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ARNOLDI-FABER METHOD FOR LARGE NON HERMITIAN EIGENVALUE PROBLEMS*

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Abstract. We propose a restarted Arnoldi's method with Faber polynomials and discuss its use for computing the rightmost eigenvalues of large non hermitian matrices. We illustrate, with the help of some practical test problems, the benefit obtained from the Faber acceleration by comparing this method with the Chebyshev based acceleration. A comparison with the implicitly restarted Arnoldi method is also reported.

Key words. Krylov space, block Arnoldi, Faber polynomials, Schwarz-Christoffel.

AMS subject classifications. 65F10.

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