

CURRICULUM VITAE MIN SUN

EDUCATION

Ph.D. - Wayne State University, Michigan, 1987

EMPLOYMENT

University of Alabama, Department of Mathematics, Tuscaloosa, AL, 2000-present,
Professor

University of Alabama, Dept of Mathematics, Tuscaloosa, AL, 1994-2000, Associate
Professor

University of Alabama; Tuscaloosa, AL 1989-1994, Assistant Professor

University of Houston; Houston, TX 1987-1989, Assistant Professor

Wayne State University; Detroit, MI 1987, Research Fellow

Wayne State University; Detroit, MI 1985-1986, Graduate Teaching Assistant

Wayne State University; Detroit, MI 1984-1985, Research Fellow

Wayne State University; Detroit, MI 1982-1984, Graduate Teaching Assistant

RESEARCH INTERESTS

My primary research area was in the optimal control theory and applications (deterministic, stochastic, and numerical). However since 1989 I have been developing research interests in a much wider range of areas of applied mathematics and related fields, including linear and nonlinear programming, statistics, numerical mathematics, mathematical economics, power systems, artificial intelligence, groundwater modeling, and modeling and simulation for magnetic materials and information technology.

SELECTED LECTURE/POSTER PRESENTATIONS

AMS-SIAM Summer Seminar, Colorado State University, Fort Collins, CO, 1988.

Second SIAM Conference on Linear Algebra in Signals, Systems & Controls, San Francisco, CA, November 1990.

SIAM Conference on Mathematical and Computational Issues in the Geosciences, Houston, TX, 1993.

Second International Conference on Groundwater Ecology, Atlanta, GA, March 1994.

1994 Spring Meeting of American Geophysical Union, Baltimore, MD, 1994.

14th IMACS World Congress on Computation and Applied Mathematics, Atlanta, GA., 1994.

1994 Groundwater Modeling Conference, Fort Collins, CO, 1994.

Third SIAM Conference on Control and Its Applications, St. Louis, MO., 1995.

1995 Spring Meeting of American Geophysical Union, Baltimore, MD., 1995.

Los Alamos Workshop on Math Issues in Bioremediation, Los Alamos, NM, May, 1997.

SIAM Conference on Math Computation in Geosciences, Albuquerque, NM, May, 1997.

The 43rd Annual Conference on Magnetism and Magnetic Materials, Miami, FL, Nov., 1998.

IEEE InterMag Conference, Seoul, South Korea, April, 1999.

4th Mississippi State - UAB Conference on Differential Equations & Computational Simulations, Mississippi State, MS, May, 1999.

1999 Spring Meeting of American Geophysical Union, Boston, MA, June, 1999.

1999 IEEE International Conference on Magnetism, South Korea, June, 1999.

XIII International Conference on Computational Methods in Water Resources, June 2000,
 Calgary, Canada

Fall Meeting of American Geophysical Union San Francisco, CA, Dec, 2000.

46th Annual Conference on Magnetism & Magnetic Materials, Seattle, WA, Nov. 2001.

MINT Seminar on Research in Magnetic Materials, Tuscaloosa, AL, May, 2002.

AMS Southeastern Spring Meeting, Tallahassee, FL, March, 2004.

AMS Joint Meetings, Atlanta, GA, Jan. 5-8, 2005.

6th Mississippi State - UAB Conference on Differential Equations & Computational
 Simulations, Mississippi State, May, 2005.

10th Joint MMM/Intermag Conference, Baltimore, MD, Jan. 2007.

AMS Annual Joint Meetings, New Orleans, LA, Jan. 5-8, 2007.

The 39th Southeastern Symposium on System Theory, Macon, GA, March, 2007

52nd Magnetism and Magnetic Materials Conference, Tampa, Florida, 11/5/07-11/9/07

SIAM Conference on Optimization, Boston, MA, May, 2008.

IAENG International Conference on Operations Research, March, 2009.

Colloquium Talk at Dept of Mathematics of Zhejiang University, Hangzhou, China,
 April, 2009.

Colloquium Talk at Dept of Mathematics of Zhejiang University of Technology,
 Hangzhou, China, April, 2009.

