MP 10: Gitterfeldtheorie HV 1

Zeit: Donnerstag 11:15–11:55   Raum: HS 8

Hauptvortrag   MP 10.1   Do 11:15   HS 8
Five-dimensional gauge theories on the lattice — •Francesco Knechtli — Department of Physics, Bergische Universität Wuppertal, Germany

Five-dimensional gauge theories play a role in extensions of the Standard Model, where (some of) the fifth dimensional components of the gauge field are identified with a Higgs field. Due to the non-renormalizability, a finite ultra-violet cut-off has to be introduced. The formulation on a Euclidean lattice is a natural choice which preserves the gauge symmetry. Away from the perturbative regime, these theories can be studied by means of a mean-field expansion and by Monte Carlo simulations. We will present and compare results from these methods for SU(2) gauge theories with periodic and orbifold boundary conditions, in particular concerning dimensional reduction and the Higgs mechanism.