

T 101 Plenarvorträge I

Zeit: Mittwoch 09:00–10:30

Raum: Audimax

Plenarvortrag

T 101.1 Mi 09:00 Audimax

Nothing is real – Die Vakua der Physik — ●HENNING GENZ and
— Institut für Theoretische Teilchenphysik - Universität Karlsruhe**Plenarvortrag**

T 101.2 Mi 09:45 Audimax

Progress in Lattice QCD: Of Quarks, Walls and Domains —
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Lattice simulations of Quantum Chromodynamics are currently in a phase of transition. For many years simulations were either restricted to the quenched approximation, which neglects the effects of quark loops completely, or had to employ sea quarks whose masses were so large that dynamical quark effects were largely suppressed. Following recent progress in the development of efficient algorithms coupled with advances in computer technology, it now appears feasible to simulate QCD with light dynamical quarks, whose masses are close to their physical values. During recent years it has also been understood how chiral symmetry, which had long been suspected to be incompatible with lattice regularisation, can be preserved at non-zero lattice spacing. This has enabled the lattice community to tackle a range of problems for the first time, and in a conceptually clean manner. In this contribution I shall chart the progress that has been made on both these topics and discuss several applications, which include the determination of quark masses, the study of chiral symmetry breaking and recent attempts to explain the $\Delta I = 1/2$ rule.