

Gemeinsame Veranstaltung von
Humboldt-Universität zu Berlin, Institut für Physik
(Theorie der Elementarteilchen / Computerorientierte Theoretische Physik)
DESY, Zeuthen

SEMINAR

**Feldtheorie auf dem Gitter und
Phänomenologie der Elementarteilchen**

Am Dienstag, dem **13 Juni, um 15:30 Uhr s.t.** spricht

Prof. Constantia M. Alexandrou

University of Cyprus

zum Thema

Nucleon and N to Delta form factors from Lattice QCD

Abstract

The isovector nucleon electromagnetic form factors are evaluated in quenched and unquenched QCD on the lattice using Wilson fermions and smallest pion mass of 380 MeV. Comparing lattice results to experiment we find agreement for the magnetic form factor but not for the electric form factor. As a consequence chiral extrapolation of the magnetic moment and magnetic radius yield results in agreement with experiment whereas the chirally extrapolated electric radius is smaller than experiment. The N to Delta transition factors are evaluated on the same configurations as those used for the nucleon form factors. The results using Wilson fermions are compared to those using MILC configurations and Domain Wall fermions of similar pion masses. The implications of non-zero quadrupole transition form factors on the shape of the nucleon are discussed.

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Web: <http://www-zeuthen.desy.de/~shindler/seminar/seminar.html>