Povzetek

V delu so za začetek predstavljene osnove algebraične geometrije in konstrukcija ter opis Grassmannove varietete. Glavni del zajema opis množice invariantnih podprostorov $S_A(k)$ dimenzije k dane linearne preslikave A na vektorskem prostoru končne dimenzije. Te tvorijo še ne dokončno raziskane podvarietete Grassmannove varietete.
V primeru, ko je preslikava A nilpotentna, so podane tudi enačbe, ki nam določajo varieteto $S_A(k)$. V splošnem je podmnožica varietete $S_A(k)$, ki vsebuje prostore z določeno ciklično strukturo, povezana množica, vendar ni nujno varieteta. Vendar pa je ta podmnožica gladka podmnogoterost Grassmannove varietete.

Ključne besede: varieteta, Grassmannova varieteta, Schubertova varieteta, invariantni podprostori

Abstract

The begining of this work consists of basic ideas of algebraic geometry, construction and description of the Grassmann variety. In the main part the set $S_A(k)$ of k–dimensional invariant subspaces of linear transformation A on finite–dimensional vector space is discussed. This set belongs to a not yet studied class of subvarieties of the Grassmann variety. In the case when A is a nilpotent linear transformation, the equations for the variety $S_A(k)$ are given. In general, the subset of $S_A(k)$ consisting of subspaces with a fixed cyclic structure is connected, but need not be a variety. However, it is a smooth submanifold of the Grassmann variety.

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Key words: variety, Grassmann variety, Schubert variety, invariant subspace

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