College of Engineering and Science

RESUME - William F. Moss

PERSONAL DATA

Professor
Department of Mathematical Sciences
Clemson University
Clemson, SC 29634-1907
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November 25, 1944
Atlanta, Georgia
USA
257-70-8402

EDUCATION

Ph.D., University of Delaware, 1974, Mathematics
B.S., M.I.T., 1966, Electrical Engineering

PROFESSIONAL EXPERIENCE

Clemson University, 1990- , Professor of Mathematical Sciences
Clemson University, 1983-90, Associate Professor of Mathematical Sciences
Old Dominion University, 1981-1983, Assistant Professor of Mathematics
Georgia Institute of Technology, 1974-1981, Assistant Professor of Mathematics
Naval Nuclear Power School, 1967-1971, Instructor of Physics and Mathematics
Lockheed-Georgia Company, 1966-1967, Associate Aircraft Design Engineer

CONSULTING EXPERIENCE

Consultant to IMSL, Houston, Texas (1986-92), software testing.
Consultant to ICASE, NASA Langley, Langley, Virginia (1982-1985), noise reduction modeling.

MEMBERSHIPS

Member, Society for Industrial and Applied Mathematics, SIAM, (1974-)

PUBLICATIONS.

Refereed Journal Publications

Moss, W.F., "A remark on convergence of test functions," *J. Austrial. Math. Soc.*, **20** (Series A), 73-76 (1975).

Moss, W.F., "Approximation of exterior conformal mappings," *Anales Polonici Mathematici*, **XXXV**, 55-56 (1977).

Moss, W.F. and Piepenbrink, J., "Positive solutions of elliptic equations," *Pac. J. Math.*, **75**, 219-226 (1978).

Moss, W.F. and Christensen, J Scattering and heat transfer by a strip," *J. of Integral Equations*, **4**, 299-317 (1980).

Moss, W.F., "Fundamental solutions of degenerate or singular elliptic equations," *JMAA*, **78**, 574-587 (1980).

Moss, W.F. and Weyland, N Zeros of functions of finite order on the ball," *Bulletin Malaysian Math. Soc.*, **4**, No. 1 (1982).

Moss, W.F., "Numerical solution of integral equations with convolution kernels," *J. of Integral Equations*, **4**, 253-264 (1982).

Moss, W.F., "The two-dimensional oscillating airfoil: a new implementation of the Galerkin method," *SIAM J. of Numer. Anal.*, **20**, No. 2, 391-399 (1983).

Moss, W.F., "Numerical solution of integral equations with convolution kernels - II," *J. of Integral Equations*, **1**, 1-9 (1984).

Demko, S., Moss, W.F. and Smith, P.W., "Decay rates for inverses of band matrices," *Math. Comp.*, **43**, No. 168, 491-499 (1984).

Moss, W.F. and Smith, P.W., "Generalized eigenvalue approximation for band matrices," *Approximation Theory and its Applications*, **1**, No. 2, 51-70 (1985).

Moss, W.F., "Collocation for an integral equation arising in duct acoustics," *JCP*, **64**, No. 2, 443-457 (1986).

Moss, W.F., Smith, P.W. and Ward, J.D., "Nonlinear eigenvalue approximation," *Numer. Math.*, **52**, 365-375 (1988).

Cox, C. and Moss, W.F., "Backward error analysis for a pole assignment algorithm," *SIAM J. Matrix Anal. Appl.*, **10**, No. 4, 446-457 (1989).

Riedl, C., Qian, C., Savitsky, G.B., Spencer, H.G. and Moss, W.F., "Mathematical modeling of the concentration dependence of competitive binding of counterions in polyelectrolytes," *Macromolecules*, **22**, 3982-3986 (1989).

Riedl, C., Savitsky, G.B., Spencer, H.G. and Moss, W.F., "Numerical and NMR studies of the competitive binding of counterions in polyelectrolytes," *Polymer*, **32**, No. 8, 1504-1509 (1991).

Cox, C. and Moss, W.F., "Backward error analysis for a pole assignment algorithm II: the complex case," *SIAM J. Matrix Anal. Appl.*, **13**, No. 4, 1159-1171 (1992).

