Representations of Noncommutative Jordan Superalgebras

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Abstract

A superalgebra U is called noncommutative Jordan if it is flexible and its symmetrized superalgebra $U^{(+)}$ is Jordan. The class of noncommutative Jordan superalgebras is a vast extension of both Jordan and alternative superalgebras. Simple finite-dimensional noncommutative Jordan superalgebras of degree ≥ 1 were described by A. Pozhidaev and I. Shestakov. Representations of alternative and Jordan superalgebras are considered in works of C. Martinez, I. Shestakov, E. Zelmanov and others. In this talk we will review the development of the structure theory of noncommutative Jordan superalgebras and previous results on representations of nonassociative superalgebras. Also we will discuss our results on representations of simple finite-dimensional noncommutative Jordan superalgebras. Particularly, we describe all irreducible finite-dimensional representations of simple finite-dimensional noncommutative Jordan superalgebras of degree ≥ 2 over an algebraically closed field of characteristic 0.