VITA

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2120 Westwood Drive
Norman, Oklahoma 73069

TELEPHONES:

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PERSONAL DATA:

Born: January 22, 1950. Citizenship: U.S.
Married: Frances Trumble White
Two Children: Rachel Marie White Galvin (married to Jay Galvin) and Zachary William White

EDUCATION:

B.S. Oklahoma Baptist University, 1972 (with majors in mathematics and physics)
M.S. Universtiy of Illinois at Urbana-Champaign, 1973 (in mathematics)
Ph.D. University of Illinois at Urbana-Champaign, 1977 (in mathematics)
Thesis Advisor: Professor T.W.Ting

PROFESSIONAL EXPERIENCE:

1977-1981 Assistant Professor of Mathematics, University of Oklahoma
1981-1985 Associate Professor of Mathematics, University of Oklahoma
1985-Present Professor of Mathematics, University of Oklahoma

HONORS AND AWARDS:

B.S. Summa cum Laude with Honors Distinction from Oklahoma Baptist University
Oak Ridge Associated Universities Research Traineeship, summer 1971
Pi Mu Epsilon
Phi Kappa Phi
Sigma Xi
University of Oklahoma Sigma Xi Research Award, 1983
Sabbaticals: Fall 1983, Fall 1994, Fall 2001
University of Oklahoma Associates Distinguished Lecturer, 1986-1987, 1988-1989
Regent's Award for Superior Research, 1991
Samuel Roberts Noble Foundation Presidential Professorship, 2001-

DOCTORAL ADVISEES:

Current:

Daniel Benton
Ali Shaqlaih
Movses Movsisyan
Narayan Thapa
Sean Crowell

Completed:

Curt Hohmann. Topic: Formulation and Validation of an Affine Frame Model, May 1994.
Jing Zhou. Topic: Optimal control of fluid models with bouyancy, May 1994.
Ying-jun Jin. Topic: Resolution of Output Least Squares Estimators for Parabolic equations, May 1996.
Hong Li. Topic: A Mathematical Model of Flow of Fluid in Porous Media, May 1997.
Leslie Davidson. Topic: Formulation of Static and Dynamic Layered Beam Systems with an Inverse Problem, May 2001.
Tao Xu. Topic: Model-Data Synthesis in Terrestrial Ecosystem Modeling: Inverse Analysis and Inverse Uncertainty Analysis, May 2005.
Hamid Alaoui Hamidi: Vorticity-Based Estimation of Vertical Velocities from Radar Data: Accuracy and Sensitivity, May 2007.

MEETINGS ORGANIZED:

Semigroups and Applications to Numerical Analysis, May 28-29, 1981.

Identification and Control of Distributed Systems, with Prof. M. Balas, IEEE 1981 Conf. on Decision and Control.

Identification of Distributed Systems, fall 1982.

Year in Energy Related Mathematics Floating Seminar, with Prof. H.T. Banks, 1982-83.

Control Theory and Differential Equations, with Prof. K.A. Grasse, AMS Regional Meeting, Norman, spring 1983.

Member Local Organizing Committee for the Internation Symposium on Variational Methods in Geosciences, October 15-17, 1985.

Control of Nonlinear Partial Differential Equations, with Prof. G. Chen, IEEE 1984 Conf. on Decision and Control.

University of Oklahoma Mathematical Models Seminar, 1986-87.

Year in Control Theory and Its Applications, Institute for Mathematics and Its Applications, with Profs. D.L. Russell and J.Lagnese, University of Minnesota, 1992-93.

Identification of Parameters in Distributed Systems, minisymposium, 1992 SIAM Conference on Control.

COLLOQUIA AND INVITED TALKS:

1."Control problems governed by pseudo-parabolic equations," Oklahoma State University, 1978.

2."Convergence properties of optimal controls of pseudo-parabolic problems," North Texas State University, 1980.

3."State constrained point control of pseudo-parabolic problems," Virginia Polytechnic Institute and State University, 1981.

4."Differentiability properties of pseudo-parabolic point control problems," VPI and SU Conference on Volterra and Integral Equations, 1981.

5."Bang-bang controls for parabolic and pseudo-parabolic problems", IEEE 1981 Conf. on Decision and Control.

6."Survey of some identification and control problems for distributed parameter systems," Cities Service Company, 1982.

7."Bang-bang controls for Sobolev point control problems," SIAM 1982 National Meeting.

8."Identification for porous media problems," Year in Energy related mathematics floating seminar, 1982.

9."Total flux control," Department of Mathematics,University of Wisconsin-Madison, 1982.

10."Control of hyperbolic problems with stress constraints," AMS Regional Meeting, Norman, 1983.

11."Identification of distributed systems," Research Problems in the Petroleum Industry, 1983.

12."Estimation of friction Coefficients in a flow equation," IEEE 1983 Conf. on Decision and Control.

13."Estimation and identifiablility of a friction coefficient in a flow model," University of Oklahoma Dept. of Meteorolgy, 1984.

14."Estimation of Elastic Coefficients in Beams and Plates," June 1985, ICASE.

15."Identification problems," Workshop on Control Theory Applications to Meteorology, October 1985.

16."Estimation of elastic coefficients in plate problems," University of Oklahoma Dept. of Electrical Engineering and Computer Science, December 1985

17."Estimation of parameters in static plates," University of Oklahoma Mathematical Models Seminar, April 1986.

18."Control of certain dynamic models of plates: location of actuators," VII International Conf. on Nonlinear Analysis and Applications, July 28-August 1,1986.

