THE EFFECT OF AGGRESSIVE EARL DEFLATION ON THE CONVERGENCE OF THE QR ALGORITHM

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Abstract

Aggressive early deflation [1] has proven to significantly enhance the convergence of the QR algorithm for computing the eigenvalues of a nonsymmetric matrix. It is shown that this deflation strategy is equivalent to extracting converged Ritz vectors from certain Krylov subspaces. As a special case, the single-shift QR algorithm enhanced with aggressive early deflation corresponds to a Krylov subspace method whose starting vector undergoes a Rayleighquotient iteration. These observations are used to derive improved convergence bounds for the QR algorithm.

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References

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