Rita FIORESI, Fabio GAVARINI

"Algebraic supergroups with Lie superalgebras of classical type"

Journal of Lie Theory **23** (2013), no. 1, 143–158

`http://www.heldermann.de/JLT/JLT23/JLT231/jlt23008.htm`

ABSTRACT

We show that every connected affine algebraic supergroup defined over a field k, with diagonalizable maximal torus and whose tangent Lie superalgebra is a k–form of a complex simple Lie superalgebra of classical type is a Chevalley supergroup, as it is defined and constructed explicitly in [R. Fioresi, F. Gavarini, *Chevalley Supergroups*, Memoirs of the AMS **215** (2012), no. 1014].

— — — — —

References

[1] J. Brundan, A. Kleshchev, *Modular representations of the supergroup $Q(n)$, I*, Journal of Algebra **260** (2003), 64–98.

[2] C. Carmeli, R. Fioresi, *Super Distributions, Analytic and Algebraic Super Harish-Chandra pairs*, preprint `arXiv:1106.1072v1 [math.RA]` (2011).

[3] C. Carmeli, L. Caston, R. Fioresi, *Mathematical Foundation of Supersymmetry*, Lectures in Mathematics (2011), European Mathematical Society.

[4] M. Demazure, *Schémas en groupes reductifs*, Bull. SMF **93** (1965), 369–413.

[5] M. Demazure, P. Gabriel, *Groupes Algébriques, Tome 1*, Mason&Cie éditeur, North-Holland Publishing Company, The Netherlands, 1970.

[6] R. Fioresi, *Smoothness of algebraic supervarieties and supergroups*, Pacific J. Math. **234** (2008), 295–310.

[7] R. Fioresi, F. Gavarini, *Chevalley Supergroups*, Memoirs of the American Mathematical Society **215** (2012), 1014.

[8] R. Fioresi, F. Gavarini, *On the construction of Chevalley Supergroups, in: Supersymmetry in Mathematics and Physics*, Lecture Notes in Mathematics **2027** (2011), Springer & Verlag, Berlin-Heidelberg, 101-123.

[9] F. Gavarini, *Algebraic supergroups of Cartan type*, Forum Mathematicum (to appear), — preprint `arXiv:1109.0626v4 [math.RA]` (2011).

[10] K. Iohara, Y. Koga, *Central extensions of Lie Superalgebras*, Comment. Math. Helv. **76** (2001), 110–154.

[11] J. C. Jantzen, *Representations of algebraic groups*, Mathematical Surveys and Monographs **107** (2003), American Mathematical Society, Providence, RI.

[12] J. C. Jantzen, *Lectures on Quantum Groups*, Graduate Studies Math. **6** (1996), American Mathematical Society, Providence, RI.

[13] V. G. Kac, *Lie superalgebras*, Advances in Mathematics **26** (1977), 8–96.

[14] A. Masuoka, *The fundamental correspondences in super affine groups and super formal groups*, J. Pure Appl. Algebra **202** (2005), 284–312.

[15] A. Masuoka, *Harish-Chandra pairs for algebraic affine supergroup schemes over an arbitrary field*, Transformation Groups (to appear) — preprint `arXiv:1111.2387v2 [math.RT]` (2011).

[16] R. Steinberg, *Lectures on Chevalley groups*, Yale University, New Haven, Connecticut, 1968.

[17] V. S. Varadarajan, *Supersymmetry for mathematicians: an introduction,* Courant Lecture Notes **1** (New York University, Courant Institute of Mathematical Sciences, New York), American Mathematical Society, Providence, RI, 2004.