

**FAKULTÄT für PHYSIK
LUDWIG-MAXIMILIANS-UNIVERSITÄT
MÜNCHEN/GARCHING**

**PHYSIK-DEPARTMENT
TECHNISCHE UNIVERSITÄT MÜNCHEN
MÜNCHEN/GARCHING**

MLL-KOLLOQUIUM

Donnerstag, 09.11.2017, 16¹⁵ Uhr

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

Dr. Robert Szafron

(Physik Department T31, TUM)

The Most Precise Tests of The Standard Model

Low energy experiments allow to test Standard Model predictions and look for signals of New Physics with precision unattainable for high energy colliders. At the border of particle and atomic physics, the cooperation of theorists and experimentalists enables the determination of fundamental constants with astonishing accuracy. The existing theory is scrutinized in sophisticated measurements that determine properties of electrons and muons. I will discuss some past and current successes as well as challenges of the research program at the precision frontier. I will focus on electron and muon magnetic moments and on the energy levels of a hydrogen atom. I will mention some of the existing problems, like the proton radius puzzle and the muon anomalous magnetic moment discrepancy. Finally, I will show which challenges and opportunities these offer for the future.

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