Zhang, H. and Moss, W.F., "Using Parallel Banded Linear System Solvers in Generalized Eigenvalue Problems," *Parallel Computing*, **20**, 1089-1105 (1994).

Lagu, S., Bearden, G., Savitsky, G.B., Spencer, H.G. and Moss, W.F., "Numerical and experimental studies of territorial binding of counterions in polyelectrolyte solutions including the added salt case," *Polymer*, **35**, No. 15, 3268-3271 (1994).

Forney, G.P. and Moss, W.F., "Numerical characteristics of zone fire models," *J. of Fire Science and Technology*, **14**, 49-60 (1994).

Conference Proceedings (Reviewed)

Moss, W.F., "Numerical Solution of Singular Integral Equations: A new implementation of the Galerkin method for a class of singular and Cauchy singular integral equations," *Proceedings of the Fifth IMACS International Symposium on Computer Methods for Partial Differential Equations*, Lehigh University, Bethlehem, Pennsylvania (June 1984).

Moss, W.F., Smith, P.W. and Ward, J.D., "On nonlinear eigenvalue problems," *Proceedings of the Fifth International Symposium on Approximation Theory, Texas A&M University* (January 1986).

Moss, W.F., "Exploring shape preserving interpolation using interactive graphics," *Proceedings of the Sixth International Symposium on Approximation Theory, Texas A&M University* (January 1989).

Conference Proceedings (Unreviewed)

Moss, W.F. and Smith, P.W., "The Penurious Grapher," *Proceedings of the IMSL User Group North America Third Annual Conference*, (May 1990).

Research Reports

Moss, W.F., "Computational Heat Transfer for Zone Fire Modeling," Clemson University, *Final Report for Grant No. 60NANB2D1281*, NIST, (March 1996).

Zhang, H. and Moss. W.FUsing Parallel Banded Linear System Solvers in Generalized Eigenvalue Problems," *Contractor Report 191540, ICASE Report No. 93-71*, NASA, (September 1993).

Brannan, J.R., Cox, C.L., and Moss, W.F., "The Effects of Heterogeneity and Diffusion on the Performance of a Recovery Well," *SCUREF Task Order No. 22*, (April 1993).

Moss, W.F., "Computational Heat Transfer for Zone Fire Modeling," *Report for Grant No. 60NANB2D1281*, NIST , (December 1993).

Forney, G.P. and Moss, W.F., "Implicitly Coupling Heat Conduction into a Zone Fire Model," *NISTIR 4886*, NIST, (July 1992).

Moss, W.F., "Numerical Analysis Support for Compartment Fire Modeling and Incorporation of Heat Conduction into a Zone Fire Model," *NISTGCR*, NIST, (April 1992).

Forney, G.P. and Moss, W.F., "Numerical Characteristics of Zone Fire Models," *NISTIR 4763*, NIST, (March 1992).

Moss, W.F., "Spinning mode acoustic radiation from the flight inlet," *NASA Contractor Report 172273*, ICASE (1983).

Other Scholarly Publications

Moss, W.F. and Crosbie, S., "SOP: Standard Operating Procedures for the Unix Network, Department of Mathematical Sciences," Clemson University, (June 1992).

Moss, W.F. and Crosbie, S., "MUG: Mathematical Sciences Unix Network Users Guide, Department of Mathematical Science," Clemson University, (June 1992).

Moss, W.F., "IMSL Libraries Training Manual," IMSL, Houston, Texas, (1991).

Cooper, L.Y., Forney, G.P., and Moss, W.F., "Consolidated Compartment Fire Model (CCFM), Computer Application CCFM.VENTS, Part IV: Users' Reference Guide," NIST Technical Report, (1989).

Moss, W.F. and Smith, P.W., "Nonlinear eigenvalue problems," *IMSL Directions*, 3, No. 1 (1986).

PRESENTATIONS

Moss, W.F., "Coupling Heat Conduction to a Zone Fire Model," Annual Conference on Fire Research, NIST, Gaithersburg, MD, (October 1993).

Moss, W.F., "Numerical Characteristics of a Zone Fire Model," Fourth CIB Workshop on Fire Modeling, NIST, (February 1990).

Moss, W.F., "Numerical Characteristics of Zone Fire Models Center for Fire Research Annual Conference, Gaithersburg, Maryland (November 1989).

