1060-17-43 **Juana Sanchez Ortega*** (jsanchez@agt.cie.uma.es), Dpto. Algebra, Geometria y Topologia, Facultad de Ciencias, Campus de Teatinos, Universidad de Malaga, Malaga, Malaga 29071.

Quotients for graded Lie algebras.

The theory of quotients of associative algebras has a rich history and is still an active research area. Recently, notions of quotients for Jordan systems have appeared (see [3, 1, 2]). In [4] M. Siles Molina introduced the notion of a general algebra of quotients of a Lie algebra, and built a maximal algebra of quotients for every semiprime Lie algebra. We study here quotients for graded Lie algebras. The relationship between the graded and the non-graded quotients is analyzed and important examples are given. We build a graded maximal algebra of quotients for every graded semiprime Lie algebra and we show that the study of maximal Jordan systems of quotients in the sense of [2] can be seen under the umbrella of Lie quotients, via the Tits-Kantor-Koecher construction.

[1] Anquela, J. A., Garcia, E., Gomez Lozano, M., Maximal algebras of Martindale-like quotients of strongly prime linear Jordan algebras, J. Algebra 280 (2004), 367-383. [2] Garcia, E., Gomez Lozano, M., Jordan System of Martindale-like Quotients. J. Pure Appl. Algebra 194 (2004), no. 1-2, 127-145. [3] Martinez, C., The ring of fractions of a Jordan algebra, J. Algebra 237 (2001), 798-812. [4] Siles Molina, M., Algebras of quotients of Lie algebras. J. Pure Appl. Algebra 188 (2004), 175-188. (Received March 08, 2010)