

Meeting: 998, Houston, Texas, SANCHEZ, Invited Address

998-17-4

Adolfo Sánchez-Valenzuela*, Centro de Investigacion en Matematicas, Guanajuato, Mexico.

Lie superalgebras associated to the adjoint representation.

This talk will give an overview of the theory of Lie superalgebras with some applications in elementary geometry and physics. It will be shown from scratch that there are finitely many isomorphism classes of (real and complex) Lie superalgebras based on $gl(n)$ associated to the adjoint representation. The case of $gl(2)$ and its real form $u(2)$ are specially considered, because Minkowski spacetime can be identified with the Lie algebra $u(2)$. It will be shown in elementary terms that there are ten different isomorphism classes of real Lie superalgebras based on $u(2)$ naturally associated to the adjoint representation, thus giving rise to ten different possibilities for Minkowski ‘super-spacetimes’. The question of what kind of invariant bilinear supersymmetric forms can be defined on the different isomorphism classes of Lie superalgebras based on $gl(n)$ will also be addressed. (Received August 12, 2003)