journal of inequalities in pure and applied mathematics
issn: 1443-5756

Volume 6, Issue 4, Article 124

Lower Bounds for the Spectral Norm

Authors: Jorma K. Merikoski, Ravinder Kumar,

Keywords: Spectral norm, Singular values.

Date Received: 20/12/04

Date Accepted: 01/09/05

Subject Codes: 15A60, 15A18.

Editors: Simo Puntanen,

Abstract: Let $\mathbf{A}$ be a complex $m \times n$ matrix. We find simple and good lower bounds for its spectral norm $\|\mathbf{A}\| = \max\{\, \|\mathbf{Ax}\| \mid \mathbf{x} \in \mathbb{C}^n, \|\mathbf{x}\| = 1 \,\}$ by choosing $\mathbf{x}$ smartly. Here $\|\cdot\|$ applied to a vector denotes the Euclidean norm.