A magic square of Lie superalgebras via tensor categories

A. Elduque

Alberto Elduque (elduque@unizar.es)
Universidad de Zaragoza

Abstract.

A Lie superalgebra will be attached to any finite-dimensional J-ternary algebra over an algebraically closed field of characteristic 3, using a process of semisimplification via tensor categories. Some of the exceptional simple Lie algebras, specific of this characteristic, will be obtained in this way and, in particular, a new magic square of Lie superalgebras will be constructed, with entries depending on a pair of composition algebras.

(Based on joint work with Isabel Cunha (Universidade da Beira Interior).)

References

[1] I. Cunha and A. Elduque, *J-ternary algebras, structurable algebras, and Lie superalgebras*, Rev. Real Acad. Cienc. Exactas Fis. Nat. Ser. A-Mat. (2026) 120:59.

[2] M. Smet, *Semisimplifying Lie algebras of J-ternary algebras in characteristic* 3, Commun. Algebra (2026).