19."Regularity of regularized least square optimal estimators of elastic coefficients in static plates," Mathematics Research Center, University of Wisconsin, 1986.

20."Estimation of parameters in a static plate model," AMS Regional Meeting, Denton, October 31-November 1, 1986.

21."Estimation of flexural rigidity in Kirchhoff plate models," Dept. of Engineering Mechanics, University of Texas-Austin, February 1987.

22."Regularity and approximation of flexural rigidity in dynamic Kirchhoff plate models," Department of Mathematics, University of Wisconsin-Madison, March 1987.

23."Estimation of flexural rigidity in dynamic Kirchhoff plate models," Institut of Mathematik, Karl-Franzens-Univeritat, Graz, Austria, May 1987.

24."Formulation of parameter estimation problems for parabolic boundary value problems using the theory of G-convergence," Institut fur Mathematik, Karl Franzens Universitat, Graz, Austria, May 1987.

25."Estimation of elastic parameters using transform data," MIPAC Seminar, Dept.of Mathematics, University of Wisconsin-Madison, October 1987.

26."Estimation of damping coefficients in Kelvin-Voight models of plates," IEEE 1987 Conf. on Decision and Control.

27."Developments in estimation of elastic parameters in linear plate problems," MIPAC Workshop, University of Wisconsin-Madison, May 1988.

28."Estimation of damping coefficients in beam and plate models," Technische Universitat, Graz, Austria, June 1988.

29."Output least square estimation of power-laws in distributed damping models: beams," International Congress on Boundary Control and Stabilization, Clermont-Ferrand, France, June 1988.

30."Estimation of a boundary heat transfer coefficient," Department of Aerospace and Mechanical Engineering, University of Oklahoma, October 1988.

31."Estimation of elastic coefficients in a nonlinear plate model,"IEEE 1988 Conf. on Decision and Control, Austin, Texas, Dec. 1988.

32."Identification problems," Kerr McGee Seminar, Oklahoma City, Feb 1989.

33."Estimation of elastic coefficients in a nonlinear elliptic model," North Carolina State University, Raleigh, North Carolina, March 1989.

34."Estimation of elastic coefficients in a von Karman model," Brown University, Providence, R.I., May 1989.

35."Estimation of an elliptic coefficient in a nonlinear plate model," Midwest Differential Equations Conf., Carbondale, Ill., Nov 1989.

36."Determination of elastic coefficients in a two beam structure," IEEE Conf. on Decision and Control, Tampa Bay, Florida, Dec 1989.

37."Estimation of a coefficient of electrical conductivity from laboratory potential measurements," Virginia Polytechnic Institute and State University, May 1990.

38."Estimation of a coefficient of electrical conductivity from laboratory potential measurements," University of North Carolina at Chapel Hill, May 1990.

39."Continuity properties of Sets of Optimal Output Least Squares Estimators," Regional AMS Conference, University of North Texas, November 1990.

40."Identification Problems," Oklahoma Baptist University, March 1991.

41."Mathematical contributions to assimilation and retrieval," Center for the Analysis and Prediction of Storms, National Science Foundation site visit, Sept. 1991.

42."Narrow Plate Models: Spectral Analysis, with D.L.Russell, ICIAM, July, 1991.

43."Estimation of material parameters in a nonlinear plate model," AMS Workshop on PDE's, Control, and Identification, Mt. Holyoke, July, 1992.

44."Spectral Identification in Narrow Plate Models," with D.L. Russell, SIAM Conf. on Control and its application, Minneapolis, Sept. 1992.

45."Identification of parameters in narrow plate models based on frequency data," with D.L.Russell, SIAM Conf. On Control and its applications, Minneapolis Sept. 1992.

46."Near optimal feedback applied to seek problems," with W.N.Patten, Seagate Corporation, Oklahoma City, Oct. 1992.

47."Identification of electrical conductivity from potential measurements," Workshop on Control and Identification, Minneapolis, Nov. 1992.

48."A FEM Optimal Receding Horizon Control for Systems with Previewable Inputs," with W.N.Patten and C.C.Kuo, Auto.Control Conf., San Francisco, June, 1993.

49."A Moving Horizon Feedback and Feedforward Design for Vibrating Systems(with Finite Preview Time Via the Time-FEM) with W.N.Patten, Second Conf. on Recent Advances in Active Control of Sound and Vibration, Blacksburg, March, 1993.

50."Optimal Control Techniques Applied to Data Analysis," Minisymposium on Control of Partial Differential Equations, College Station, Oct. 1993.

51."Sliding Horizon Control," AMS Regional Conf. College Station, Oct. 1993.

52."Integration of Data by Geofiltering," Lawrence Berkeley Laboratory, Berkeley, Jan. 1994.

53."Formation Theory," with D.L.Russell, CODAC Conf., Blacksburg, March 1994.

54."Identification of Parameters in a 3-D Porous Media Model," Schlumberger-Doll Research Laboratory, Ridgefield, Conn, Oct. 1994.

55."Formation Theory for Linear Static Models," Blacksburg, Oct. 1994.

56."Modelling of Materials with Sudden Changes," DOE contractors meeting, June 1995.

57."Estimation of 3D Discontinuous Permeability Tensors: Resolution," Los Alamos National Laboratory, Los Alamos, Oct. 1995.

58."Resolution of Regularized Output Least Squares Estimation Procedures," Mathematical Theory of Networks and Systems, St. Louis, June. 1996.