Colloquium Talk at Dept of Mathematics of Nanjing University, Nanjing, China, April,
 2009.

Colloquium Talk at Dept of Applied Mathematics of Nanjing University of Science and
 Technology, Nanjing, China, April, 2009

Colloquium Talk at Dept of Mathematics of Ningbo University, Ningbo China, April,
 2009.

Seminar Talk at Department of Systems Engineering and Engineering Management of
 Chinese University of Hong Kong, Hong Kong, May, 2009.

International Conference on Engineering and Computational Mathematics, Hong Kong,
 May, 2009.

First World Congress on Global Optimization in Engineering & Science, Changsha,
 China, June, 2009

Colloquium Talk at Los Alamos National Laboratory in New Mexico, July, 2009.

SIAM Annual Meeting, Pittsburgh, Pennsylvania, July, 2010.

MAA SOUTHEASTERN Meeting, Tuscaloosa, Alabama, April 1-2, 2011. *An analysis of
 off-aligned exchange bias*, Congxiao Liu, Matthew Edwards, Min Sun, Lee F,
 Jeffrey Wang, Alabama A&M University, co-author

COURSES TAUGHT AT UA

Remedial Math & Precalculus: MA 005, MA 109, MA 120

Calculus: MA 121, MA 131, MA 125, MA 126, MA145, MA 227

Complex Calculus: MA 485

Computer Based Honors Program:
 CBH 201*, CBH 202*, CBH 301*, CBH 302*, CBH 451*, CBH 452*.

Differential Equations: MA 253

Linear Algebra: MA 255, MA 237

Discrete Mathematics: MA 301

Numerical Mathematics: MA 300, MA 311, MA 511

Probability: MA 355

Statistics: MA 451/551, MA 554

Optimization: MA 321, MA 485/520/420, MA 486/521/421

Optimal Control: MA 530, MA 692

Special Topics in Applied Mathematics: MA 537*

Dissertation/Project: MA 495*, MA 598*, MA 599*, MA 698*, MA 699*

*They were not counted in my official teaching load.

COURSES TAUGHT AT OTHER UNIVERSITIES

Remedial Mathematics, College Algebra, Discrete Mathematics, Calculus Sequence, Linear Algebra, Differential Equations, Probability, Statistics

REFEREE

Complex Systems.

Journal of American Water Resources Association.

Mathematics of Operations Research

IEEE Conferences

J. of Global Optimization

Mathematical and Computer Modeling

European Journal of Operations Research

International Conference of Numerical Analysis and Applied Mathematics

BOOK REVIEW

1. Robust Kalman Filtering for Signals and Systems with Large Uncertainties.
2. Stochastic Methods for Flow in Porous Media.

SELECTED PAPER REVIEW

Jianhua Xiao and Jiasong Wang, A New Algorithm for Solving the Linear Complementary Problem, Numer. Math. J. Chinese Univ. 17 (1995), no. 1, 1-11.

Kushner, H.J., Domain decomposition methods for large Markov chain control problems and nonlinear elliptic-type equations. SIAM J. Sci. Comput. 18(1997), no.5, 1494-1516.

V. Dargan, and T. Morozan, Mixed Input-Output Optimization for Time Varying Ito Systems with State-Dependent Noise, Dynamics of Continuous, Discrete and Impulsive Systems, 3(1997), 317-333.

R. Ferretti, Dynamic Programming Techniques in the Approximation of Optimal Stopping Time Problems in Hilbert Spaces, Lecture Notes in Pure and Applied Math., Vol. 188, 153-166, 1997.

Sheskin, T.J., Computing the fundamental matrix for a nonirreducible Markov chain, Int. J. Math. Educ. Sci. Technol., 25(1997), 661-675.

R.J. Elliott and L. Aggoun, Measure change techniques in optimal control, Appl math Optim, 35(1997), 165-175.

D.P. Bertsekas, A new value iteration method for the average cost dynamic programming problem, SIAM J. Control Optim, 36(1998), 742-759.

P. Tseng, An incremental gradient projection method with momentum term and adaptive stepsize rule, SIAM J. Optim., 8(1998), 506-531.

