COLLEGE OF ARTS AND SCIENCES

Mathematics Department

Curriculum Vitae

GENERAL DATA

NAME: Athanassios G. Kartsatos

USF EMPLOYMENT: September 1971, Assistant Professor

PRESENT RANK: Full Professor

TENURED: September 1976

EDUCATION

Institution	Field of Study	Degree, Date
University of Athens, Greece	Mathematics	Diploma, 1965
University of Athens, Greece	Mathematics	Doctorate, 1970

EMPLOYMENT

University of South Florida: Professor, 1978-

University of South Florida: Associate Professor, 1973-78

University of South Florida: Assistant Professor, 1971-73

AREAS OF SPECIALIZATION

Nonlinear Functional Analysis, Evolution Equations in Abstract Spaces, Nonlinear Accretive and Monotone Operator Theory, Nonlinear Control Theory With Pre-assigned Responses.

GRANTS RECEIVED

National Science Foundation (funded)/National Research Council Office for Central Europe and Eurasia (administered) COBASE Grant for Collaboration in Basic Science and Engineering (with Professor Igor V. Skrypnik, member of the Ukrainian Academy of Sciences). Title of Project: *"Solvability of Essentially Nonlinear Parabolic Initial-Boundary Value Problems and Problems Involving Nonlinear Maximal Monotone and M-Accretive Operators".* **Year 1996** .

AWARDS

USF Provost's Pool Outstanding Professor award, 1996.
State of Florida's Professional Excellence Program (PEP) award, 1997.
Distinguished Teacher Award of the Florida Section of the Mathematical Association of America, 2003.

CREATIVE ACTIVITIES

BOOK: "*Advanced Ordinary Differential Equations.*

VOLUME EDITOR: **"***Theory and Applications of Nonlinear Operators of Accretive and Monotone Type",* Proceedings of the Special Session of the AMS Meeting, San Francisco, CA, 1995, Lecture Notes in Pure and Applied Mathematics Series, **#178,** Marcel Dekker, New York, 1996.

EDITOR-IN-CHIEF: Abstract and Applied Analysis (1996-2006).

ASSOCIATE EDITOR: Advances in Mathematical Sciences and Applications,

Functional Differential Equations,
Nonlinear Functional Analysis and Applications.
Panamerican Mathematical Journal.

REFEREE: Numerous Mathematical Journals.
REVIEWER: Mathematical Reviews.

ARTICLES IN REFEREED PUBLICATIONS

[1] On the relation between boundedness and oscillation of differential equations of second order, *Canadian Mathematical Bulletin*, **10** (1967), 675-679.

[2] Some theorems on oscillation of certain nonlinear second order ordinary differential equations, *Archiv der Mathematik (Basel)*, **18** (1967), 425-429.

[3] On oscillation of nonlinear equations of second order, Journal *of Mathematical Analysis and Applications*, **24** (1968), 665-667.

[4] A sufficient condition for a semigroup with *r**-invariant measure to be compact, *Bulletin de la Societé Mathematique de Gréce*, **9** (1968), 20-22.

[5] On oscillation and boundedness of solutions of second order nonlinear equations, *Bolletino della Unione Mathematica Italiana*, **4** (1968), 357-361.

[6] Properties of bounded solutions of nonlinear equations of second order, *Proceedings of the American Mathematical Society*, **19** (1968), 1057-1059.

[7] Criteria for oscillation of solutions of differential equations of arbitrary order, *Proceedings of the Japan Academy*, **44** (1968), 599-602.

[8] [With Prof. G. G. Legatos] Further results on oscillation of solutions of second order equations, *Mathematica Japonicae*, **14** (1968), 67-73**.**

[9] [With Prof. N. Tserpes] Mésures semi-invariantes sur un semi-groupe localément compact I, *Comptes Rendus de l'Académie des Sciences Paris Série A-B,* **267** (1968), A507-A509.

[10] Some properties of solutions of *x"+p(t)g(x,x')=0*, *Mathematische Nachrichten*, **40** (1969), 299-304.

[11] [With Prof. N. Tserpes] A sufficient condition for the support of a measure to be a left group, *Bolletino della Unione Mathematica Italiana,* **1** (1968), 538-539.

[12] On oscillation of solutions of even order nonlinear differential equations, *Journal of Differential Equations*, **6** (1969), 232-237.

[13] Boundedness of solutions to nonlinear equations in Hilbert space, *Proceedings of the Japan Academy*, **45** (1969), 339-341.

[14] A stability theorem for the nonlinear differential equation *x"+p(t)g(x)h(x')=0*, *Journal of the Australian Mathematical Society*, **10** (1969), 169-172.

[15] Contribution to the research of the oscillation and the asymptotic behaviour of solutions of ordinary differential equations, *Bulletin de la Societé Mathematique de Gréce*, **10** (1969), 1-48.

[16] Oscillation properties of solutions of even order differential equations, Bulletin of the Faculty of Science of Ibaraki University, **2** (1969), 9-14.

[17] With Prof. G. G. Legatos] Further results on oscillation of solutions of second order equations, *Mathematica Japonicae*, **14** (1969), 67-73.

[18] [With Prof. N. Tserpes] Mésures semi-invariantes sur un semi-groupe localément compact II, *Comptes Rendus de l'Académie des Sciences Paris Série A-B,* **268** (1969), A538-A539.

[19] [With Prof. N. Tserpes] On the equivalence between invariant integrals and minimal ideals in semigroups, *Bulletin of the Australian Mathematical Society*, **1** (1969), 269-278.

[20] On semi-invariant probability measures on semigroups, *Zournal für die Wahrscheinlichkeitstheorie und Verwandte Gebiete*, **15** (1970). 260-262.

[21] On the maintenance of oscillations of *n*th order equations under the effect of a small forcing term, *Journal of Differential Equations*, **10** (1971), 355-363.

[22] Oscillation of nonlinear systems of matrix differential equations, *Proceedings of the American Mathematical Society*, **30** (1971), 97-101.