59."Resolution of Three Dimensional Reservoir Mapping Estimators," Department of Energy, Bartlesville, Sept. 1996.

60."Numerical Determination of Reservoir Mappings," Mid-American Symposium on Emerging Computer Technologies, Norman, Oct. 1996.

61."Resolution of Estimation Procedures for Elliptic Problems," IFIP conference, Gainesville, Feb. 1997.

62."Probabilistic Outflow Analysis of the Central Ballast Tanker System," U.S. Coast Guard, Washington, May, 1997.

63."Resolution in the Estimation of Reservoir Mappings," DOE Contractors Meeting, Houston, June, 1997.

64."Control Formulation of the Estimation of Reservoir Mappings," Mobil Exploration and Production Technical Center, Dallas, Oct. 1997.

65."Control Formulation in Reservoir Characterization," Geophysics Symposium, Norman, Oct. 1997.

66."Narrow Plate Models and Applications," OU Civil Engineering Structures Colloquium, Norman, Nov. 1997.

67."Resolution/Sensitivity in Estimation," DOE site visit, Norman, April, 1998.

68."Resolution of Regularized Output Least Squares Procedures," Universtiy of Joesph Fourier, Grenoble, France, June, 1998.

69."Adjoint and Second Derivative of Surface Flow Equations," OU Civil and Environmental Engineering, Norman, Sept. 1998.

70."Adjoint Computation in Estimation Problems," Mobil Exploration and Production Technical Center, Dallas, November 1998.

71. "Retrieving Physically Significant Distributed Hydrologic Parameters Using the Adjoint Method," American Geophysical Union Annual Meeting, with Baxter Vieux, June 1999.

72. "Monte Carlo Generation of Damage Scenarios for Oil Tanker Accidents," National Research Council Committee on Alternative Tanker Designs, Washington D.C., September 1999.

73. "Stochastic Fluid Modulus Inversion," OU Geophysical Symposium, Norman, September 1999, with John Castagna.

74. "Neural Networks Applied to Estimation the Prediction of Asphalt Deformation," OU Rock Mechanics Symposium, Norman, October 1999.

75. "Estimation of Parameters in a Surface Hydrological Model," Advances in Control of Nonlinear Distributed Systems, College Station, October 1999.

76. "Estimation of Carbon Transfer Coefficients," Desert Research Institute, Reno, July 2000.

77. "Stochastic Estimation of Covariance Models," Geophysics Research Seminar, Norman, September 2000.

78. "Stochastic Estimation of Fluid Modulus from Seismic Reflections," Geophysics Annual Research Symposium, Norman, November 2000.

79. "Estimation of Carbon Transfer Coefficients," Botany and Microbiology Graduate Student Seminar, Norman, October 2000.

80. "Stochastic Inversion in a Surface Flow Model," Power Costs Inc., Norman, October 2000.

81. "Stochastic Inversion of Reflection Coefficients I, Veritas, Norman, Aug. 2001.

82. "Stochastic Inversion of Reflection Coefficients II, Gas Technology Institute, Aug. 2001.

83. "Stochastic Fluid Modulus Inversion," Society for Exploration Geophysics National Meeting, San Antonio, September 2001.

84. "Stochastic Fluid Modulus Inversion from Seismic Reflections with Data Uncertainties," Geophysics Annual Research Symposium, Norman December 2001.

85. "AVO assessment," Santos,LLC, Norman, Oct 2002.

86. "Model-based assessment of AVO data," Geophysics Consortium Annual Meeting, Norman, Nov. 2002.

87. "CO2 Kriging with Atmospheric Transport," Botany Microbiology, Seminar, Nov. 2003.

88. "Stochastic Fluid Modulus Inversion," SEG Annual Meeting, Dallas, Oct. 2003.

89. "Development of Fluid Modulus Inversion," EDGE Geophysics Consortium Annual Meeting, Norman, Dec. 2003.

90. "Optimal Location of Radar Under a Dual Doppler Maximum Coverage Area Criterion," CASA Research Seminar, Dec. 2003.

91. "Optimal Retrieval of Wind Fields from Radar Data," CASA Annual Research Retreat, Estes Park, Oct. 2004.

92. "Optimal Radar Network Scanning Strategies," CASA Research Seminar, Dec. 2004.

93. "Radar Scanning Strategies to Reduce Uncertainty," CASA Research Seminar, March 2005.

94. "Adaptive Scanning Strategies Based on Kalman Filtering," CASA Retreat, November 2005.

95. "Adaptive Scanning Based Minimization of Ensemble Relative Retrieval Error," CASA Research Seminar, March, 2006.

96. "Estimation of Parameters in Carbon Sequestration Models from Net Ecosystem Exchange Data," Ecology Seminar, March, 2006.

97. "Kalman Filter Applications to Estimation of Carbon Transfer Coefficients," Ecology Seminar, April, 2007.

VISITING AND TEMPORARY POSITIONS:

Institute National de Recherch d'Informatique et d'Automatique, Visiting Scientist, April-June 1980.

Cooperative Institute for Mesoscale Meteorological Studies, Visiting Scientist, August 1982, August 1983, June 1984.

Institute for Computer Applications in Science and Engineering, NASA Langley Research Center. Visiting Scientist, July 1983, June 1984, June 1985.

Aerospace, Mechanical and Nuclear Engineering Dept., University of Oklahoma, Associate Professor, June-July 1983.

Office of Business Interaction and Cooperation, Faculty Associate, 1986-87.

Institut fur Mathematik, Karl-Franzens-Universitat, Graz, Austria, Visiting Professor, May 1987.