- Petersen, Ian R. and Savkin, Andrey V., Robust Kalman filtering for signals and systems with large uncertainties, *Birkhäuser Boston, Inc., Boston, MA*, 1999
- L.D. Berkovitz, A Generalized Hamilton-Jacobi Bellman Equation for Deterministic Optimal Control Problems, Stochastic analysis, control, optimization and applications, pp.223-235, Systems Control Found. Appli., Birkhauser Boston, Boston, MA, 1999
- C.V. Rao, S.J. Wright, and J.B. Rawlings, Application of Interior-Point Methods to Model Predictive Control, *J. Optim. Theory Appli.*, 99(1998), 723-757.
- V. Iftode, Variational Solutions of Stationary Hamilton-Jacobi Equations, *Italian J. of Pure and Applied Math*, 5(1999),117-123
- Dynamic optimization for reachability problems, by A.B. Kurzhanski and P. Varaiya, *J. Optim. Theory Appl.* 108(2001), no. 2, 227-251
- Optimal Control of ∞ -dimensional stochastic systems via generalized solutions of HJB equations, by N.U. Ahmed, *Discuss. Math. Diff. Incl. Control Optim.*, 21(2001), 97-126.
- A class of stochastic optimal control problems with state constraint, by H. Ishii and P. Loreti, *Indiana University Mathematics Journal*, 51(2002), 1167-1196.
- Generalized solutions of HJB equations applied to stochastic control on Hilbert space, *Nonlinear Anal.* 54(2003), no.3, 495-523, by N.U. Ahmed
- A comparison theorem for Bellman equations of ergodic control, *Differential and Integral Equations* 16(2003), no.6, 641-651, by Y. Fujita and K. Ohmori
- A Nonrandom Variational Approach to Stochastic Linear Quadratic Gaussian Optimization Involving Fractional Noises by G. Jumarie, *J. Appl. Math. & Computing*, Vol. 19(2005), No. 1-2, pp19-32
- The one-dimensional Ising model: Mutation versus recombination, by S. Fischer, and I. Wegener, *Theoretical Computer Science*, 344(2005), pp208-225
- The NEWUOA software for unconstrained optimization without derivatives, by M.J.D. Powell, Large-scale nonlinear optimization, 255-297, *Nonconvex Optimization Appl.*, 83, Springer, NY, 2006
- S. Fischer, and I. Wegener, The one-dimensional Ising model: Mutation versus recombination, *Theoretical Computer Science*, 344(2005), pp208-225.
- A. Hedar and M. Fukushima, Derivative-free filter simulated annealing method for constrained continuous global optimization, *J. of Global Optimization*, 35(2006), 521-549.
- G. Liuzzi, S. Lucidi, and M. Sciandrone, A derivative-free algorithm for linearly constrained finite minimax problems, *SIAM J. Optim.*, 16(2006), 1054-1075.
- Xioagang Wang, Dong Liang, Xingdong Feng, Lu Ye, A derivative-free optimization algorithm based on conditional moments, *J. of Math. Anal. Appl.* 331(2007), 1337-1360.
- E. Conde, A branch and bound algorithm for the minimax regret spanning arborescence, *J. of Global Optimization*, 37(2007), 467-480
- Fáisca, Nuno P.; Kouramas, Konstantinos I.; Saraiva, Pedro M.; Rustem, Berç; Pistikopoulos, Efstratios N. A multi-parametric programming approach for constrained dynamic programming problems. *Optim. Lett.* 2 (2008), no. 2, 267--280. 90C39
- Hu, Gang; Feng, Xiang Qian; Wei, Cui Ping; Li, Zong Zhi Research on consistency and recursive priority of an interval number complementary judgment matrix. *J. Shandong Univ. Nat. Sci.* 42 (2007), no. 11, 5 pp
- Mazliak, Laurent; Nourdin, Ivan Optimal control for rough differential equations. *Stoch. Dyn.* 8 (2008), no. 1, 23—33.
- Frimannslund, Lennart; Steihaug, Trond A generating set search method using curvature information. *Comput. Optim. Appl.* 38 (2007), no. 1, 105--121.
- G. Fasano, J.L. Morales and J. Nocedal, On the geometry phase in model-based algorithms for derivative-free optimization, *Optimization Methods & Software*, 145-154, Vol.24, 2009.

