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THE POSSIBLE SHAPES OF NUMERICAL RANGES

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Abstract. Which convex subsets of \( \mathbb{C} \) are the numerical range \( W(A) \) of some matrix \( A \)? This paper gives a precise characterization of these sets. In addition to this we show that for any \( A \) there exists a symmetric \( B \) of the same size such that \( W(A) = W(B) \) thereby settling an open question from [2].


Keywords and phrases: Numerical range, linear matrix inequalities.

REFERENCES