[23] [With Prof. A. Bacopoulos] On polynomials approximating the solutions of nonlinear ordinary differential equations, *Pacific Journal of Mathematics*, **40** (1972), 1-5.

[24] On the relationship between a nonlinear system and its nonlinear perturbation, *Journal of Differential Equations*, **11** (1972), 582-591**.**

[25] On the maintenance of oscillations under the effect of a periodic forcing term, *Proceedings of the American Mathematical Society*, **34** (1972), 377-383.

[26] Convergence in perturbed nonlinear systems, *Tôhoku Mathematical Journal*, **24** (1972), 539-546.

[27] [With Prof. E. B. Saff] Hyperpolynomial approximation of nonlinear integro-differential systems, *Pacific Journal of Mathematics*, **49** (1973), 117-125.

[28] [With Prof. G. Michaelides] Existence of convergent solutions of quasilinear systems and asymptotic equivalence, *Journal of Differential Equations*, **13** (1973), 481-489.

[29] Hyperpolynomials approximating solutions to boundary value problems, *Zeitschrift für Angewandte Mathematik und Physik*, **24** (1973), 747-754.

[30] Existence of solutions of heavily nonlinear Volterra integral equations, *Hiroshima Mathematical Journal*, **3** (1973), 243-249.

[31] Nonzero solutions to boundary value problems for nonlinear systems, *Pacific Journal of Mathematics*, **53** (1974), 425-433.

[32] On positive solutions of perturbed nonlinear differential equations, *Journal of Mathematical Analysis and Applications*, **47** (1974), 58-68.

[33] Almost periodic solutions to nonlinear systems, *Bolletino della Unione Matematica Italiana*, **9** (1974), 10-15.

[34] Banach space-valued solutions of differential equations containing a parameter, *Archive for Rational Mechanics and Analysis*, **57** (1974), 142-149.

[35] Existence of bounded solutions and asymptotic relationships for nonlinear Volterra integral equations, *Mathematical Systems Theory*, **8** (1974), 266-275.

[36] Stability via Tychonov's Theorem, *International Journal of Systems Science*, **5** (1974), 933-937.

[37] The Leray-Schauder theorem and the existence of solutions to boundary value problems on infinite intervals, *Indiana University Mathematical Journal*, **23** (1974), 1021-1029.

[38] A stability property of the solution of a boundary value problem on an infinite interval, *Mathematica Japonicae*, **19** (1974), 187-194.

[39] [With Prof. M. N. Manougian] Perturbations causing oscillations of functional differential equations, *Proceedings of the American Mathematical Society*, **43** (1974), 111-117.

[40] [With Dr. W. R. Zigler] On a new method for studying the stability of Volterra integral equations, *Atti Accademia Nacionali dei Lincei*, **56** (1974), 22-29.

[41] Global controllability of perturbed quasi-linear systems, *Problems of Control and Information Theory*, **3** (1974), 137-145.

[42] A boundary value problem on an infinite interval, *Proceedings of the Edinburgh Mathematical Society*, **19** (1975), 245-252.

[43] Bounded solutions to perturbed nonlinear systems and asymptotic relationships, *Journal für die Reine und Angewandte Mathematik*, **273** (1975), 170-177.

[44] The Hildebrandt-Graves theorem and the existence of solutions to boundary value problems on infinite intervals, *Mathematische Nachrichten*, **67** (1975), 91-100.

[45] On nth order differential inequalities, *Journal of Mathematical Analysis and Applications*, **52** (1975), 1-9.

[46] [With Prof. Ward] Boundedness and existence of periodic solutions of quasi-linear systems, *Journal of the Institute of Mathematics and its Applications*, Oxford, **15**, (1975), 187-194.

[47] [With Prof. M. N. Manougian] Further results on oscillation of functional differential equations, *Journal of Mathematical Analysis and Applications*, **53** (1976), 28-37.

[48] Locally invertible of operators and existence problems in differential systems, *Tôhoku Mathematical Journal*, **28** (1976), 167-176.

[49] Oscillation and existence of unique positive solutions for nonlinear *n*th order equations with forcing term, *Hiroshima Mathematical Journal*, **6** (1976), 1-6.

[50] [With Dr. W. R. Zigler] Rothe's method and weak solutions of perturbed evolution equations in reflexive Banach spaces, *Mathematische Annalen*, **219** (1976), 159-166.

[51] On the oscillation problem of nonlinear equations, *Hiroshima Mathematical Journal*, **6** (1976), 257-264.

[52] Nth order oscillations with middle terms of order *n-2*, *Pacific Journal of Mathematics*, **67** (1976), 34-45.

[53] On the stabilization of solutions of nonlinear systems, *Mathematical Notes and Symposia, Vol. 2: Differential Equations* (Third Mexico-US Symposium, Mexico City, 1975) (Spanish), 275-280.

[54] Oscillation of *n*th order equations with perturbations, Journal of *Mathematical Analysis and Applications*, **57** (1977), 161-169.

[55] Recent results on oscillation of solutions of forced and perturbed nonlinear differential equations of even order, *Stability of Dynamical Systems, Theory and Applications* (Proceedings of the Regional NSF-CBMS Conference, Mississippi State Univ., Mississippi State, Miss. 1975), 17-72. Lecture notes in Pure and Applied Mathematics, Vol. 28, Marcel Dekker, New York, 1977.

[56] Analysis of the effect of certain forcings on the non-oscillatory solutions of even order equations, *Journal of the Australian Mathematical Society*, **24** (1977), 234-244.

[57] Boundary value problems for abstract evolution equations, *Nonlinear Analysis*, *TMA*, **3** (1978), 1-8.

[58] Oscillation and nonoscillation for perturbed differential equations, *Hiroshima Mathematical Journal*, **8** (1978), 1-10.

[59] Perturbations of *m*-accretive operators and quasi-linear evolution equations, *Journal of the Mathematical Society of Japan*, **30** (1978), 75 84.

[60] [With Prof. J. Toro] Comparison and oscillation theorems for equations with middle terms of order *n-1*, *Journal of Mathematical Analysis and Applications*, **66** (1978), 297-312.