G. Liuzzi and S. Lucidi, A derivative-free algorithm for inequality constrained nonlinear programming via smoothing of an l^∞ penalty function, *SIAM J. OPTIM.* Vol. 20(2009), No. 1, pp. 1–29

Y. Yang, and J. Cao, The optimization technique for solving a class of non-differentiable programming based on neural network method, *Nonlinear Analysis: Real World Applications*, Volume 11, Issue 2, April 2010, Pages 1108-1114.

Claudia D'Ambrosio, Antonio Frangioni, Leo Liberti, Andrea Lodi, On interval-subgradient and no-good cuts, *Operations Research Letters* 38 (2010) 341_345

F. Mendivil · R. Shonkwiler, Annealing a Genetic Algorithm for Constrained Optimization, *J Optim Theory Appl* (2010) 147: 395–410

SELECTED RESEARCH PROPOSALS SUBMITTED (*if also funded)

Mathematical Sciences Research Equipment, 1990, submitted to NSF, the principal investigator.

Field and Modeling Experiments to Study Pesticide Transport in the Vadose Zone of Alabama Soils Under Best Management Practices, 1992, submitted to Alabama EPA/EPSCoR Program, a principal investigator, jointly with Dr. S.A. Aburime et al.

Mathematical Analysis and Field and Laboratory Experiments to Study the Impact of Agriculture on Subsurface Ecology, 1992, submitted to EPA Robert S. Kerr Research Laboratory in Oklahoma, jointly with Dr. S.A. Belbas et al.

*Analytical and Numerical Issues of Some Optimal Control Problems in Environmental Research, 1993 RGC Grant, the principal investigator, total budget \$3,550.

Identification issues for Multi-Component Contaminant Transport and Fate in Groundwater, Water Resource Research Institute, a co-principal investigator, 1994.

10. Development of a Practical Tool for Optimization of Groundwater Remediation Designs, Gulf Coast Hazardous Substance Research Center, a co-principal investigator, 1993.

*Augmentation of Optimal Management Policy Selections to Groundwater Transport Model MT3D, funded by U.S. Geological Survey through Alabama Water Resource Research Institute, the principal investigator, total budget \$72,900, 1994.

Optimal Management of Drainage Ditches for Removing Agricultural Chemicals from Groundwater, U.S. Department of Agriculture, the co-principal investigator, 1994.

*Efficient Learning Algorithms for Designing Artificial Neural Networks with Application to Groundwater Remediation Problems, the principal investigator, UA SOMED Proposal, total budget \$16,700 1995.

*Augmentation of Optimal Management Policy Selections to Groundwater Transport Model MT3D, Phase II (Renewed), funded by U.S. Geological Survey through Alabama Water resource Research Institute, the principal investigator, total budget \$77,200, 1995.

Artificial Neural Network Based System Identification and Parameter Estimation with Application to Groundwater Management Problems, the principal investigator, UA SOMED Proposal, 1996.

Exchange Coupling & Transport Phenomena in Magnetic Layers with Non-Ideal Interfaces, as a co-investigator, U.S. Department of Energy, 1998.

*Modeling and simulation in magnetic materials research, as the principal investigator, funded by NSF through Center for Materials for Information Technology, \$14,400 plus about \$4,000 of tuition to fully support a Ph.D. student in applied math, with additional one summer month salary, total budget \$23,800, 1998.

*Subsurface Contamination Site Characterization Via a Computer-Aided Tool, as the principal investigator, funded by U.S. EPA through Gulf Coast Hazardous Substance Research Center, total budget \$69,000, 1998.

Investigation of numerical techniques for analyzing magnetic force microscope images and characterizing magnetic sensor materials, as the principal investigator, Mathematical Sciences Division of U.S. NSF, 1998.

*Modeling and simulation in micromagnetics research, as the principal investigator, funded by NSF through Center for Materials for Information Technology, \$14,400 plus about \$4,000 of tuition to fully support a Ph.D. student in applied math, with additional one summer month salary, total budget \$23,800, 1999.

