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*Investigations in Improved Iterative
Methods For Solving Sparse Systems of
Linear Equations*

Submitted by:

E. B. Saff
Center for Mathematical Services
University of South Florida
Tampa, Florida



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June 1, 1979 - May 31, 1980

E. B. Saff, Principal Investigator

The research conducted by the above principal investigator during the period June 1, 1979 to May 31, 1980, has resulted in the following research articles which have either appeared in print, or have been accepted in refereed mathematical journals, in this period.

1. M. Lachance, E. B. Saff, and R. S. Varga, "Inequalities for polynomials with a prescribed zero"; Math. Zeit. 168(1979), 105-116.
2. N. Anderson, E. B. Saff, and R. S. Varga, "On the Eneström-Kakeya Theorem and Its Sharpness"; Linear Algebra and Appl. 28(1979), 5-16.
3. M. Lachance, E. B. Saff, and R. S. Varga, "Bounds for incomplete polynomials vanishing at both endpoints of an interval"; Constructive Approaches to Mathematical Models (C. V. Coffman and G. J. Fix, ed.), pp. 421-437, Academic Press, Inc., New York, 1979.
4. E. B. Saff and R. S. Varga, "Remarks on some conjectures of G. G. Lorentz", J. Approximation Theory (to appear).
5. E. B. Saff and R. S. Varga, "On incomplete polynomials. II", Pacific J. Math. (to appear).
6. N. Anderson, E. B. Saff, and R. S. Varga, "An extension of the Eneström-Kakeya Theorem and its sharpness", SIAM J. Math. Anal. (to appear).
7. M. G. de Bruin, E. B. Saff, and R. S. Varga, "On zeros of generalized Bessel polynomials"; Indag. Math. (to appear).

8. R. S. Varga, E. B. Saff, and V. Mehrmann, "Incomplete factorizations of matrices and connections with H-matrices", SIAM J. Num. Anal. (to appear).
9. M. G. de Bruin, E. B. Saff, and R. S. Varga, "On two conjectures on the zeros of generalized Bessel polynomials", Proceedings of the Lorentz Conference on Approximation Theory III, held in Austin, TX, in January, 1980 (to appear).
10. E. B. Saff, J. L. Ullman, and R. S. Varga, "Incomplete polynomials: an electrostatic approach", Proceedings of the Lorentz Conference on Approximation Theory III, held in Austin, TX, in January, 1980 (to appear).
11. E. B. Saff, "An Introduction to the Convergence Theory of Padé Approximants", Conference Proceedings, Aspects of Contemporary Complex Analysis, held in Durham, England, in 1979; Academic Press (to appear).