[61] [With Prof. T. Walters] Origins of oscillation criteria of operator differential equations in Hilbert space, *Journal of Mathematical Analysis and Applications*, (1978).

[62] Perturbed evolution equations and Galerkin's method, *Mathematische Nachrichten*, **91** (1978), 337-346.

[63] [With Prof. J. Toro] Oscillation and asymptotic behaviour of forced nonlinear equations, *SIAM Journal of Mathematical Analysis*, **10** (1979), 86-95.

[64] The oscillation of a forced equation implies the oscillation of the unforced equation - small forcings, *Journal of Mathematical Analysis and Applications*, **76** (1980), 98-106.

[65] [With Prof. Walters] Some oscillation results for matrix and vector differential equations with forcing term, *Journal of Mathematical Analysis and Applications*, **73** (1980), 506-513.

[66] Surjectivity results for compact perturbations of *m*-accretive operators, *Journal of Mathematical Analysis and Applications*, **78** (1980), 1-16.

[67] Mapping theorems involving compact perturbations and compact resolvents of nonlinear operators in Banach spaces, *Journal of*

Mathematical Analysis and Applications, **80** (1981), 130-146.

[68] Some mapping theorems for accretive operators in Banach spaces, *Journal of Mathematical Analysis and Applications*, **82** (1981), 169-183.

[69] [With Prof. J. Toro] Passivity and admissibility for evolution equations in Banach spaces, *Nonlinear Analysis, TMA*, **6** (1982), 255-236.

[70] On the nonoscillation of a nonlinear equation with certain discontinuities, *Applicable Analysis*, **14** (1983), 287-292.

[71] [With Prof. W. Kosmala] The behavior of an *n*th order equation with two middle terms, *Journal of Mathematical Analysis and Applications*, **88** (1982), 642-664.

[72] Mapping theorems involving ranges of sums of nonlinear operators, *Nonlinear Analysis, TMA*, **6** (1982), 271-278.

[73] [With Prof. M. E. Parrott] Existence of solutions and Galerkin approximations for nonlinear functional evolution equations, *Tôhoku Mathematical Journal*, **34** (1982), 509-523.

[74] [With Prof. M. E. Parrott] On a class of nonlinear functional pseudoparabolic problems, *Funkcialaj Ekvacioj*, **25** (1982), 207-221.

[75] [With Prof. M. E. Parrott] Global solutions of functional evolution equations involving locally defined Lipschitzian perturbations, *Journal of the London Mathematical Society*, **27** (1983), 306-316.

[76] [With Prof. M. E. Parrott] Convergence of the Kato approximants for evolution equations involving functional perturbations, *Journal of Differential Equations*, **47** (1983), 358-377.

[77] [With Prof. M. E. Parrott] A method of lines for a nonlinear abstract functional differential equation, *Transactions of the American Mathematical Society*, **286** (1984), 73-89.

[78] [With Prof. M. E. Parrott] Functional evolution equations involving time dependent maximal monotone operators in Banach spaces, *Nonlinear Analysis, TMA*, **8** (1984), 817-833.

[79] [With Prof. M. E. Parrott] A simplified approach to the existence and stability problem of a functional evolution equation in a general Banach

space, *Infinite Dimensional Systems (Retzhof, Austria, 1983)*, *Lecture Notes in Mathematics*, **1076**, Springer-Verlag, Berlin-New York, 1984, 115-122.

[80] Zeros of demicontinuous accretive operators in Banach spaces, *Journal of Integral Equations*, **8** (1985), 175-184.

[81] [With Prof. R. D. Mabry] On the solvability in Hilbert space of certain nonlinear operator equations depending on parameters, *Journal of Mathematical Analysis and Applications*, **120** (1986), 670-678.

[82] [With Prof. R. D. Mabry] Controlling the space with pre-assigned responses, *Journal of Optimization Theory and Applications*, **54** (1987), 517-540.

[83] On the solvability of abstract operator equations involving compact perturbations of *m*-accretive operators, *Nonlinear Analysis, TMA*, **11** (1987), 997-1004.

[84] [With Prof. V. C. Dannon] The controllability of a quasilinear functional differential system, *Annales Polonici Mathematici*, **158** (1987), 372-380.

[85] [With Prof. B. D. Calvert] On the compactness of the nonlinear evolution operator in a Banach space, *Bulletin of the London Mathematical Society*, **19** (1987), 551-558.

[86] [With Prof. B. D. Calvert] On the convexity of the interior of the domain of an *m*-accretive operator, *Nonlinear Analysis, TMA*, **12** (1988), 727-732.

[87] [With Prof. M. E. Parrott] Using fixed point theory to find the weak solutions of an abstract functional differential equation, *Contemporary Mathematics*, **72** (1988), 161-165.

[88] [With Prof. M. E. Parrott], The weak solution of a functional differential equation in a general Banach space (full version of the previous reference), *Journal of Differential Equations*, **75** (1988), 290-302.

[89] A direct method for the existence of evolution operators associated with functional evolutions in general Banach spaces, *Funkcialaj Ekvacioj* (the *Japanese Journal of Differential Equations*), **31** (1988), 89-102.

[90] Applications of nonlinear perturbation theory to the existence of methods of lines for functional evolutions in reflexive Banach spaces, *Annales Universitatis Mariae Curie-Sklodowska*, **42** (1988), 41-51.

[91] [With Prof. J. M. Craig] Functional evolution equations involving *T*-accretive and *T*-Lipschitz operators in Banach lattices, *Differential Equations*, *Colorado Springs, Colorado, 1989*), Lecture Notes in Pure and Applied Mathematics, **127**, Marcel Dekker, New York, 1991, 79-96.

[92] [With Prof. V. C. Dannon] Generation of evolution operators in Banach lattices, in *Differential Equations and Applications*, *Columbus, Ohio, 1988*), Ohio University Press, Athens, Ohio, 1989, 211-216.

