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POLYNOMIAL INVERSE IMAGES AND POLYNOMIAL NUMERICAL HULLS OF NORMAL MATRICES

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Abstract. Let $A \in M_n$ be a normal matrix and let $k \in \mathbb{N}$. In this note we introduce the notion "Polynomial inverse image of order k". The polynomial numerical hull of order k, denoted by $V^k(A)$ are characterized by the intersection of polynomial inverse images of order k. Also, the locus of $V^{n-1}(A)$ in the complex plane are determined.

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