POVZETEK

Diplomska naloga je namenjena bločnim matrikam. Teme vključujejo elementarne transformacije, determinanto in inverz bločnih matrik. Začnemo z elementranimi transformacijami na bločnih matrikah, sledi inverz in rang vsote ter produkta bločnih matrik. Nato so predstavljeni različni dokazi izrekov, v katerih imata produkta AB in BA matrik A in B dimenzije $m \times n$ in $n \times m$ enake neničelne lastne vrednosti. Ob koncu diplomske naloge še predstavimo uporabo zveznosti pri dokazovanju.

ABSTRACT

This dissertation is devoted to the techniques of partitioned (block) matrices. Topics include elementary operations, determinants, and inverses of partitioned matrices. We begin with the elementary operations of block matrices, followed by discussions of the inverse and rank of the sum and product of matrices. We then present four different proofs of the theorem that the products AB and BA of matrices A and B of sizes $m \times n$ and $n \times m$, respectively, have the same nonzero eigenvalues. At the end of this dissertation we discuss the often-used matrix technique of continuity argument.

Literatura

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