*Subsurface Contamination Site Characterization Via a Computer-Aided Tool, Phase II, as the principal investigator, U.S. EPA's Gulf Coast Hazardous Substance Research Center, total budget \$69,370, 1999. This project was extended to Dec. 31, 2000. This project supported one full time GRA, one part time GRA, and two part time undergraduate student workers.

*Integrating Physics and Numerical Mathematics for Characterizing Magnetic Sensor Materials and Analyzing Magnetic Force Microscope Images, as the Principal Investigator, NSF, \$155,063, 2001.

Nonuniform Finite Difference Schemes with Flexible Tree Type Data Structure for Linear Elliptic and Parabolic Partial Differential Equations, as the Principal Investigator, NSF, \$148,837, 2001.

Incorporating Statistical Analysis Strategies into Global Optimization Methods Submitted to NSF, as the Principal Investigator, \$173,454, Nov. 2002.

Developing Hybrid Global Optimization Methods, Submitted to NSF, as the Principal Investigator, \$227,699, Nov. 2007.

Development of Fast Interval Based Search Methods for Continuous and Constrained Global Optimization. Submitted to NSF, as the Principal Investigator, \$233,160, Nov. 2008.

Developing Hybrid Interval-Based Global Optimization Methods Submitted to NSF, as the Principal Investigator, \$241,365, Nov. 2009.

PUBLICATIONS

On Singular Stochastic Control and Optimal Stopping Time Problems in Bounded Domains, Ph.D. Thesis, 1987.

M. Sun and J.L. Menaldi, Monotone control of a damped oscillator under random perturbations, IMA J. of Math. Control and Inf., 5 (1988), 169-186.

M. Sun, An optimal stopping time problem with time average cost in a bounded interval, Systems and Control Letters, 8 (1986), 173-180.

M. Sun, Singular control problems in bounded intervals, Stochastics, 21 (1987), 303-344.

M. Sun, Numerical solutions of singular stochastic control problems in bounded intervals, Lectures in Applied Mathematics, 26(1990), 619-643.

M. Sun, Singular stochastic control problems solved by a sparse simplex method, IMA J. of Math. Control and Inf., 6(1989), 27-38.

- M. Sun, Some analytical aspects of linear programming approach in numerical solution of singular stochastic control problems, *IMA J. of Math. Control and Inf.*, 6(1989), 21-26.
- M. Sun, An evolutionary monotone follower problem in $[0,1]$, *J. of the Australian Mathematical Society, Series B: Applied Mathematics*, 31(1989), 97-107.
- M. Sun, A multi-dim. optimal stopping time problem with time average criterion, *Optimal Control Appls. and Methods*, 11(1990), 85-93.
- M. Sun, Monotonicity of Mangasarian's iterative algorithm for generalized linear complementarity problems, *J. of Mathematical Analysis and Applications*, 144(1990), 474-485.
- M. Sun, Iterative algorithms for solving undiscounted Bellman equations, *Numer. Funct. Anal. & Optimiz.*, 11(1990), 149-166.
- M. Sun, Two adaptively stepped monotone algorithms for solving dynamic programming equations, *Numer. Funct. Anal. & Optimiz.*, 14(1993), 167-178.
- M. Sun, A revised simplex algorithm for finite Markov decision processes, *J. Optim. Theory Appl.*, 72(1993), 405-413.
- M. Sun, Alternating direction algorithms for solving Hamilton-Jacobi-Bellman equations, *Applied Math. Optim*, 34(1996), 267-277.
- M. Sun, Nested variational inequalities and related starting-stopping problems, *J. Appl. Proba.*, 29(1992), 104-115.
- M. Sun, Domain decomposition algorithms for solving Hamilton-Jacobi-Bellman equations, *Numer. Funct. Anal. & Optimiz.*, 14(1993), 145-166.
- M. Sun, (with R. Glowinski), Pathwise approximation and simulation for the Zakai filtering equation through operator splitting, *Calcolo*, 30 (1994), 219-239.
- M. Sun, Improved Dynamic Programming Algorithms for Sequential Decision Processes with Applications to Economic Dispatches of Power Systems, *Proceedings of the 25th IEEE Southeastern Symposium on System Theory*, 1993, 135-139.
- M. Sun (with S. Belbas), Optimal Observation Schedule for Identification of Nonlinear Distributed Systems with Applications, *Proceedings of the 25th IEEE Southeastern Symposium on System Theory*, 1993, 301-305.
- M. Sun, (with J.L. Menaldi et al.), Optimal starting-stopping problems for Markov-Feller processes, *Stochastics and Stochastic Reports*, 56 (1996), 17-32.
- M. Sun, (with C. Zheng et al.) Optimal management selections for groundwater resources, in the *Proceedings of 1994 Alabama Water Resources Conference and Symposium*, Gulf Shores, AL.

