

1023-58-841

Paolo Casati* (paolo.casati@unimib.it), via Cozzi 53, Milano, L I-20125. *New integrable hierachies from vertex operators representations of polynomial Lie algebras.*

We show how recent discovered coupled soliton equations are a particular cases of a very wide class of of coupled hierachies of solitons equations which can be obtained using the vertex operators construction of a new class of infinite dimensional Lie algebras, which are the affinization of not simple finite dimensional Lie algebras, with a symmetric non degenerated ad-invariant bilinear form. Therefore to obtain a representation theoretical description of such hierachy we are first enforced to extend the usual theory of vertex operators representations to this new type of Lie algebras. This latter theory will allows us to produce coupled soliton equations to each of the Drinfeld–Sokolov and the AKP BKP CKP DKP hierachies together with their multisoliton solutions.

Reference

New Integrable Hierachies from Vertex Operator Representations of Polynomial Lie Algebras Journal of Geometry and Physics vol. **56** 418–449 (2006). (Received September 23, 2006)