Moss, W.F., "Numerical Characteristics of Zone Fire Models," SIAM Annual Meeting, San Diego, California, (July 1989).

Moss, W.F., "Stiff Equations Arising in Fire Modeling," SIAM Annual Meeting, San Diego, California, (July 1989).

Moss, W.F., "Exponential Decay of the Inverse of Infinite Band Matrices", Canadian Applied Mathematics Society Tenth Annual Meeting, Winnipeg, Manitoba, (June 1989).

Moss, W.F., "Improvements to the Fire Simulation Code CCFM.VENTS," Center for Fire Research, NIST, Gaithersburg, Maryland, (February 1989).

Moss, W.F., "Decay Rates for the Inverses of Band Matrices," Thompson Lectures on Matrix Theory, The Johns Hopkins University, Baltimore, Maryland, (June 1988).

Moss, W.F., "Sensitivity Analysis for the Pole Assignment Problem," SIAM Conference on Applied Linear Algebra, Madison, Wisconsin, (May 1988).

Moss, W.F., "Backward Error Analysis for a Pole Assignment Algorithm," SEAS SIAM Meeting, Athens, Georgia, (March 1987).

Moss, W.F., "Nonlinear Eigenvalue Approximation," SIAM Conference on Linear Algebra, Boston, Massachusetts, (August 1986).

Moss, W.F., "Generalized Eigenvalue Approximation for Band Matrices," SIAM Spring Meeting, Pittsburgh, Pennsylvania, (June 1985).

Moss, W.F., "Nonlinear Eigenvalue Approximation," Second SIAM Conference on Applied Linear Algebra, Raleigh, North Carolina, (April 1985).

Moss, W.F., “Spin Mode Acoustic Radiation from a Thick Wall Duct,” SIAM 1983 Fall Meeting, Norfolk, Virginia, (November 1983).

Moss, W.F., “The Two-Dimensional Oscillating Airfoil,” SEAS SIAM Meeting, Marietta, Georgia, April 1981.

Moss, W.F., “Scattering and Heat Transfer by a Strip,” AFOSR/ARO Symposium on Ill-posed Problems, Newark, Delaware, (October 1979).

SPONSORED RESEARCH

"Numerical Analysis for a Zone Fire Model with Many Compartments," NIST, Principal Investigator, $58,176, ($58,176), (1997-1999).

"Computational Heat Transfer in Zone Fire Modeling," NIST, Principal Investigator, $53,879, ($53,879), (1994-1996).

"Computational Heat Transfer in Zone Fire Modeling," NIST, Principal Investigator, $60,733, ($60,733), (1992-1993).

"Matrix Visualization using IMSL/IDL," IMSL, Principal Investigator, $10,000, ($10,000), (1992).

"Competitive Analysis of Scientific Fortran and C Libraries," IMSL, Principal Investigator, $13,100, ($13,100), (1991).

"The Effects of Heterogeneity and Diffusion on the Performance of a Recovery Well," SCUREF, Co-principal Investigator, $201,751, ($50,000), (1991-1993).

"Incorporating Convective and Radiative Heat Transfer into the Code CCFM.VENTS," NIST, Principal Investigator, $32,977, ($32,977), (1989-1990).

"Numerical Analysis Support for Compartment Fire Modeling Code Development," NIST, Principal Investigator, $54,233, ($54,233), (1988-1989).

OTHER SPONSORED

SCREMS Equipment Grant, NSF, $20,000, (1994).

Mathematical Sciences Laptop Project, Provost Innovation Grant, $49,000, (1997-1998).

CoES Laptop Program, Provost Innovation Grant and Matching College Funding, $225,000, (1998-).

GRADUATE STUDENT ADVISING

Doctoral Graduates

Nylen, P.M., "Submultiplicativity and Matrix Products," (May 1992).

Masters Graduates

Hammond, C., (MS) "GPS Mapping of the SC Botanical Garden," (May 1998).

Guest, A., (MS) "GPS Mapping of the Bike Trails in the Clemson Experimental Forest," (May 1998).

Kennedy, S., (MS) “Trail Mapping in the Clemson Experimental Forest,” (May 1997).