Departement de Mathematiques Appliquees, Universite Blaise Pascal, Clermont-Ferrand, France, Visiting Professor, June 1988.

Institute for Applied Mathematics, University of Minnesota, Minneapolis, Visiting Professor, November 1992.

Institut National de Recherche en Informatique et en Automatique, Visiting Scientist, May-July, 1998.

Universite Joseph Fourier, Grenoble, France, Visiting Professor, May-July, 2002.

GRANTS FUNDED:

National Science Foundation: Investigations in the control in the control of Sobolev-Galpern Equations, 1979-81, $14,057.

University of Oklahoma Energy Resources Center: Investigations of the control and identification problems associated with fluid flow in fissured media, 1980, $5,500.

University of Oklahoma Energy Resources Center: Investigation of the determination of oil reservoir characteristics using transient test data, 1981, $9,000.

National Science Foundation: Investigation in the control of Sobolev-Galpern equations, 1981-83, $20,274.

University of Oklahoma Energy Resources Center: Distributed control problems arising in oil production, with Prof. K.A. Grasse, $9,000.

Venezuelan Petroleum Institute: Optimization of sucker-rod pumping systems, with Prof. J.C. Purcupile, $100,000.

University of Oklahoma Energy Resources Center: An Improvement of Gibb's Method, with J.C. Purcupile, $10,000.

Air Force Office of Scientific Research: Estimation and control of distributed models for certain elastic systems arising in large space structures, 1984-87, $167,000.

Office of Naval Research: with Y.K. Sasaki, 1984-85, $84,000.

Department of Energy: Estimation of parameters in porous media, $180,000.

Air Force Office of Scientific Research: Estimation of elastic parameters in linear and nonlinear distributed models of plates arising in large flexible space structures, 1987-1990, $216,000.

Center for Analysis and Prediction of Storms, National Science Foundation: Use of Doppler radar data to recover velocity, pressure and temperature fields, 1989-1990, $62,000.

Air Force Office of Scientific Research: Estimation and control of parameters in linear and nonlinear distributed models of flexible structures, 1990-1993, $160,000.

Center for Analysis and Prediction of Storms, National Science Foundation: Studies in the Assimilation of Data, 1990-1992, $73,000.

Center for Reservoir Characterization, Dept. of Energy: Modeling of Depositional Environments, 1993-1997, 270,000.

Oklahoma Center for the Advancement of Science and Technology, Studies in Near-surface Seismic Measurements, with R. Young, C. Liner, J. Forgotson, and D.O'Meara, 1994-1996, $150,000.

Mobil Exploration and Production Technical Center: A Control Theoretic Approach to the Estimation of Reservoir Parameters, 1997-1999, $76,000.

Center for Reservoir Characterization, Dept. of Energy: Modeling of Depositional Environments, 1999-2000, $50,000.

Oklahoma Department of Transportation, Neural Network Modeling Asphalt Rutting, 1999-2000, $6,000.

Department of Energy, Duke Forest Face Project, with Yiqi Luo, 2001-2002, $36,000.

Department of Energy, Studies in the Duke Forest Free-Air CO_2 Enrichment (FACE) Program, $732, 000, 2002-2006. Personally funded at $20,000/year.

National Science Foundation, Center for Collaborative Adaptive Sensing of the Atmosphere (CASA), $5,000,000+, 2003-2006. Personally funded at $50,000/year.

Department of Energy, Data-Model Assimilation at the FACE and AmeriFlux Sites Toward Predictive Understanding of Carbon Sequestration at Ecosystem and Continental Scales, 2006-2009, $20,000/year

RESEARCH INTERESTS:

Control of partial differential equation and applications
Parameter identification, inverse problems and applications
Stochastic inverse problems
Numerical approximation of control and identification problems
Mathematical Modeling, Validation, and Analysis of Systems

OTHER PROFESSIONAL ACTIVITIES:

Consulting:

CBS College Publishing-Holt, Rinehart, and Winston
Fife Corporation, Oklahoma City, Oklahoma
Computational Mechanics Company, Austin, Texas
Optimization Inc., Blacksburg, Virginia
Landmark-Zycor, Austin, Texas
Co-editor CBS-Computer aided instructional series in engineering, 1984-1986.
Marine Safety Systems Inc., Houston, Texas.
Mobil Exploration and Production and Technical Center, Dallas, Texas.
Fusion Geophysical LLC, Norman, Ok

President, Applied Mathematics Consulting, Inc.

Projects:

Development of computer courseware for use in calculus, differential equations, and engineering mathematics, with Frances White.

Probabilistic Analysis of central ballast oil tanker design compliance with International Maritime Organization environmental guidelines.

PUBLICATIONS:

Books:

Calculus with Applications in Science and Engineering I and II, with Frances White.

Proceedings of the International Symposium on Geosciences, coeditor with Yoshi Sasaki, Elseviar Press, 1986.

Control and Optimal Design of Distributed Parameter Systems, coeditor with J. Lagnese and D. L. Russell, Springer-Verlag, Vol. 70, IMA Volumes in Mathematics and Its Applications, 1995.

Evaluation of Alternatives Designs to Double Hull Oil Tankers, National Research Council, with Kirsi Tikka et al, 2001.

Research Publications:

1. "Control problems governed by a pseudo-parabolic partial differential equation," Trans.Amer.Math.Soc.250 (1979), pp.235-246.

2. "Control of a pseudo-parabolic initial-value problem to a target function," SIAM J. Cont. and Opt.17(1981), pp.587-595.