M. Sun (with C. Zheng et al.), Efficient local refinement schemes for finite difference groundwater stimulation models, in the Proceedings of the 2nd International Conference on Ground water Ecology, Atlanta, GA.

M. Sun (with C. Zheng et al.), Particle tracking method for solving ground water pollutant transport equations using efficient local refinement schemes, in the Proceedings of the 14th IMACS World Congress on Computation and Applied Mathematics, Atlanta, GA.

M. Sun (with C. Zheng et al.), A backward random walk particle tracking method for predicting ground water flow and contaminant levels at observation sites, in the Proceedings of 1994 Ground water Modeling Conference, Fort Collins, CO.

M. Sun (with C. Zheng et al.) Application of optimization methods to groundwater management and remediation problems, in the Proceedings of 1995 Alabama Water Resources Conference and Symposium, Gulf Shores, AL, 62-65.

M. Sun, Training multilayer feedforward neural networks using dynamic programming, in the Proceedings of the 28th IEEE Southeastern Symposium on System Theory, 1996, 163-167.

M. Sun, A Neural Network Based Parameterization Method for Distributed Parameter Identification, In the Proceedings of 30th Southeastern Symposium on System Theory, 1998, 361-365.

M. Sun (with H. Fujiwara et al.), A Dynamic Simulation Model of Magnetization Reversal, In the Proceedings of 30th Southeastern Symposium on System Theory, 1998, 93-97.

M. Sun (with C. Zheng), Long term groundwater management by a MODFLOW based dynamic optimization tool, J. of American Water Resources Association, 35(1999),99-111.

M. Sun (with J. Kim and H. Fujiwara), Simulating measurement noise effect in parameter identification of ferromagnetic and antiferromagnetic systems, In the Proceedings of 31st Southeastern Symposium on System Theory, 205-209, 1999.

M. Sun (with C. Zheng), Identification of distributed parameter systems with undetected parameter zones, In the Proceedings of 31st Southeastern Symposium on System Theory, 271-275,1999.

M. Sun (with H. Fujiwara et al.), A numerical model for estimating unknown magnetic parameters in studying ferromagnetic and antiferromagnetic coupled systems, J. Appl. Phys., 1999.

M. Sun (with H. Fujiwara), Spin fanning configurations in antiferromagnetic layers with a uniaxial anisotropy and torque transfer characteristics from top to bottom spins, J. Appl. Phys., 4940-4942, 1999.

M. Sun (with H.S. Cho et al.), Characteristics of 360-degree-domain walls observed by magnetic force microscope in exchange-biased NiFe films, J. Appl. Phys., 5160-5162, 1999.

M. Sun (with H. Fujiwara et al.) Effect of exchange coupling of polycrystalline antiferromagnetic layers on the magnetization behavior of soft magnetic layers, IEEE Transactions on Magnetics, 1999

M. Sun (with H. Fujiwara et al.), Decomposition of coupled magnetization loops, In the Proceedings of 32nd Southeastern Symposium on System Theory, 23-28, 2000

M. Sun (with J. Moore), An indirect optimization method for identification of distributed parameters, In the Proceedings of 32nd Southeastern Symposium on System Theory, 343-348, 2000

M. Sun (with J. Moore et al.), Soft Constraints in Identification of Distributed Parameters, in the Proceedings of 33rd Southeastern Symposium on System Theory, 2001.

M. Sun (C. Zheng), Calibration of 3-D groundwater model using hydrogeological parameter zones, Proceedings of XIII International Conference on Computational Methods in Water Resources, June 2000, Calgary, Canada.

