

MP 12: Gitterfeldtheorie HV 2

Zeit: Donnerstag 14:00–14:40

Raum: HS 8

Hauptvortrag

MP 12.1 Do 14:00 HS 8

Spontaneous supersymmetry breaking on the lattice — ●_{URS}
WENGER — Albert Einstein Center for Fundamental Physics, Institute
for Theoretical Physics, University of Bern, Sidlerstrasse 5, CH-3012
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We discuss various strategies for regularising supersymmetric quantum field theories on a space-time lattice. In general, simulations of

lattice models with spontaneously broken supersymmetry suffer from a fermion sign problem related to the vanishing of the Witten index. We discuss a novel approach which evades this problem in low dimensions by formulating the path integral on the lattice in terms of fermion loops. Then we present exact results on the spectrum and the Witten index for $N=2$ supersymmetric quantum mechanics and results from simulations of the spontaneously broken $N=1$ Wess-Zumino model.