[93] The existence of a method of lines for evolution equations involving maximal monotone operators and locally defined perturbations, *Panamerican Mathematical Journal*, **1** (1991), 17-27.

[94] On the method of steps for time-dependent delay equations in general Banach spaces, *Panamerican Mathematical Journal*, **1** (1991), 67-73.

[95] The existence of bounded solutions on the real line of perturbed nonlinear evolution equations in general Banach spaces, *Nonlinear Analysis, TMA*, **17** (1991), 1085-92.

[96] On compact perturbations and compact resolvents of nonlinear *m*-accretive operators in Banach spaces, *Proceedings of the American Mathematical Society*, **119** (1993), 1189-1199.

[97] Sets in the ranges of sums for perturbations of nonlinear *m*-accretive operators in Banach spaces, *Proceedings of the American Mathematical Society*, **123** (1995), 145-156.

[98] [With Prof. K. Shin] Solvability of functional evolutions via compactness methods in general Banach spaces, *Nonlinear Analysis, TMA*, **21** (1993), 517-535.

[99] [With Prof. K. Shin] The method of lines and the approximation of zeros of *m*-accretive operators in general Banach spaces, *Journal of Differential Equations*, **113** (1994), 128-149.

[100] [With Prof. D. R. Kaplan] Ranges of sums and the control of nonlinear

evolutions with pre-assigned responses, *Journal of Optimization Theory and Applications*, **81** (1994), 121-141.

[101] Recent results involving compact perturbations and compact resolvents of accretive operators in Banach spaces, *Proceedings of the First World Congress of Nonlinear Analysts*, Tampa, Florida, 1992, Walter De Gruyter, Berlin, (1996), 2197-2222.

[102] [With Prof. Z. Guan] Solvability of nonlinear equations with coercivity generated by compact perturbations of *m*-accretive operators in Banach spaces, *Houston Journal of Mathematics*, **21** (1995), 149-188.

[103] [With Prof. Z. Guan] On the eigenvalue problem for perturbations of nonlinear accretive operators in Banach spaces, *Nonlinear Analysis, TMA*, **27** (1996), 125-141.

[104] On the compactness of the evolution operator generated by certain nonlinear omega-accretive operators in general Banach spaces, *Proceedings of the American Mathematical Society*, **123** (1995), 2081-2091.

[105] On the construction of methods of lines for functional evolutions in general Banach spaces, *Nonlinear Analysis, TMA*, **25** (1995), 1321-1331.

[106] [With Prof. X. Liu] Nonlinear equations involving compact perturbations of *m*-accretive operators in Banach spaces, *Nonlinear Analysis, TMA*, **24** (1995), 469-492.

[107] A compact evolution operator generated by a nonlinear time-dependent *m*-accretive operator in a Banach space, *Mathematische Annalen*, **302** (1995), 473-487.

[108] Degree-theoretic solvability of inclusions involving perturbations of accretive operators in Banach spaces, *Yokohama Mathematical Journal*, **42** (1994), 171-181.

[109] [With Prof. Z. Guan] Ranges of perturbed maximal monotone and *m*-accretive operators in Banach spaces, *Transactions of the American*

Mathematical Society, **347** (1995), 2403-2435.

[110] [With Prof. Z. Ding] Nonzero solutions of nonlinear equations involving perturbations of accretive operators in Banach spaces, *Nonlinear Analysis*, *TMA*, **25** (1995), 1333-1342.

[111] [With Prof. Z. Ding] *P*-Regular mappings and alternative results for perturbations of *m*-accretive operators in Banach spaces, *Topological Methods in Nonlinear Analysis*, **5** (1995), 291-304.

[112] [With Dr. X. Liu] On the construction and the convergence of the method of lines for quasi-nonlinear functional evolutions in general Banach spaces*, Nonlinear Analysis*, *TMA*, 29 (1997), 385-414.

[113] Sets in the ranges of nonlinear accretive operators in Banach spaces, *Studia Mathematica*, **114** (1995), 261-273.

[114] On the perturbation theory of m-accretive operators in Banach spaces, *Proceedings of the American Mathematical Society*, **124** 1996, 1811-1820.

[115] [With Mr. Z. Ding] Nonresonance problems for differential inclusions in separable Banach spaces, *Proceedings of the American Mathematical Society*, **124** (1996), 2357-2365.

[116] New results in the perturbation theory of maximal monotone and *m*-accretive operators in Banach spaces, *Transactions of the American Mathematical Society*, **347** (1996), 2404-2435.

[117] [With Mr. C. Liang] Extending the class of pre-assigned responses in *K*-controllability problems in general Banach spaces, *Nonlinear Analysis, TMA*, **28** (1997), 235--245.

[118] [With Prof. Z. Guan] Ranges of sums for generalized pseudo-monotone perturbations of maximal monotone operators in reflexive Banach spaces, *Contemporary Mathematics*, **204** (1997), 107-124.

[119] [With Dr. W. Zigler] Some properties of differential equations in the weak topology of a reflexive Banach space, in *Dynamical Systems and Control*, Gordon and Breach, 1997, 297-306.

[120] [With Prof. Z. Guan] A degree for maximal monotone operators, in *Theory and Applications of Nonlinear Operators of Accretive and Monotone Type*, (ed. A. G. Kartsatos), Marcel Dekker, 1996, pp. 115-130.

[121] An invariance of domain result for maximal monotone operators whose domains do not necessarily contain any open sets*, Proceedings of the American Mathematical Society*, **125** (1997), 1469-1478.

[122] [With Dr. Zhou, Haiyun] Eigenvalues and ranges for perturbations of nonlinear accretive and monotone operators in Banach spaces. Abstr. Appl. Anal. 2 (1997), 197--205.

[123] On the connection between the existence of zeros and the asymptotic behavior of resolvents of maximal monotone operators in reflexive Banach spaces, *Transactions of the American Mathematical Society*, **350** (1998), 3967-3987.

