



INTISARI

Ketaksamaan Nilai Singular dan Norma yang Terkait dengan Matriks Blok 2×2 Semidefinit Positif

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Pada skripsi ini dibahas ketaksamaan nilai singular dan norma yang muncul dari matriks blok semidefinit positif berukuran 2×2 . Berdasarkan prinsip monotonitas Weyl, sifat norma *unitarily invariant*, serta beberapa hasil dasar dalam analisis matriks, diperoleh sejumlah ketaksamaan yang melibatkan hasil kali, penjumlahan, dan jumlahan langsung matriks. Selain itu, dikaji pula ketaksamaan nilai singular dan norma yang berlaku pada matriks blok $\begin{bmatrix} A & B \\ B^* & C \end{bmatrix}$ dengan asumsi submatriks A dan B saling komutatif.



ABSTRACT

SINGULAR VALUE AND NORM INEQUALITIES ASSOCIATED WITH 2×2 POSITIVE SEMIDEFINITE BLOCK MATRICES

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In this undergraduate thesis, singular value and norm inequalities arising from 2×2 positive semidefinite block matrices are discussed. Based on Weyl's monotonicity principle, properties of unitarily invariant norms, and several fundamental results in matrix analysis, a number of inequalities involving matrix products, sums, and direct sums are obtained. In addition, inequalities for singular values and norms that hold for block matrices $\begin{bmatrix} A & B \\ B^* & C \end{bmatrix}$ are also investigated under the assumption that the submatrices A and B commute.