

T 309: Neutrino Theorie

Zeit: Mittwoch 16:45–19:05

Raum: KIP SR 2.404

T 309.1 Mi 16:45 KIP SR 2.404

Hints on the high-energy seesaw mechanism from the low-energy neutrino spectrum — ●ALEJANDRO IBARRA — DESY, Theory Group, Notkestrasse 85, D-22603 Hamburg, Germany

In the view of the observed large hierarchies in the quark and charged lepton masses, it is reasonable to assume that the high energy neutrino parameters that enter in the see-saw mechanism also present analogous large hierarchies. In this talk we discuss the constraints on the see-saw mechanism that follow from the observation of mild neutrino mass hierarchies at low energies.

T 309.2 Mi 17:05 KIP SR 2.404

Neutrino Masses in Heterotic Orbifolds — ●SAUL RAMOS-SANCHEZ — Physikalisches Institut der Uni-Bonn, Nussallee 12, Bonn, Deutschland

The value of quark and lepton masses can be generically addressed by String Theory. Some attempts to describe see-saw neutrino masses in the context of heterotic orbifolds have been done in the past without success. In the light of recent achievements in model building, we re-examine the simple see-saw mechanism in Z6-II heterotic orbifold models.

T 309.3 Mi 17:25 KIP SR 2.404

T' - simultaneous description of quarks and leptons — ●CLAUDIA HAGEDORN — Max-Planck-Institut fuer Kernphysik, Heidelberg, Deutschland

We describe an extension of a model which uses the flavor symmetry A4. This model predicts the tri-bi-maximal mixing in the lepton sector, but does not explain any features of the quark sector. We discuss properties of the quark sector by extending the flavor symmetry to T'. Then quarks and leptons transform non-trivially under this flavor symmetry.

T 309.4 Mi 17:45 KIP SR 2.404

Renormalization group evolution in type-II see-saw models — ●MICHAEL SCHMIDT — MPI für Kernphysik, Heidelberg, Germany

The renormalization group equations in the type-II see-saw scenario

are presented and the running of neutrino mass parameters is discussed.

T 309.5 Mi 18:05 KIP SR 2.404

Non standard interactions in neutrino oscillations — ●TOSHIHIKO OTA — Max Planck Institut fuer Kernphysik Saupfercheckweg 1 69117 Heidelberg

We study the discovery reach for non-standard interactions (NSIs) in a neutrino factory experiment. We will present detailed numerical results for them. Our simulations will take into account matter effects, uncertainties in the neutrino oscillation parameters, systematic errors, parameter correlations. We perform scans of the parameter space, and show that a neutrino factory has excellent prospects of detecting NSIs. We also discuss predictions for NSIs in some models.

T 309.6 Mi 18:25 KIP SR 2.404

Oscillation Physics with Neutrino Beams from Electron Capture — ●MARK ROLINEC — Technische Universität München, Physik Department, James-Frank-Strasse, D-85748 Garching

We present the physics potential of a flavor pure electron neutrino beam coming from electron capture processes directed towards a megaton water cherenkov detector. In the rest frame of the processes the energy of the neutrinos is monochromatic. We discuss the potential to resolve correlations and degeneracies in the search for $\sin^2 2\theta_{13}$ and δ_{CP} of this scenario at low and high gamma. At low gamma the neutrino beam can be viewed as monochromatic at the detector and a measurement in different settings of gamma is required. At high gamma the energy of the neutrinos at the detector depends on the distance from the beam center and energy reconstruction is accurately possible by the position measurement within the detector.

T 309.7 Mi 18:45 KIP SR 2.404

The Cal-Effect in future neutrino experiments — ●ALEXANDER MERLE — Max-Planck-Institut für Kernphysik, Postfach 10 39 80, 69029 Heidelberg

t.b.a.