[124] On saddle point conditions in the perturbation theory of nonlinear maximal monotone operators in Hilbert spaces*, News of the Highest Educational Establishments. Mathematics (Izvestiya Vysshih Uchebnih Zavedenij. Matematika*.), Kazan, Russia, Izv. Vyssh. Uchebn. Zaved. Mat. 1997, no. 2, 66--74; translation in Russian Math. (Iz. VUZ) 41 (1997), no. 2, 61—68. (Invited Paper).

[125] [With Profs. Y. I. Alber and E. Litsyn] Iterative solution of unstable variational inequalities on approximately given sets, *Abstract and Applied Analysis*, **1** (1996), 51-73.

[126] [With Prof. J. Lin] Homotopy invariance of parameter-dependent domains and perturbation theory for maximal monotone and *m*-accretive operators, Advances in Differential Equations, **8** (2003), 129-160.

[127] [With Prof. I. V. Skrypnik] Normalized eigenvectors for nonlinear abstract and elliptic operators, *Journal of Differential Equations*, **155** (1999), 443-475.

[128] [With Prof. I. V. Skrypnik] A global approach to fully nonlinear parabolic problems, *Transactions of the American Mathematical Society,* **352** (2000), 4603-4640.

[129] [With Prof. I. V. Skrypnik] Topological degree theories for densely defined mappings of type (S+), *Advances in Differential Equations,* **4** (1999), 413-456.

[130] [With Prof. I. V. Skrypnik] The index of a critical point for nonlinear elliptic operators with strong coefficient growth, *Journal of the Mathematical Society of Japan*, **52** (2000), 109--137.

[131] [With Prof. H. Zhou] Zeros and mapping theorems for perturbations of m-accretive operators in Banach spaces, *Journal of System Science and Mathematical Sciences*, **21** (2001), 446-454.

[132] [With Prof. I. V. Skrypnik] The index of a critical point for densely defined operators of type (S+)_L in reflexive Banach spaces, *Transactions of the American Mathematical Society*, **354** (2001), 1601-1630.

[133] [With Prof. L. P. Markov] An L2-approach to second order nonlinear functional evolutions involving *m*-accretive operators in Banach spaces, *Differential and Integral Equations*, **14** (2001), 833-866.

[134] [With Dr. Z. Guan and Prof. I. V. Skrypnik] On generalized pseudo-monotone perturbations of maximal monotone operators in reflexive Banach spaces, *Journal of Differential Equations*, **188** (2003), 332-351.

[135] [With Prof. V. Kurta] Nonexistence theorems for weak solutions of quasilinear elliptic equations, *Abstract and Applied Analysis*, **6** (2001), 163-189.

[136] [With Prof. V. Kurta] On the problem of the nonexistence of entire solutions of quasilinear elliptic equations. (Russian) Dokl. Akad. Nauk, **371** (2000), 591--593.

[137] [With Prof. V. Kurta] On a comparison principle and the critical Fujita exponents for solutions of quasilinear parabolic inequalities, Journal of the London Mathematical Society, **66** (2002), 351-360.

[138] [Wth Prof. Zhou, Haiyun] Zeros and mapping theorems for perturbations of m-accretive operators in Banach spaces (in Chinese), *Journal of Systems Science and Mathematical Sciences*, **21** (2001), 446-454.

[139] [With Prof. V. Kurta] On the critical Fujita exponents for solutions of quasilinear parabolic inequalities, Journal of Mathematical Analysis and Applications, **269** (2002), 73-86.

[140] [With Dr. Z. Guan and Prof. I. V. Skrypnik] Ranges of densely defined generalized pseudomonotone perturbations of maximal monotone operators. *Journal of Differential Equations*, **188** (2003), 332-351.

[141] [With Prof. V. Kurta] On a Liouville-type theorem and the Fujita blow-up phenomenon, *Proceedings of the American Mathematical Society*, **132** (2004), 807-813..

[142] [With Prof. Kurta] On blow-up results for solutions of inhomogeneous evolution equations and inequalities, *Journal of Mathematical Analysis and Applications*, **290** (2004), 76-85.

[143] [With Prof. I. V. Skrypnik] A new topological degree theory for densely defined quasibounded (S+)-perturbations of Multivalued maximal monotone operators in reflexive Banach spaces, *Abstract and Applied Analysis*, (2005), no. 2, 121-158.

[144] [With Prof. V. Kurta] On blow-up results for solutions of inhomogeneous evolution equations and inequalities. II. *Differential Integral Equations*, **18** (2005), 1427-1435.

[145] [With Profs. I. V. Skrypnik and V. N. Shramenko] The index of an isolated critical point for a class of non-differentiable elliptic operators in reflexive Banach spaces, *Journal of Differential Equations*, **214** (2005), 189-231.

[146] On the approximate K-controllability of nonlinear systems in Banach spaces, *Nonlinear Analysis*, **62** (2005), 315--344.

[147] [With Prof. I. V. Skrypnik] On the eigenvalue problem for perturbed nonlinear maximal monotone operators in Banach spaces, *Transactions of the American Mathematical Society*, **358** (2006), 3851-3881.

[148] [With Prof. I. V. Skrypnik] Degree theories and invariance of domain for perturbed maximal monotone operators in Banach spaces, *Advances in Differential Equations*, **12** (2007), 1275--1320.

[149] [With Prof. D. R. Adhikari] Topological degree theories and nonlinear operator equations in Banach spaces*, Nonlinear Analysis*, **69** (2008), 1235--1255.

[150] [With Prof. D. R. Adhikari] Strongly quasibounded maximal monotone perturbations for the Berkovits-Mustonen topological degree theory, *Journal of Mathematical Analysis and Applications*, **348**, (2008) 122--136.

[151] [With Prof. J. Quarcoo] A new topological degree theory for densely defined (S+)_L-perturbations of multivalued maximal monotone operators in reflexive separable Banach spaces, *Nonlinear Analysis*, **69** (2008), 2339—2354.

[152] [With Dr. Ibrahimou] The Leray-Schauder approach to the degree theory for (S+)-perturbations of maximal monotone operators in separable reflexive Banach spaces, *Nonlinear Analysis*, **70** (2009), 4350--4368.

