

Abstract Submitted
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Supersymmetry and Lie Algebras PATRICK MOYLAN, Pennsylvania State Univ — Construction of quotients, or localization as it is called in mathematics, provides a powerful tool to relate different physical structures which share some underlying similarities. We recall the Gelfand-Kirillov conjecture which asserts that the quotient field of the universal enveloping algebra of a Lie algebra is isomorphic to some skew field extension of a Weyl algebra. Another example is the isomorphism between certain skew field extensions of the universal enveloping algebras of the Poincaré Lie algebra and the Lie algebra of the de Sitter group established by P. Bozek, M. Havlicek and O. Navratil (cf. M. Havlicek, P. Moylan (1993), *J. Math. Phys.*, 34 (11) 5320-5332). Working in a quantum groups setting we extend these ideas to include supersymmetry. We show how it is possible to describe q deformations of superalgebras in terms of enveloping algebras of Lie algebras by localizations and extensions of them. At least for certain low rank simple superalgebras our results lead to new representations. In particular, we obtain new representations of the standard q deformation of the orthosymplectic Lie super algebra $osp(1|2)$. References: 1) P. Moylan (2014) *J. Phys. Conf. Ser.*, (512) 012026; 2) S. Clark, W. Wang (2013) *Lett. Math. Phys.* (103) 207-231.

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