Envelope: Localization for the Spectrum of a Matrix

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Abstract

New and old results will be presented on the *envelope*, $E(A)$, which is a bounded region in the complex plane that contains the eigenvalues of a complex matrix A. $E(A)$ is the intersection of an infinite number of regions defined by elliptic curves. As such, $E(A)$ resembles and is contained in the numerical range of A, which is the intersection of an infinite number of half-planes. The *envelope*, however, can be much smaller than the numerical range, while not being much harder to compute.

References

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