Ward, A., (MS) “fat2dview: A 2-D Flow and Transport Viewer,” (May 1996).

Wassermann, R., (MS) “Simulation of 2-D Contaminant Transport in Groundwater,” (May 1993).

Rivers, J., (MS) “An Interactive Algorithm for Shape Preserving Quadratic Interpolants,” (May 1988).

Anderson, B., (MS) “Shape Preserving Piecewise Rational Interpolants,” (May 1987).

Owens, M., (MS) “An Eigenvalue Assignment Algorithm,” (August 1987).

Nylen, P., (MS) “Piecewise Cubic Interpolants from Optimization Problems in the Hilbert Space $L_2[a,b]$,” (August 1986).

Hudnall, L., (MS) “Adaptive Gauss-Kronrod Integration,” (August 1986).

Aneja, A., (MS) “Application of Complete Elliptic Integrals to the Boundary Integral Equation Formulation of Axisymmetric Problems,” (August 1984).

Current Graduate Advising

Twarek, M., (MS), “Serving Maps over the World Wide Web,” (May 1999).

TEACHING

Courses Taught (Beginning Fall 1990)

MTHSC 206, Calculus III, F90, S91.
MTHSC 460, Num. Anal. I, F90, S91.

MTHSC 434/634, Adv. Eng. Math, F91, S92.
MTHSC 460/660, Num. Anal. I, F91, S92.

MTHSC 434/634, Adv. Eng. Math, F92, S93.
MTHSC 460/660, Num. Anal. I, F92, S93.

MTHSC 434/634, Adv. Eng. Math, F93, S94.
MTHSC 460/660, Num. Anal. I, F93, S94.

MTHSC 434/634, Adv. Eng. Math, F94, S95.
MTHSC 826, Intro. PDE, F94.
MTHSC 460/660, Num. Anal. I, S95.

MTHSC 434/634, Adv. Eng. Math, F95, S96.
MTHSC 460/660, Num. Anal. I, F95, S96.

MTHSC 434/634, Adv. Eng. Math, F96, S97.
MTHSC 861, Num. Linear Algebra, F96.
MTHSC 460/660, Num. Anal. I, S97.

MTHSC 434/634, Adv. Eng. Math, F97, S98.
MTHSC 460/660, Num. Anal. I, F97, S98.

MTHSC 434/634, Adv. Eng. Math., F98, S99.
MTHSC 311 Linear Algebra, F98.
MTHSC 460/660, Num. Anal. I, S99.

New Course Development

MTHSC 434/634, Course Notes, Web based, MATLAB simulations and projects.

UNIVERSITY AND PUBLIC SERVICE

Committees

Department:	Chair, Tenure Promotion and Reappointment (1995-1996)
	Member, Tenure Promotion and Reappointment (1991-)
	Member, Mathematical Sciences Council (1985-1987, 1988-1989, 1991-1992, 1998-1999)
	Member, Undergraduate Affairs (1983-1987, 1996-1997)
	Member, Personnel (1984-1986)
	Member, Educational Computing (1983-1987)
	Member, Computing (1992-)
	Chair, Computing (1992-1993)
	Member, Research (1992-1993, 1996-1997)
	Member, Graduate Affairs (1987-1989, 1990-1991, 1993-1994)
	Member, Head Search (1987-1988)
College:	Member, Teaching Effectiveness (1997-)
	Member, Computing (1998-)
	Member, Computing Executive (1998-)
	Member, SUCEED CIT, FD, TBCD (1998-)
	Chair, Computing (1990-1991)
	Member, Research Strategic Planning (1997-1998)
University:	Member, Research Council (1997-)
	Member, CLE (1997-)

Other Service

Presenter, SUCCEED New Faculty Workshop, (1998).
Presenter, WebCT Workshops (1998)

Presenter, MATLAB Workshop (1997)
Department Webmaster (1992-)
Department Unix Network Manager (1990-1993)
Co-developer of Martin Hall renovation plan (1996-1997)
WebCT Administrator (1997-)
WebCT Advisory Board (1999-)
Reviewer for Mathematical Reviews (1990-)

MISCELLANEOUS

(Special achievements, accomplishments, scholarly activities worthy of note, but not included in the above format.)

February 23, 1999