M. Sun (with H. Fujiwara et al.), Local Optimization for Simulating Hysteretic Behavior of Exchange Coupled Magnetic Systems, in the Proceedings of 33rd Southeastern Symposium on System Theory, 2001.

M. Sun, Tree Annealing for Constrained Optimization, Proceedings of 34th Southeastern Symposium on System Theory, 412-416, 2002.

M. Sun (with T. Zhao et. al.), Reconstruction of in-plane magnetization distributions from magnetic force microscope images, J. Appl. Phys., Vol. 89, 7230 (2001).

M. Sun (with W. H. Butler), Application of Data Driven Models in Quantum Mechanics Calculations, Proceedings of 34th Southeastern Symposium on System Theory, 426-430, 2002.

M. Sun (with H. Fujiwara), Data Driven Function Approximation Models for Simulating Magnetic Hysteresis, J. Appl. Phys., 2002.

M. Sun (with H. Fujiwara et al.), Magnetization behavior of synthetic antiferromagnet and toggle-magnetoresistance random access memory (MRAM), Tran. Magn. Soc. Japan, 4(2004),121-129.

M. Sun and A. W. Johnson, Interval Branch and Bound with Local Sampling for Constrained Global Optimization, J. of Global Optimization, 33(2005), 61-82.

M. Sun (with D. Bunnag) Genetic Algorithm for Constrained Global Optimization in Continuous Variables, Applied Mathematics and Computation, 2005.

M. Sun, Enhancement of Digital Images for Extracting Geometrical Features of Material Grains in Nanoscale Materials Research, in Proceedings of the 37-th Southeastern Symposium on System Theory, 452-456, 2005.

M. Sun (with S.Y. Wang, H. Fujiwara), Toggle magnetoresistance random access memory based on magnetostatically coupled bilayers, *Journal of Magnetism and Magnetic Materials*, 2005, 246-250.

M. Sun (with H. Fujiwara, S.Y. Wang), Critical-field curves for switching toggle mode magnetoresistance random access memory devices, *Journal of Applied Physics*, vol. 97, 10P507, (2005)

M. Sun (with X. Yang), What Does a Deterministic Algorithm Need to Do to Locate a Global Optimizer? in Proceedings of the 38-th Southeastern Symposium on System Theory, 497-501, 2006.

M. Sun (with S.Y. Wang, H. Fujiwara), Bias field effects on the toggle mode magnetoresistive random access memory, *Journal of Applied Physics*, 99(2006), 08N903.

M. Sun (with Xiaoli Yang) Theoretical Convergence Analysis of a General Division-Deletion Algorithm for Solving Global Search Problems, *J. of Global Optimization*, 37(2007), 27-45.

M. Sun (with K. Webb) Visual Optimization with Domain Reduction, in Proceedings of the 39-th Southeastern Symposium on System Theory, 305-309, 2007.

M. Sun (with Congxiao Liu, Hideo Fujiwara), The complementary nature of coercivity enhancement and exchange bias in a general ferro-antiferromagnet exchange coupled system, *J. Appl. Phys.*, Vol. 101, 09E520 (2007)

M. Sun, An efficient limited memory interval algorithm for global optimization, in the Proceeding of 2009 IAENG International Conference on Operations Research (2009), 2032-2037.

M. Sun, A fast memoryless interval algorithm for global optimization, *J. of Global Optimization*, DOI 10.1007/s10898-009-9472-5, (2009).

M. Sun, An efficient limited memory interval-based optimization algorithm for estimating multiple globally optimal solutions, in *Lecture Notes in Operations Research*, 56-61, Global-Link Publisher, Hong Kong, (2009).

M. Sun (with Congxiao Liu, Matthew E. Edwards, and J. C. Wang), Effect of Anisotropy Asymmetry on the Switching Behavior of Exchange Biased Bilayers, *Applied Mathematical Sciences*, 5(2011), 2195-2206.

M. Sun and L. Ingram, A fast interval algorithm with a binary tree data structure for global optimization, Submitted to *J. of Global Optimization*, (2012 in revision).