FAKULTÄT für PHYSIK
LUDWIG-MAXIMILIANS-UNIVERSITÄT
MÜNCHEN/GARCHING

PHYSIK-DEPARTMENT
TECHNISCHE UNIVERSITÄT MÜNCHEN
MÜNCHEN/GARCHING

MLL-KOLLOQUIUM

Donnerstag, 24.11.2016, 16^{15} Uhr

Hörsaal der LMU in Garching, Am Coulombwall 1
Treffen zum gemeinsamen Kaffee 16 Uhr

Prof. Marc Knecht

(Centre de Physique Théorique, Universität Marseille, Frankreich)

Probing the intensity frontier with the anomalous magnetic moments of the charged leptons

Searches for physics beyond the standard model are pursued very actively and in several ways. On the one side, the LHC is probing the energy frontier directly and at an unprecedented level. On the other side, cosmological and astrophysical observations (supernovae, CMB, galaxy survey,...) have considerably extended our knowledge at the cosmic frontier, and may give indirect indications of degrees of freedom beyond those described by the standard model. A third path to the discovery of new physics is provided by experiments that aim at probing the precision frontier, either by trying to measure observables that are suppressed in the standard model, or by looking for tiny deviations in observables that are predicted to a very high precision. The anomalous magnetic moments of the light leptons, electron and muon, belong to this last category. Presently they are known with a relative precision at the level of 0.24 ppb and 0.54 ppm, respectively. This presentation will describe both the theoretical and experimental tours de forcethat have allowed to reach such an exceptionally high precision. Experimental projects aiming at increasing this precision, and the challenges they constitute for theory, will also be addressed.

gez. Peter Thirolf
Tel. 289-14064

gez. Norbert Kaiser
Tel. 289-12367