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 **8. Mai, um 15:00 Uhr s.t.** spricht

Dr. **Erhard Seiler**

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zum Thema

Non-amenable symmetries, spontaneous symmetry breaking and duality between compact and noncompact sigma models

Abstract

Nonlinear sigma models with non-compact target space and non-amenable symmetry group were introduced long ago in the study of disordered electron systems. They also occur in dimensionally reduced quantum gravity; recently they have been considered in the context of the AdS/CFT correspondence. These models show spontaneous symmetry breaking in any dimension, even one and two, superficially in contradiction with the Mermin-Wagner theorem, as a consequence of the non-amenability of their symmetry group. The low-dimensional models show other peculiarities: invariant observables remain dependent on boundary conditions in the thermodynamic limit, the Osterwalder-Schrader reconstruction yields a non-separable Hilbert space and discontiuous representations occur. The ground state space caries however, under quite general conditions, a unique unitary and continuous representation.

A final issue to be discussed is the somewhat subtle duality between compact and noncompact models.

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