1056-17-1147 **Pilar Benito*** (pilar.benito@unirioja.es), Departamento de Matemáticas y Computación, Edificio Vives, Luis de Ulloa s/n, 26004 Logroño, La Rioja, Spain. *Lie-Yamaguti algebras and related structures.* Preliminary report.

Lie-Yamaguti algebras (LY-algebra for short) are nonassociative binary-ternary algebraic systems introduced in 1957 by K. Yamaguti in connection with reductive homogeneous spaces. The LY-algebras with binary trivial product are the so call Lie triple systems, while the LY-algebras with trivial ternary product are exactly the Lie algebras. Less known examples of LY-algebras arising from homogeneous spaces related to the compact Lie group G_2 where described by Benito-Draper-Elduque in 2005.

The LY-algebras which are irreducible as modules over their Lie inner derivation algebra are the goal in this talk. They are the algebraic counterpart of the isotropy irreducible homogeneous spaces classify by J. A. Wolf in 1968. These irreducible systems splits into three disjoint types: adjoint type, non-simple type and generic type. We shall show that certain nonassociative systems like Lie and Jordan algebras, symplectic and orthogonal triples and Jordan pairs can be used to classify these three different types of LY-algebras. This is a joint work with Alberto Elduque and Fabián Martín-Herce. (Received September 21, 2009)