



INEQUALITIES BETWEEN $|A| + |B|$ AND $|A^*| + |B^*|$ *

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Abstract. Let A and B be complex square matrices. Some inequalities between $|A| + |B|$ and $|A^*| + |B^*|$ are established. Applications of these inequalities are also given. For example, in the Frobenius norm,

$$\|A + B\|_F \leq \sqrt[4]{2} \| |A| + |B| \|_F .$$

Key words. Unitarily invariant norms, Frobenius norm, Singular values.

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