Povzetek

Namen tega dela je predstaviti osnovni izrek geometrije pravokotnih matrik. V tej geometriji so točke prostora $m \times n$ matrike nad komutativnim obsegom karakteristike nič. Na prostoru imamo delovanje grupe transformacij, katero bomo skušali opisati s čim manj geometričnimi invariantami. Videli bomo, da je invariantnost sosednosti točk že dovolj za karakterizacijo te grupe transformacij prostora.

Uporaba osnovnega izreka geometrije pravokotnih matrik v algebri je prikazana v četrtem poglavju. Zaradi celovitosti dela si bomo v prvem poglavju osvežili znanje linearne algebre in spotoma uvedli še nekaj oznak, katere bomo uporabljali v nadaljevanju. Osnovni izrek afine geometrije, ter njegov dokaz, zavzema večji del drugega poglavja.

Ključne besede: rang, afina geometrija, geometrija matrik

Matematična predmetna klasifikacija (2000): 15A03, 15A04, 51K99

Abstract

Our aim is to study the geometry of rectangular matrices. In this geometry, the points of the space are $m \times n$ matrices over a commutative field with zero characteristic. To such space there is associated a group of motions, which we would like to characterize by as few geometric invariants as posible. We will see that the ivariance of adjacency alone is sufficient to characterize the group of motions of the space.

Applications to problems in algebra are included in Chapter 4. In order to be as self-contained as possible the Chapter 1 covers some material of linear algebra. The fundamental theorem of the affine geometry constitutes the main part of Chapter 2.

Key words: rank, affine geometry, geometry of matrices,

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5 Literatura

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