INTISARI

REPRESENTASI LINEAR KONTINU DARI GRUP TOPOLOGIS KE DALAM RUANG VEKTOR TOPOLOGIS

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Penelitian disertasi ini dilakukan untuk mengkaji suatu representasi yang semula merupakan representasi linear suatu ruang vektor terhadap grup berhingga. Pada setiap himpunan tak kosong, selalu dapat dikenakan topologi sehingga grup maupun ruang vektor dapat menjadi ruang topologis. Melalui pemetaan kontinu pada pergandaan kartesius ruang topologis, khususnya ruang topologis dari grup maupun ruang vektor, diperoleh struktur grup topologis dan ruang vektor topologis.

Representasi Linear adalah homorfisma dari grup ke dalam himpunan operator linear dari suatu ruang vektor ke dirinya sendiri, yang memenuhi beberapa aksioma. Memanfaatkan konsep topologi, dan pengertian grup serta ruang vektor topologis, dikaji representasi linear kontinu dari grup topologis ke dalam ruang vektor topologis. Diperoleh representasi linear kontinu bar, bagian, kwosen dan hubungannya serta sifat masing-masing. Dihasilkan pula representasi linear kontinu bersifat iredusibel dan redusibel lengkap, sehingga setiap representasi linear kontinu iredusibel merupakan representasi linear kontinu redusibel lengkap dan jika diberikan representasi linear kontinu redusibel lengkap maka diperoleh dekomposisi ruang representasi yaitu ruang vektor topologisnya.

ABSTRACT

CONTINUOUS LINEAR REPRESENTATION FROM TOPOLOGICAL GROUP INTO TOPOLOGICAL VECTOR SPACE

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This dissertation research has been done to have a representation from a topological group into a topological vector space. Each non empty set can always be a topological space, such that groups and vector spaces can be a topological space. Through a continuous mapping on a Cartesian product of topological spaces, in particular the topological space of a group and a vector space. We have a topological group and a topological vector space.

A liinear representation is a homomorphism of a group into a set of linear operators on a vector space into itself, which satisfies some axioms. By using concepts of topology, a topological group, and the topological vector space, we observe a continuous linear representation of topological groups into a topological vector space. Futhermore, we have some special continuous linear representations, that are called a bar continuous linear representation, a subrepresentation, a quotient representation and the relationship of them. We have some properties of a continuous linear representation as irredusible, complete redusible, such that every irredusible continuous linear representation is complete redusible and if given a complete reducible continuous linear representation, we obtain a decomposition of the representation space, that is a decomposition of a topological vector space.