

Università degli Studi di Pavia
DOTTORATO DI RICERCA IN FISICA

CORSO DI SEMINARI DI INDIRIZZO TEORICO

A.A. 2005/2006

Giovedì 23 Febbraio 2006, ore 16.00

Sala Riunioni, Dipartimenti Fisici, via Bassi 6

Dott. ALESSANDRO D'ADDA

Sezione INFN di Torino

Supersimmetrie estese esatte su reticolo

Abstract:

Exact $N=2$ twisted supersymmetry in two dimensions and $N=4$ twisted supersymmetry in four dimensions are exactly realized on a lattice. The lattice has a new type of "fermionic" links, where odd Grassmann variables, including supercharges. Superfields are semi-local objects and superfield expansion is naturally embedded in the lattice structure. Leibnitz rule is preserved on the lattice, although in a modified form that takes into account the link nature of derivatives and supercharges. The twisted algebra makes use of Dirac-Kähler fermions, thus trading the fermion doublers for the multiplicity due to the extended supersymmetry, and keeping the balance between bosonic and fermionic degrees of freedom. As an example the $N=2$ super Yang Mills theory in two dimensions is formulated on the lattice, keeping all supersymmetries exact.

Gli studenti di Dottorato e tutti gli interessati sono cordialmente invitati

Titolare del Corso
Prof. Annalisa Marzuoli