

FAKULTÄT für PHYSIK  
LUDWIG-MAXIMILIANS-UNIVERSITÄT  
MÜNCHEN/GARCHING

PHYSIK-DEPARTMENT  
TECHNISCHE UNIVERSITÄT MÜNCHEN  
MÜNCHEN/GARCHING

## MLL-KOLLOQUIUM

Donnerstag, 12.11.2015, 16<sup>15</sup> Uhr

Seminarraum 127, TUM, Physik II, Erdgeschoss/Nord  
Treffen zum gemeinsamen Kaffee 16 Uhr

Prof. Bastian Märkisch  
(TU München)

### Neutron Decay and the Structure of Weak Interaction

Neutron beta decay is an excellent system to study the charged weak interaction experimentally. The decay is precisely described by theory and unencumbered by nuclear structure effects. Observables are numerous correlation coefficients, spectra and the neutron lifetime. Most importantly, precision measurements in neutron beta decay are used to investigate the structure of the weak interaction and to derive the CKM matrix element  $V_{ud}$ .

In this talk I will present recent results of the PERKEO III spectrometer on the beta asymmetry and introduce the new instrument PERC, which is currently under construction at the FRM II by an international collaboration. PERC is designed to perform improved measurements of several correlation coefficients by an order of magnitude.

The concept of the instrument as well as its current status will be presented.

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