3. "Control problems governed by Sobolev partial differential equations," J.Math. Anal.Appl.73(1980), pp.267-277.

4. "Convergence properties of optimal controls of pseudo-parabolic problems," J.Math. Anal.Opt.7(1981), pp.141-147.

5. "Penalty approximation of a Sobolev optimal control problem with state constraints," J.Opt.Thy.Appl. 33, pp.121-136.

6. "Approximation of a parabolic optimal control problem by pseudo-parabolic problems," Houston J. Math. 6, pp.595-601.

7. "Controllability properties of pseudo-parabolic boundary control problems," SIAM J. Cont. and Opt. 18, pp.534-539.

8. "Formulation of pseudo-parabolic boundary control problems," J.Math.Anal.Appl. 82, pp.284-297.

9. "The feedback operator for a pseudo-parabolic optimal control problem," J.Opt.Thy.Appl.

10."On positive solutions of elliptic partial differential equations," with S.B. Eliason, Hiroshima J. Math. 12 (1982), pp.469-484.

11."Point control of pseudo-parabolic problems," J.Diff. Eqns. 42(1981).

12."Point control: Approximation of parabolic problems and pseudo-parabolic problems," Appl.Anal., 12(1981), pp.251-264.

13.Dynamic Initialization with Filtering of Gravity Waves, with F.X. LeDimet and Y.K. Sasaki, CIMMS research report

14.Slow Manifold and Initialization, with F.X. LeDimet and Y.K.Sasaki, CIMMS research report.

15."A bang-bang property for point controls," Appl.Anal. (1982).

16."Point control with state contraints," SIAM J.Opt. and Cont. (1981), pp.490-496.

17."Differentiability properties of pseudo-parabolic point control problems," Proc. of the VPI and SU Conf. on Volterra and Integral   Equations, 1981.

18."Approximation of point controls of second-order evolution equations of Sobolev type, "J.Math.Anal.Appl. 90(1982), pp.117-126.

19."A bang-bang result for an undamped second-order evolution equation of Sobolev type," Rocky Mtn.J. of Math. 13(1983), pp.23-30.

20."Limiting behavior of bang-bang controls for Sobolev problems,"J.Opt.Thy.Appl.,38(1982).

21."Bang-bang controls for parabolic and pseudo-parabolic problems," Proc. IEEE 1981 Conf. on Decision and Control.

22."Total flux (nonlocal) boundary value problems for pseudo-parabolic equations," with Li Ta-tsien, Appl. Anal.16(1983), pp.17-31.

23."Parameter identification of distributed systems," with C.C. Travis, J.Math.Biosciences, 77(1985),pp.341-352.

24."Parameter identifiability for Partial Differential Equations," with C.C. Travis, Proc. of the 10th IMACS World Conf.on System Simulation and Scientific Computation.

25."Limit behavior of Sobolev total flux boundary control problems," Rocky Mtn.J.Math. 13(1983).

26."Optimal bang-bang controls arising in a Sobolev impulse control problem," J.Math.Anal.Appl. 99(1984), pp.237-247.

27."A control problem with pointwise state constraints," IEEE Trans.Auto.Cont. 29(1984), pp.722-724.

28."Control of a hyperbolic problem with stress constraints,"   J.Opt.Thy.Appl. (1983), pp. 359-369.

29."Distributed control of a hyperbolic problem with control and stress constraints," .Math.Anal.Appl., 1984.

30."Control of a Power-law Fluid," J.Nonlinear Anal.: Thy,Methods, and Appl. 9(1985), pp.289-298.

31."The parameter estimation problem for parabolic equations with discontinuous observation operators," with K. Kunisch, SIAM J. Opt. and Cont. 6(1985), pp.900-927.

32."Parameter estimation for elliptic problems in multidimensional domains with point and flux observations," with K. Kunisch, J.Nonlinear Anal.: Thy, Methods, and Appl. 10(1986), pp.121-146.

33."Parameter estimation, regularity, and the penalty method for a class of elliptic problems," with K. Kunisch, SIAM J. Opt. and Cont. 25(1987), pp.100-120.

34."Parameter identifiability under approximation," with K. Kunisch, Quarterly of Appl.Math. 44(1986), pp.475-485.

35. "An investigation of sucker-rod pumping diagnostic techniques using d' Alembert's solution to the wave equation," with J.E.Chacin and J.Purcupile, Proc. of Southeast Conf. on Theoretical and Applied Mechanics XII.

36. "Identification of a friction coefficient in a first order linear hyperbolic equation," Proc. of the 1983 Conf. on Decision and Cont.

37. Estimation of parameters in nonlinear flow equations with discontinuous solutions, CIMMS research report, 1984.

38. "Estimation of friction parameters in nonlinear first order hyperbolic equations," with K. Grasse, J.Opt.Thy.Appl. 51(1986), pp.243-270.

39. "Identification of Cauchy data in nonlinear first order hyperbolic systems," with K.A. Grasse, J.Math.Anal.Appl., (1988).

40. "Identifiability under approximation for elliptic two-point boundary value," with K. Kunisch, SIAM J.Opt.Cont. 25(1987), pp.279-297.

41. "A method of estimating permeability in oil shale retorts based on pressure and temperature measurements," with P. Rye and J.C. Purcupile, Proc. 18th Oil Shale Symposium.

42. "Estimation of elastic parameters in beams and certain plates:H1 regularization" J.Opt.Thy.Appl., (1989) 60.

