



INTISARI

SIFAT KETEREDUKSIAN LENGKAP REPRESENTASI ALJABAR LIE SEMISEDERHANA

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Aljabar Lie atas lapangan merupakan ruang vektor yang dilengkapi pemetaan bilinear (disebut *Lie bracket*) yang memenuhi aksioma skew-simetri dan identitas Jacobi. Aljabar Lie dikatakan semisederhana jika tidak mempunyai ideal solvabel tak nol. Representasi dari suatu aljabar Lie mendeskripsikan pemetaan setiap elemen dari sebarang aljabar Lie ke dalam bentuk matriks representasi. Representasi aljabar Lie dikatakan ireduksibel jika subruang \mathfrak{g} -invarian dari ruang vektor V hanya $\{0\}$ dan V . Representasi aljabar Lie dikatakan tereduksi lengkap jika untuk setiap U subruang \mathfrak{g} -invarian, terdapat W subruang \mathfrak{g} -invarian lain sedemikian sehingga $V = U \oplus W$. Lebih lanjut, representasi dari aljabar Lie semisederhana merupakan representasi yang tereduksi lengkap.



ABSTRACT

COMPLETELY REDUCIBLE OF SEMISIMPLE LIE ALGEBRA REPRESENTATION

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Lie algebras over a field is a vector space together with a bilinear map (is called Lie bracket) which satisfies skew-symmetry dan Jacoby identities. Lie algebra is said to be semisimple if it has no nonzero solvable ideals. A representation of Lie algebra describes a map for every elements in Lie algebras to the matrix representation. A representation of Lie algebra is said to be irreducible if $\{0\}$ and V are the only \mathfrak{g} -invariant subspaces. A representation of Lie algebra is said to be completely reducible if for any U invariant subspace of Lie algebra \mathfrak{g} , there exists a W invariant subspace of Lie algebra \mathfrak{g} such that $V = U \oplus W$. Furthermore, the representation of semisimple Lie algebra is a completely reducible.