[153] [With Prof. J. Quarcoo] Open balls in the ranges of perturbed maximal monotone operators in reflexive Banach spaces, *Advances in Mathematical Sciences and Applications,* **18** (2008*),* 463–488.

[154] [With Prof. D. R. Adhikari] A topological degree theory for perturbations of the sum of two maximal monotone operators, *Nonlinear Analysis*, **74** (2011), 4622–4641.

[155] [With Dr. D. Kerr] A Browder degree theory from the Nagumo degree on the Hilbert space of elliptic super-regularization in reflexive separable Banach spaces, *Nonlinear Analysis*, **74** (2011), 501–515.

[156] A note on the duality mapping of a locally uniformly convex Banach space, *Nonlinear Analysis*, **71** (2009), 5509–5512.

[157] [With Dr. T. Asfaw] A Browder degree theory for pseudo-monotone perturbations of maximal monotone operators, Advances in Mathematical Sciences and Applications, **22** (2012), 91-148.

[158] [With Dr. T. Asfaw] Variational inequalities for perturbations of maximal monotone operators in reflexive Banach spaces, Tohoku Mathematical Journal, 66 (2014), 171-203..

[159] [With Dr. T. Asfaw] New results for perturbations of locally defined generalized pseudomonotone operators in Banach spaces. Advances in Mathematical Sciences and Applications, **24** (2014), 1-10.

[160] [With Prof. D. R. Adhikari] Invariance of domain and eigenvalues for perturbations of densely defined linear maximal monotone operators, Applicable Analysis, 94 (2015), 1-19.

BOOKS REFERRING TO THE AUTHOR'S WORK

[1] **G. E. O. Giacaglia**,
Perturbation Methods in Non-linear Systems, Applied Mathematical Sciences, Springer-Verlag, New York, 1972.

[2] **S. R. Bernfeld and V. Lakshmikantham**,

An Introduction to Nonlinear Boundary Value Problems, Academic Press, New York, 1974.

[3] **L. C. Piccinini, G. Stampacchia and G. Vidossich**,
Ordinary Differential Equations in Rn, Applied Mathematical Sciences, Springer-Verlag, New York, 1978.

[4] **V. Lakshmikantham and S. Leela**,
Nonlinear Differential Equations in Abstract Spaces, Pergamon Press, New York, 1981.

[5] **H. O. Fattorini**,
The Cauchy Problem, Encyclopedia of Mathematics and its Applications, Vol. 18, Addison-Wesley, Reading, 1983.

[6] **N. H. Pavel**,
Differential Equations, Flow Invariance and Applications, Pitman Advanced Publishing Program, Pitman, London, 1984.

[7] **G. F. Webb**,
Theory of Nonlinear Age-Dependent Population Dynamics, Pure and Applied Mathematics, Marcel Dekker, New York, 1985.

[8] **N. H. Pavel**,
Nonlinear Evolution Operators and Semigroups, Lecture Notes in Mathematics, Springer-Verlag, New York, 1987.

[9] **G. S. Ladde, V. Lakshmikantham and B. G. Zhang**,
Oscillation Theory of Differential Equations with Deviating Arguments, Pure and Applied Mathematics Series, Vol. 110, Marcel Dekker, New York, 1987.

[10] **K. Goebel and W. A. Kirk**,
Topics in Metric Fixed point Theory, Cambridge Studies in Advanced Mathematics, Cambridge University Press, New York, 1990.

[11] **J. M. Skowronski,**
Nonlinear Liapunov Dynamics, World Scientific Publishing Co., Inc., Teaneck, *NJ,* 1990

[12] **I. Gyori and G. Ladas**,
Oscillation Theory of Delay Differential Equations with Applications, Oxford Mathematical Monographs, Oxford, New York, 1991.

[13] **S. Mitrinovic, J. E. Pecaric and A. M. Fink**,
Inequalities Involving Functions and Their Derivatives, Mathematics and its Applications, Kluwer, Dordrecht, 1991.

[14] **J. Klamka**,
Controllability of Dynamical Systems, Mathematics and its Applications, Kluwer, Dordrecht, 1991.

[15] **W. V. Petryshyn**,
Approximation-Solvability of Nonlinear Functional and Differential Equations, Pure and Applied Mathematics, Marcel Dekker, New York, 1993.

[16] **R. Koplatadge**,
On Oscillatory Properties of Solutions of Functional Differential Equations, Memoirs on Differential Equations and Mathematical

Physics, A. Razmadze Mathematical Institute, Georgian Academy of Sciences, Vol. 3, 1994.

[17] **J. Wu**,

Theory and Applications of Partial Functional Differential Equations, Applied Mathematics Series, **119**, Springer-Verlag, Berlin, 1996.

[18] **U. Elias,**

Oscillation Theory of Two-term Differential Equations, Kluwer Academic Publishers, Dordrecht, 1997.

[19] **S. Hu and N. S. Papageorgiou**,

Handbook of Multivalued Analysis, Kluwer Academic Publishers, Boston, 1997.

[20] **D. H. Hyers, G. Isac, T. M. Rassias,**

Topics in Nonlinear Analysis & Applications, World Scientific Publishing Co., Inc., River Edge, NJ, 1997.

[21] **C. Avramescu**,

Méthodes Topologiques Dans la Théorie des Équations Différentielles, Cours Études Approfondies*,* Reprografia Universitatii din Craiova, Craiova, Rumania, 1998.

[22] **V. Lakshmikantham and S. G. Deo**

Method of Variation of Parameters for Dynamic Systems, Gordon and Breach, 1998.

[23] **M. Schechter,**

Linking Methods in Critical Point Theory, Birkhäuser Boston, Inc., Boston, MA*,* 1999. *Birkhäuser Boston, Inc., Boston, MA,* 1999.

[24] **D. Pascali**,
Topological Methods in Nonlinear Analysis, Lecture Notes in Mathematics, New York University, Courant Institute, 2000.