43. "Identification of elastic coefficients in beams: penalization," J. Math. Anal. Appl.,(1988).

44. "Estimation of optimal locations for control of a Kirchhoff plate, Proc. IEEE 1987 Conf. on Decision and Cont.

45. "Control of dynamic models of beams and plates with small damping: location of actuators," J.Appl.Anal., 28(1988), pp.297-327.

46. "Control of certain dynamic models of beams and plates: location of actuators," Proc. VII International Conf. of Nonlinear Anal. and Appl., V. Lakshmikantham ed., Marcel Dekker, 1987.

47. "Regularity properties in parameter estimation of diffusion coefficients in elliptic boundary value problems," with K. Kunisch, Appl.Anal. 21(1986), pp. 71-88.

48. "Identifiability of discretized systems under multiple inputs," with K. Kunisch, Optimal Control Applications and Methods, 12, No.1(1991),pp 63-71.

49. "Estimation of a boundary heat transfer coefficient," With K. Kunisch, Control-Theory and Advanced Technology, 7, No 1(1991), pp 55-72.

50. "Regularity properties and strict complementarity of the output-least-squares approach to parameter estimation in parabolic equations, with K. Kunisch, Inverse Problems, 1988.

51. "Estimation of flexural rigidity in a dynamic plate model," J. Math. Analysis and Applications, 15(1989) pp. 275-303.

52. "Estimation of flexural rigidity in a Kirchhoff plate model," Applied Math. and Computations Modeling of the Environment, (1988).

53. "Dynamics and control of viscoelastic solids with contact and friction effects," with J.T. Oden, J. of Nonlinear Analysis and Applications, 4(1989), pp. 459-474.

54. "Estimation of higher order damping terms in linear plate models," Appl.Math. and Comp.,33(1989), pp. 89-122.

55. "Output least squares estimation of power-laws in damping models: beams," Control of Boundaries and Stabilization, Lecture Notes in Control and Information Sciences, J. Simon ed., Springer-Verlag, 1989.

56. "Stability of optimal output least squares estimators of elliptic coefficients in beam and plate models," Appl. Anal., 39(1990), pp. 15-34.

57. "Estimation of elastic parameters in a nonlinear elliptic system" Proceedings of the 1988 IEEE Conf. on Decision and Control.

58. "Estimation of flexural rigidity in certain nonlinear plate models," J. Nonlinear Anal. Theory and Appl., 18, No.9(1992), pp.829-849.

59. "Estimation of elastic parameters in a coupled beam system," Proc. 1989 Conf. on Decision and Control.

60. "Estimation of elastic parameters in a nonlinear elliptic model of a plate, Appl. Math. and Computation, 42(1991), pp. 139-187.

61. "Estimation of elastic parameters in coupled beam structures," with Y. Feng,J. Opt. Thy and Appl., Vol.79, No.3, pp.611-640, 1993.

62. "Estimation of elastic and damping parameters in dynamic nonlinear plate models," J.Appl.Math. and Comp., Vol.54,No.1,pp.25-63,1993.

63. "Identification of a coefficient of conductivity from potential measurements," invited paper, Advances in Water Resources special issue of parameter identification methods in groundwater flow, 14, No 2(1991), pp 69-82.

64. "Conductivity mapping to determine interwell fluid saturation," with E.C. Donaldson and A. Madjidi, in J.of Petroleum Science and Engineering,(1992).

65. "On the estimation of L infinity diffusion coefficients in parabolic equations, with S. Gutman, Inter. J. Comp. and Math. with Appl. special issue on inverse problems, 22(1991), pp. 125-136.

66. "Continuity Properties of sets of optimal regularized output least squares estimators," with J. Zhou, J.Math.Anal. Appl., 196, pp 53-83,1995.

67. "Formulation and Validation of Dynamical Models for Narrow Plate Motion," with D.L.Russell, J.Appl.Math.and Comp., Vol.58,No.2 and 3, pp.103-141,1993.

68. "Identification of Paramters in Narrow Plate Models from Spectral Data, with D.L.Russell, J.Math.Anal.and Appl., vol 58,pp.679-707, 1996.

69. "A Study of Uniqueness for the Initializaiton problem for Burgers' equation," .Math.Anal.Appl., Vol.172, No.2,1993, pp.412-431.

70. "Optimal control of fluid equations with bouyancy," with J.Zhou, J.Applied Math and Comp., 71, 1995,pp.15-45.

71. "Estimation of Material Parameters in a Nonlinear Dynamic Plate Model with Norm Cnstraints," Proc.of SIAM Conf. on PDE's,Control, and Identification, Banks, Fabiano, and Ito,eds., 1993.

72. "The Bowed Narrow Plate Model," with D.L. Russell, Electronic J.Diff. Eqns., April 2000.

73. "A Moving Horizon Feedback and Feedforward Design for Vibrating Systems(with Finite Preview Time Via the Time-FEM), with W.N.Patten and C.C.Kuo, Proc.2nd Conf.on Recent Advances in Active Control of Sound and Vibration,(1993).

74. "A FEM Optimal Receding Horizon Control for Systems with Previewable Inputs," with W.N.Patten and C.C. Kuo, Proc. 1993 Auto.Cont.Conf.

75. "Minimum Time Seek Control for a Disk Drive," with W.N.Patten and H.C.Wu, IEEE Trans. on Magnetics, Vol. 31, No.3, 1995,pp.2380-2387.

76. "A Sliding Horizon Feedback Control Problem with Feedforward and Disturbance," with W.N.Patten, J. Math Systems, Estimation, and Control, Vol 7, No. 2, pp. 227-230, 1997.

