T 23: Andere Gebiete der Theorie

Zeit: Freitag 14:00–14:45 Raum: KGI-HS 1023

T 23.1 Fr 14:00 KGI-HS 1023

The smallness of the cosmological constant Λ — •Jürgen Brandes — D-76307 Karlsbad, Danziger Str. 65

"To explain the smallness of the cosmological constant is one of the most outstanding challenges in modern theoretical physics", because $\Lambda_{observed} = 10^{-122}\ \Lambda_{theoretical}$ and "thus wrong by 122 orders of magnitude"[Bergström and Goobar].

One possible solution is given by the Robertson-Walker-Metric (RWM) since it describes two different scenarios: (a) Expansion of the universe together with creation of time and space at big bang, (b) expansion of a meta-galaxy similar to a dust-like star but within space and time. In this case the non-empty vacuum (quantum ether) exists before big bang and $\Lambda_{obs} = \Lambda_{theo}$(changed by big bang) - Λ_{theo}(before big bang). Such a difference can be arbitrarily small and even zero if Λ_{theo} does not change solving the main challenge of Λ_{obs}. In case (a) quantum ether is created during expansion and this means either Λ_{obs} or Λ_{theo} being no solution. Questions to be discussed: Observable universe possibly an expanding meta-galaxy [1] and Λ_{theo} changeable as needed following quintessence models?

[1] Contribution Fachverband DD 2008

T 23.2 Fr 14:15 KGI-HS 1023

Berechnung und Darstellung der Elementarteilchen- Massen mittels der Lie-Symetriegruppe E8. — •Norbert Sadler — Wasserburger Str. 25a; 85540 Haar

Die Massen der Elementarteilchen und der Wechselwirkungs-Quanten werden über die Algebren der Lie-Symetrie E8 Gruppe berechnet.Die Algebren dieser E8-Repräsentation ergeben: E8 = (Univ.Radius) / (5/9 Lichtsec.) = 8,61 10**17 Die Darstellung der Massen erfolgt in Form eines Masse-Vektors xkg/1m, äquivalent zu einem Massen-Soliton-Zustand. Die Fermionen: Quark(up,down) = (4/9kg) / (Pi./c/1m.E8) = 1/2kg.(2Pi.Univ.Rad.) Die Masse des linearisierten Quarks, auf 1m Ortsraum, kann verstanden werden als Projektion/Verteilung einer 1/2kg-Masse über dem Umfang des beobachbaren Universums!fraktal! Elektron = 1kg.SQRT(4epsil.Strich/epsilon) / (AbsTemp.UnivRad.) Neutrino = 2.m(pl)SQRT(epsilStr./epsil.) / (3PiUniv.Rad) = 0,97eV Die Bosonen: Higgs-Boson = 4Pi.1kg / (5/9.E8./c/.4/91m) = 157 GeV/1m Photon = 5/4m(Pl)/abs.T/) / (4Pi.UnivRad**2) = 1,6110**-23eV/m**2 3Gluon = (2kg/m(pl)/**2) / (alfa(E).alfa(C)1m**2) = 3,7510**15GeV Vektor Z-Boson = 1kg/(6.alfa(E).Univ.Rad.) = 89,6 GeV/1m Graviton = (3Pi/UnivRad./.h) / (c**2./c/1s/./c/1m) = 6,210**-5 eV m(Pl) = 1kg(3Pi/UnivRad/./l(Pl)/); Univ.Rad. = 1,43 10**26m Masse des Univ. = 4/3.m(Pl).(Univ.Rad./l(Pl)) = 2,57 10**53 kg

T 23.3 Fr 14:30 KGI-HS 1023

The Origin of the Particle Mass — •Albrecht Giese — Taxusweg 15, 22605 Hamburg

THIS YEAR 2008 will present us the moment of truth with respect to the origin of the particle mass. Some physicists expect to find the Higgs-boson in the upgraded CERN accelerator LHC to confirm the Higgs theory. But that expectation will not be fulfilled.

There is a very fundamental mechanism in physics, which causes the inertial mass. When ever two objects are bound to each other in a way that a certain distance between both is maintained, such a configuration must have an inertial behaviour. This is caused by the finite speed of light c, by which the binding forces propagate. To make use of this fact, we have to learn that elementary particles like leptons and quarks are not point like, but are extended. If we e.g. accept the size of the electron as it was evaluated by Schrödinger from the Dirac equation (1930), we end up - by a very straight classical calculation - at the correct mass of the electron. A similar consideration works for all elementary particles.

The relativistic increase of the mass at motion and the mass-energy-relation (Einstein) are immediate consequences of this approach. The magnetic moment of a particle can be classically derived - in contrast to the statements made in text books.

For further information refer to www.ag-physics.org/rmass.