example, then the result conforms precisely to the actual measurements ($< 10^{-5}$). For this evaluation, the size of the electron is determined by classical means from its magnetic moment. - This calculation also works for the other leptons, as well as for quarks, and it covers the relativistic behaviour of mass, including Einstein's famous relationship between mass and energy.

It can be shown that no other mechanism is needed in physics to explain inertia.

Further info: www.ag-physics.org/rmass

T 49.8 Mi 18:15 Philo-HS2

A Conflict Exists in De Broglie's Wavelength of a Particle — •Albrecht Giese — Taxusweg 15, 22605 Hamburg

Louis de Broglie's great accomplishment was to postulate the wave properties of all elementary particles, and this became one of the pillars of quantum mechanics.

However, when de Broglie undertook to determine the parameters of such waves, he made a serious error. He believed there was a conflict regarding the frequency assigned to a particle. The Einstein-Planck relationship E=h*f predicts an increase of frequency f of a particle in motion, whereas SR predicts a decrease due to dilation. However, de Broglie was wrong about the latter. When one particle interacts with another, the frequency of the moving particle is seen to increase due to the Doppler Effect. (And the correct use of the Lorentz transformation leads to the same result.)

Furthermore, concerning the dependency of the wavelength on momentum: lambda=h/p is neither Lorentz- nor even Galilei-invariant. It does not therefore describe physics correctly. Nevertheless, it was used by Schrödinger and by Dirac as an essential part of their wave functions.

We will explain how the problem occurred and why the results seem to be confirmed by experiments. And we will present a concept that is able to yield a correct solution.