77. "Stabilization by the Sliding Horizon Control Technique," with W.N.Patten and C.C.Kuo, J.Math.Systems, Estimation, and Control.

78. "Numerical Approximation of Optimal Controls of Fluid Equations with Bouyancy" with J. Zhou, J.Applied Math. and Comp.,71, 1995, pp. 47-68.

79. "Numerical Determination of Geological Mappings," Proceedings of the Mid American Symposium on Emerging Computer Technologies, 1996.

80. "On the development of a static formation theory for active materials," with D.L.Russell, Applied Mathematical Modelling, Vol. 21,pp. 345-362, 1997.

81. "The adjoint Newton algorithm for large-scale unconstrained optimization in meteorology applications," with D.Z.Wang and K.Droegemeier, J. Computational Opt. and Appl.,v 10, pp283-320, 1998.

82. "Estimation of Two Dimensional Reservoir Maps with Discontinuities, with Y.Jin and D.O'Meara, J.Appl.Math. and Comp.,v. 81, pp113-138, 1997.

83. "The OCAST Project: Integrated Geophysical Characterization Assisting Flow Simulations," Proc. 65th Annual International Meeting of the Society of Exploration Geophysicists, with R.A. Young, J.M.Forgotson, D.O'Meara, Z.Deng, Z-M Liu, C.L.Liner, R.Weindel, S.Danbon, 1995.

84. "An Elementary Nonlinear Beam Theory with Finite Buckling Deformation Properties," with D.L.Russell, SIAM J. Applied Math., Vol. 62, No. 4, pp 1394-1413, 2002.

85. "An Elementary Nonlinear Plate Theory with Finite Buckling Deformation Properties,I," with D.L.Russell, Cybernetics and Control, Dec. 1999.

86. "Resolution of Regularized Output Least Squares Estimation Procedures," J.Appl. Math.and Comp., v. 81, pp139-172, 1997.

87. "Modeling Materials with Sudden Changes," with D.O'Meara, Proc.1995 DOE Contractors Meeting.

88. "A Simple Model for Fluid Accumulation and Flow in a Porous Medium," with M. Zaman, J.Appl.Math. and Comp, v.90, pp. 181-203, 1998.

89. "Estimation of Discontinuous Diffusion Coefficients in Three Dimension," Technology in Geotechnical Modelling, M. Zaman, ed., 2000.

90. "Resolution of Regularized Output Least Squares Estimators For Parabolic Problems," with Ying-jun Jin, Numerical Control Theory, W.Hager, ed., Kluwer, 1998.

91. "Fluid Accumulation and Flow in a Three Dimensional Porous Media Model," with Hong Li and M. Zaman, Applied Mathematics and Computation, Jan 2000.

92. "Coupling elastic models through interfacial conditions with applications to concrete pavement overlays," with M. Zaman, Applied Math and Comp., 123, pp187-208, 2001.

93. "Application of a New Adjoint Newton Algorithm to the 3-D ARPS Storm Scale Model Using Simulated Data," with Z. Wang, K. Droegemeier, and M. Navon, Monthly Weather Review, v 125,pp 2460-2498, 1997.

94."Static Buckling in a Supported Nonlinear Elastic Beam," with D.L. Russell, Control of Nonlinear Distributed Parameter Systems, G. Chen, I. Lasiecka, and J. Zhou, Eds., Marcel Dekker, New York, 2001.

95."Estimation of Parameters in a Surface Hydrology Model," with B.Vieux, F.X. LeDimet and D. Armand, Advances in Water Resources, 2002.

96. "Stochastic Fluid Modulus Inversion," with John Castagna, Proceeding of the Society for Exploration Geophysics National Meeting, 2001.

97. "Stochastic Inversion of Fluid Modulus," with John Castagna, Geophysics, Vol. 67, No. 6, (Nov-Dec, 2002), pp 1835-1843.

98. "Surface Flow Model: Stochastic Inversion and Prediction," with B.Vieux and D. Armand, Advances in Water Resources, 25(2002), pp 317-324.

99. "Stochastic inversion and prediction applied to concrete overlay systems," with M. Zaman, Applied Mathematics and Computation, 128,pp. 59-79, (2002).

100. "The Variance of Estimation Error and Estimation Sensitivity with Application to Assessing the Value of Data," with S. Boerner and W.D.Lyle, Mobil Exploration and Technical Center, Technical Report, 1999.

101. "Elevated CO2 Differentiates Ecosystem Carbon Processes: A Deconvolution Analysis of Duke Forest FACE data," with Y.Luo, L.Wu, J.A.Andrews, R.Matamala, and W.H.Schlesinger, Ecology Monographs, 71, 357, 2001.

102. "Fluid Modulus Inversion Using Seismic Reflection Coefficients," with J. Castagna, Proc. SEG National meeting, 2003.

103. "A Simple Model for Pavement Drainage," with M. Zaman, Internation Journal of Geoengineering, Vol 1, Issue 1, pp.67-82. 2001.

104. "Sustainability of Terrestrial Carbon Sequestration: A case study in Duke Forest with an inversion approach," Global Biogeochemical Cycles, with Y.Luo, Vol. 17, No. 1, 1021, 2003, pp 21-34.

105. "Estimation of Carbon Transfer Coefficients Using Duke Forrest Free Air CO2 Enrichment Data," with Y. Luo, Applied Mathematics and Computation, 130, pp101-120, (2002).