[25] **R. P. Agarwal, S. R. Grace and D. O'Regan,**
Oscillation Theory for Difference and Functional Differential Equations, Kluwer Academic Publishers, Dordrecht, 2000.

[26] **R. P. Agarwal, S. R. Grace and D. O'Regan,**
Infinite Interval Problems for Differential, Difference and Integral Equations, Kluwer Academic Publishers, Dordrecht, 2001.

[27] **M. Kamenskii, V. Obukhovskii, P. Zecca,**
Condensing Multivalued Maps and Semilinear Differential Inclusions in Banach Spaces, Walter de Gruyter & Co., Berlin, 2001.

[28] **R. P. Agarwal, S. R. Grace and D. O'Regan,**
Oscillation Theory for Second Order Linear, Half-linear, Superlinear and Sublinear Dynamic Equations, Kluwer Academic Publishers, Dordrecht, 2002.

[29] **Y. Hino, T. Naito, N. V. Minh, J. S. Shin,**
Almost Periodic Solutions of Differential Equations in Banach Spaces, Taylor & Francis, London, 2002.

[30] **J. Andres, L. Górniewicz,**
Topological *Fixed Point Principles for Boundary Value Problems,* Kluwer Academic Publishers, Dordrecht, 2003.

[31] **K. S. Ha,**
Nonlinear Functional Evolutions in Banach spaces,
Kluwer Academic Publishers, Dordrecht, 2003.

[32] **A. Granas and J. Dugundji,**
Fixed Point Theory, Springer Monographs in Mathematics,
Springer, New York, 2003.

[33] **R. P. Agarwal, M. Bohner, W.-T. Li,**
Nonoscillation and Oscillation: Theory for Functional Differential Equations, Marcel Dekker, New York, 2004.

[34] **J. Appel, E. De Pascale, A. Vignoli,**
Nonlinear Spectral Theory, Walter de Gruyter & Co., Berlin, 2004.

[35] **Y. Q. Chen, Y. J. Cho,**
Nonlinear Operator Theory in Abstract Spaces and Applications, Nova Science Publishers, New York, 2004.

[36] **R. P. Agarwal, M. Bohner, S. R. Grace, D. O'Regan,**
Discrete Oscillation Theory, Hindawi Publishing Corporation, New York, 2005.

[37] **Y. Alber and I. Ryazantseva,**
Nonlinear Ill-posed Problems of Monotone Type. Springer, Dordrecht, 2006.

[38] **D. O'Regan, Y.-J. Cho and Y.-Q. Chen,**
Topological Degree Theory and Applications, Chapman and Hall, 2006.

PRESENTATION OF PAPERS. SPEECHES

[1] **LAS VEGAS, NEVADA**, Annual Meeting, American Mathematical Society, 1972. Invited lecture.

[2] **NEW YORK, NEW YORK**, 692nd Meeting, American Mathematical Society, 1972. Invited lecture

[3] **DALLAS, TEXAS**, Annual Meeting, American Mathematical Society, 1973. Invited lecture

[4] **JONESBORO, ARKANSAS**, Symposium on Differential Equations and Related Topics, 1973. Invited lecture.

[5] **MONTRÉAL, CANADA**, Collaboration, Departément d' Informatique, 1973.

[6] **KINGSTON, RHODE ISLAND**, Regional Research Conference, Differential Games and Control Theory, 1973. Invited lecture.

[7] **ATHENS, GREECE**, Carathéodory Symposium, Invited Lecture, 1973. Title: *"Banach Space-Valued Solutions of Differential Equations Containing a Parameter."*

[8] **HIROSHIMA, JAPAN**, University of Hiroshima, 1974, Invited Colloquium lecture on *"Quasilinear Differential Systems and Control Problems."* Collaboration with Professors Takashi Kusano and Hiroshi Onose.

[9] **SAN FRANCISCO, CALIFORNIA**, Annual Meeting, American Mathematical Society, 1974. Title: *"Hyperpolynomial Approximation of Nonlinear Integro-Differential Systems."*

[10] **TUCSON, ARIZONA**, US-Mexico Symposium on Differential Equations, 1974. Invited lecture.

[11] **TALLAHASSEE, FLORIDA**, Florida State Univ., 1974. Invited Colloquium lecture on the *"Asymptotic Equivalence Between Two Nonlinear Differential Systems."*

[12] **GAINESVILLE, FLORIDA**, NSF-CBMS Regional Meeting, American Mathematical Society, 1974. Invited lecture.

[13] **OBERWOLFACH, GERMANY**, Mathematisches Forschungsinstitut, Tage über Gewönliche Diffentialgleichungen, Invited Lecture, 1974. Title of lecture: *"Quasilinear Differential Systems. Existence and Stability."*

[14] **KINGSTON, RHODE ISLAND**, University of Rhode Island, 1974, Invited Colloquium Lecture. Lecture on *"Finite-Dimensional Boundary Value Problems on Infinite Intervals."*

[15] **NEW YORK, NEW YORK**, 713th Meeting American Mathematical Society, Special Session on "Nonlinear Differential Equations", 1974, Invited Lecture on *"The Hildebrandt-Graves Theorem and Boundary Value Problems for Nonlinear Systems."*

[16] **MEXICO CITY, MEXICO**, 3rd US-Mexico Conference on Differential Equations, Invited Lecture, 1975.

[17] **PARIS, FRANCE**, Université Paris VII, Exchange Visitor, 3 months, 1975.

[18] **STARKSVILLE, MISSISSIPPI**, NSF-CBMS Regional Conference. Stability of Dynamical Systems, **Invited Address**, 1975. *"Survey talk on the Status of Nonlinear Oscillation."*

[19] **HOUSTON, TEXAS**, NSF-CBMS Regional Conference on Nonlinear Diffusion, Invited Lecture, 1976. Lecture was on *"Quasilinear Evolution Equations in Banach Spaces."*

[20] **MEXICO CITY, MEXICO**, Two-Month Seminar on *"Nonlinear Oscillation Theory."* Instituto Politecnico Nacional, 1977. Collaboration with Professor Jorge Gonzales Toro.

