

Fixpunktmenngen von halbeinfachen Automorphismen in halbeinfachen Lie-Algebren

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Math. Annalen 221 (1976), 45–54

Fixed Point Sets of Semisimple Automorphisms of Semisimple Lie Algebras – Abstract –

Let \mathfrak{g} be a semisimple Lie algebra over an algebraically closed field of characteristic 0. The set of fixed points of a semisimple inner automorphism of \mathfrak{g} is a regular reductive subalgebra of maximal rank [1], so it is defined by a subsystem of the root system Φ of \mathfrak{g} relative to a suitable Cartan subalgebra.

The main theorem of the article characterizes the corresponding subsystems of Φ . The second part of the article shows how to compute the fixed point algebras of semisimple *outer* automorphisms of \mathfrak{g} . A complete list of all fixed point algebras is then easily obtainable.

The results are applied to bounded symmetric domains.

References

- [1] N. Jacobson: A note on automorphisms of Lie algebras. Pacific J. Math. 12 (1962), 303–315.