106. "Model-based Data Assessment for Terrestrial Carbon Processes: Implications for Sampling Strategies in FACE Experiments," with Y. Luo, Applied Math and Computations, 167, pp419-434, 2005.

107. "On a nonlinear elastic beam system with inelastic contact constraints," with D.L.Russell, Applied Math. And Optimization special memorial issue honoring J.L. Lions45, 291-312, 2002.

108. "Estimation of C residence times in plant and soil pools at ambient and elevated CO2: A case study in Duke forest with an inversion approach," with Y. Luo, J.Canadell, D.Ellsworth,E. DeLucia, A.Finzi, J.Lichter, and W.Schlesinger, Proc.Geophysical Union National Meeting, 2002.

109. "A neural network model for asphalt concrete permeability," with R.Tarefder and M.Zaman, ASCE J. of Materials in Civil Engineering, pp 19-28, Vol. 17, No. 1, Jan/Feb 2005

110. "Fluid modulus inversion study on Miocene sandstone reservoirs, Gulf of Mexico: a case study," H. Chen, W. Lamb, and J. Castagna, Proc. 2002 SEG National Meeting, 2002.

111. "A Neural Network Model for Asphalt Rutting," with R. Tarefder and M. Zaman, Transportation Research Board Journal Record, No. 1936, pp 201-209, 2006.

112. "Carbon Sequestration: Inversion and Prediction Using FACE Data," with Y. Luo, and Tao Xu, Applied Math and Computation, Vol. 163, pp 783-800, 2005.

113. "Reduced Three Dimensional Dynamic Model for Structural Health Assessment of Buildings," Applied Math and Computation, Applied Math and Computation, 182, Nov. 2006, pp 572-588.

114. "Carbon Isotope and Fine Root Turnover," with Y. Luo and D Hui,, Science, Vol. 304, June 18, 2004, p 945c.

115. "Optimization of Wind Field Retrieval Procedures," with A. Shapiro, Applied Math and Computation, Applied Math. and Computation, 171, pp. 25-52, Dec. 2005.

116. "Site Considerations and Optimization of the NetRad Radar Network," with K. Brewster, J. Brotzge, and W. Johnson, Proc American Meteorological Society, Jan 2005.

117. "Radar Network Scanning Coordination Based on Ensemble Transform Kalman Filtering Variance Optimization," with A. Shapiro, Applied Math and Computation, 188, May 2007, pp 1285-1309.

118. "Estimation of Parameters in Carbon Sequestration Models from Net Ecosystem Exchange Data," with Frances White, Tao Xu, and Yiqi Luo, Applied Math. and Computation, 181, Oct.2006,pp 864-879.

119. "Optimization of Radar Scanning Strategies Using an Ensemble Relative Error Criterion," with A. Shapiro, Applied Math and Computation, Applied Math and Computation, 188, May 2007, pp 693-712.

120. "Radar Placement Based on a Geometric Uncertainty Multiplier Reduction Criterion," with A. Shapiro and Frances White, Computational Optimization and Applications, on line.

121. "Optimal Sampling Strategies for Hazardous Weather Detection Using Networks of Dynamically Adaptive Doppler Radars," with J. Proud, K. Droegemeier, and V. Wood, to appear, Proc. American Meteorological Society, 2005.

122. "Stochastic Inversion of a Terrestrial Ecosystem Model: Analysis of Uncertainty in Parameter Estimation and Model Prediction with Tao Xu, Defeng Hui, and Yiqi Luo, Global Biogeochemical Cycles, vol 20,gb2007, 2006.

123. "Sustainability of Terrestrial Carbon Sequestration: A Case Study in the Duke Forrest with an Inversion Approach," with Y. Luo, J. Canadell, E. DDeLucia, D.Ellsworth, A. Finzi, J. Lichter, and W. Schlesinger, Global Biogeochemical Cycles, Vol. 17, No. 1, 2003.

124. "An Analytical Model of One- and Two-celled Vortices: Preliminary Testing." with V. Woods, C. Alexander, and R. Tanamachi, Proc. 23rd Conf. on Severe Local Storms, American Meteorological Society, Nov. 2006.

125. "A Stepwise Inversion Method to Estimate Parameters from Eddy Flux Observations," with X. Wu, X. Zhou, and Y. Luo, Proc. Forest Ecology Meeting. 2006.

126. "Estimating Resilient Modulus Using Neural Network Models," with M. Zaman and A. Ebrahimi, proceedings of ANNIE 2007 ASME conference.

127. "Neural Network Modeling of Resilient Modulus Using Routine Subgrade Soil Properties," with A. Ebrahimi and M. Zaman, submitted.

128. "Vorticity-based Estimation of Vertical Velocities from Radar Data: Accuracy, Sensitivity, and Uncertainty," with H. Hamidi and A. Shapiro, in preparation.

129. "Modeling and Inversion of Net Ecological Exchange Data Using an Ito Stochastic Differential equation Approach," with T. Xu and Y. Luo, Applied Math and Computation, to appear.

130. "Estimation of Time Dependent Carbon Transfer Coefficients Using Net Ecological Exchange Data," in preparation.

131. "Void Detection and Estimation in Elastic Supports for a Beam," with M. Zaman, in preparation.

132. "Modeling and Estimation of Parameters in a Concrete Girder," with J. Pei, in preparation.

133. "Location of Sensors in for Measurement of Deformations in a Girder," in preparation.

134. "Estimation of Vortex Parameters Using an Analytic Model with Physics and Doppler Wind Field Data, with V. Woods, in preparation.