

Abstract

Homomorphisms of Diagonal Lie Algebras

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In the talk we discuss certain results on diagonal locally simple Lie algebras. The main part of these results is presented in the author's paper "Locally simple subalgebras of diagonal Lie algebras", *J. Algebra*, **327** (2011), 186-207.

Diagonal Lie algebras are defined as direct limits of finite-dimensional Lie algebras under diagonal injective homomorphisms. An explicit description of the isomorphism classes of diagonal locally simple Lie algebras is given in the paper [A. A. Baranov, A. G. Zhilinskii, Diagonal direct limits of simple Lie algebras, *Comm. Algebra*, **27** (1998), 2749-2766]. In the preprint already mentioned all locally simple Lie subalgebras of any diagonal locally simple Lie algebra are classified up to isomorphism. Some methods used for this classification will be the main topic of the talk.