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Explicit convergence region of Newton's method for the matrix p th root

For a square matrix with all eigenvalues in a suitable region in the complex plane, its principal p th root exists and can be approximated by the quadratically convergent sequence generated by Newton's method (starting from the identity matrix). Such a region is called a convergence region for Newton's method. In this talk, we present an explicit convergence region that drastically expands all existing ones.