

T 27: Andere Gebiete der Theorie

Zeit: Freitag 14:00–15:00

Raum: HG XIII

T 27.1 Fr 14:00 HG XIII

The Origin of Mass (ursprünglich T 27.4; alle anderen Beiträge wurden eine Position nach hinten verschoben) —

•ALBRECHT GIESE — Taxusweg 15, 22605 Hamburg

The world of physics presently looks to the LHC (CERN), where many expect the Higgs boson to be found. The Higgs is supposed to (partly) explain the cause of mass.

There are indications that neither the Higgs nor Supersymmetric Particles will be found. In order to understand mass, the Higgs is not needed. Inertial mass is caused by a fundamental process. Binding fields propagate at the finite speed of light. An inevitable consequence is that every expanded object has an inertial behaviour, even if the constituents of the object are mass-less.

To explain the mass of elementary particles, we have to accept that these particles are expanded. This is on the one hand in conflict with the concept of present physics; on the other hand it is in no conflict with any experiment. And it conforms to the analysis of Schrödinger with respect to the Dirac function of the electron.

The corresponding particle model explains particle properties, like the magnetic moment (and therefore also the Bohr Magneton) and the constancy of the spin, correctly without any use of QM. Also the dynamic properties of mass, i.e. the relativistic increase of mass at motion and the mass-energy-relation, follow in a straight way from this concept.

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

T 27.2 Fr 14:15 HG XIII

What is the Probability of the Higgs Boson Discovery? —

•ALEXANDER UNZICKER — Pestalozzi-Gymnasium München

The standard model of particle physics requires the existence of the Higgs boson which provides a mechanism for the appearance of masses. Its detection is one of the most important goals of high energy physics, and enormous efforts have been undertaken at Tevatron and specially at the Large Hadron Collider.

But how sure can we be that the Higgs exists at all? At such controversial questions, the German philosopher Immanuel Kant recommended a bet, and nowadays this can be realized using online prediction markets like Intrade.com. Such platforms have been proven useful for giving estimates of unknown probabilities, and the application for evaluating scientific research is discussed in general. See also arXiv:0912.0443.

T 27.3 Fr 14:30 HG XIII

The smallness of Λ - objections München 2009 —

•JÜRGEN BRANDES — 76307 Karlsbad

The main objections München 2009 concern negative gravitational forces caused by Λ . These forces from opposite directions cancel each other in the same manner as normal ones do. Take an infinite space - the nonempty vacuum of QM - and accelerations caused by Λ vanish. The RWM allows both, a finite spacetime and infinite space, but cosmologists disagree with the last. This is the reason for 'the most outstanding challenges'[Bergström] to explain the smallness of Λ . Explaining the smallness of Λ is only the first step and not a final theory of its exact value. This and other objections München 2009 will be discussed.

T 27.4 Fr 14:45 HG XIII

Quantenelektrodynamik: Nah- oder Fernwirkungstheorie? —

•WALTER SMILGA — Isardamm 135 d, D-82538 Geretsried

Am Beispiel der elastischen Elektron-Elektron-Streuung wird der zugehörige Zustandsraum diskutiert. Seine Beschränkung auf irreduzible Zweiteilchen-Darstellungen der Poincaré-Gruppe lässt die Quantenelektrodynamik Züge einer Fernwirkungstheorie annehmen. Die Kopplungskonstante ist dann nicht mehr frei wählbar, sondern ergibt sich als Verhältnis der Zustandsdichten einer irreduziblen und einer reduzierten Zweiteilchen-Darstellung. Dieses Verhältnis stimmt zahlenmäßig mit der elektromagnetischen Feinstrukturkonstante überein. Die Konsequenzen dieser Koinzidenz werden kurz umrissen.