[21] **ARLINGTON, TEXAS**, Symposium on Nonlinear Equations in Abstract Spaces, 1977, Invited lecture. Title: *"On the Equation Tx = y in Banach Spaces with Weakly Continuous Duality Maps."*

[22] **ATLANTA, GEORGIA**, Annual Meeting, American Mathematical Society, 1978. Invited lecture.

[23] **BILOXI, MISSISSIPPI**, Annual Meeting, American Mathematical Society, 1979. **Co-Organizer**, **Special Session** on *"Oscillation and Asymptotic Behavior of Ordinary Differential Equations."*

[24] **BLACKSBURG, VIRGINIA**, South Eastern-Atlantic Regional Conference on Differential Equations, 1981, Invited Lecture.

[25] **CINCINNATI, OHIO**, Annual Meeting, American Mathematical Society, 1982. Invited lecture.

[26] **DENVER, COLORADO**, Annual Meeting, American Mathematical Society, 1983. **Co-Organizer**, **Special Session** on "Monotonicity Methods in Differential Equations." Special Session on "Adjoint Operator Theory," Invited Lecture.

[27] **WASHINGTON, D.C.**, Howard University, 1984, Invited Colloquium Lecture on *"Nonlinear Differential Equations with m-Accretive Operators."*

[28] **BIRMINGHAM, ALABAMA**, International Conference on Differential Equations and Mathematical Physics, March, 1986. Organized by the University of Alabama at Birmingham. Invited Lecture. *"The Convexity of the Interior of the Domain of an m-Accretive Operator in a Banach Space."*

[29] **ORLANDO, FLORIDA**, University of Central Florida, Colloquium Lecture on *"Nonlinear Functional Evolutions and Methods of Lines,"* 1986.

[30] **MELBOURNE, FLORIDA**, Florida Institute of Technology, Department of Applied Mathematics, Colloquium Lecture on *"Nonlinear Evolution Inclusions Involving m-Accretive Operators",* 1990.

[31] **ORLANDO, FLORIDA**, University of Central Florida, Department of Mathematics, Invited Colloquium Lecture on *"Degree Theory and Nonlinear Elliptic Problems."*

[32] **TAMPA, FLORIDA**, First World Congress of Nonlinear Analysts, August 19-26, 1992. Member of the Global Organizing Committee. **Organizer**, **Special Session** on "Accretive and Monotone Operator Theory." Title: *"Recent Results Involving Compact Perturbations and Compact Resolvents of Accretive Operators in Banach Spaces."*

[33] **ATHENS, OHIO**, International Conference on Optimal Control of Differential Equations and Variational Inequalities, March, 1993. Organized by Ohio University. Invited lecture. Title: *"Further Results on the Controllability of Evolutions with Pre-Assigned Responses."*

[34] **GUANGZHOU, CHINA**, International Conference on Functional Differential Equations, May, 1993. Organized by the Mathematics Institute of the Chinese Academy of Sciences and several universities including: Anhui University, Fudan University, Hunan University, Qingdao Ocean University and Zhongshan University. **Plenary** lecture. Title: *"Compactness Methods and Methods of Lines in the Theory of Functional Differential Equations."*

[35] **GLASGOW, SCOTLAND**, International Conference on Evolution Equations, July 25-29, 1994. Invited lecture. Title: *"Compact Evolution Operators and Methods of Lines for m-Accretive Operators in Banach Spaces."*

[36] **PLOVDIV, BULGARIA**, Fifth International Colloquium on Differential Equations, 18-23 August, 1994. Invited **1 hour lecture**. Title: *"Evolution Equations, Methods of Lines and Control Problems Associated with Perturbations of Nonlinear m-Accretive Operators in Banach Spaces."*

[37] **SAN FRANCISCO, CALIFORNIA**, Annual Meeting of the American Mathematical Society, January 4-7, 1995. **Organizer**, **Special Session** on the "Theory and Applications of Nonlinear Operators of Accretive and Monotone Type." Lecture: *"P-Regular Mappings and Alternative Results for Perturbations of m-Accretive Operators in Banach Spaces."* The proceedings of the session were published by Marcel Dekker, in March 1996, in the series **Lecture Notes in Pure and Applied Mathematics**. **Editor:** A. G. Kartsatos.

[38] **IOANNINA, GREECE**, University of Ioannina, Department of Mathematics, Invited Colloquium lecture, May 19, 1995. Title: *"Accretivity and Monotonicity in Nonlinear Evolution Equations and Elliptic Problems in Banach Spaces."*

[39] **JERUSALEM, ISRAEL**, First Joint American Mathematical Society - Israel Mathematical Union International Conference, Hebrew University (Givat Ram), May 24-26, 1995. Special Session on Optimization and Nonlinear Analysis. Invited lecture. Title: *"Evolution Equations, Elliptic Inclusions and Control Problems Involving Accretive and Monotone Operators."* A relevant joint paper with Professor Z. Guan (#118), appeared in the proceedings of the session, Contemporary Mathematics, *"Recent Developments in Optimization Theory and Nonlinear Analysis"*, Editors: Y. Censor and S. Reich, 1997.

[40] **ARIEL, ISRAEL**, College of Judea and Samaria, Research Institute. Invited Colloquium lecture, May 29, 1995. Title: *"Accretivity and Monotonicity in Evolution and Ellipticity."*

[41] **HAIFA, ISRAEL**, Technion-Israel Institute of Technology, Department of Mathematics, Nonlinear Analysis Seminar. Invited Seminar lecture, May 30, 1995. Title: *"Evolution Operators and Elliptic Inclusions in Banach Spaces."*

[42] **KIEV, UKRAINE**, International Conference on Nonlinear Differential Equations, Organized by the National Academy of Sciences of Ukraine and Kiev State University, August 21-27, 1995. **Plenary** lecture. Title: *"Nonlinear Evolutions and Nonlinear Inclusions Involving Accretive and Monotone Operators in Banach Spaces."*

[43] **VORONEZH, RUSSIA**, Spring Mathematical School on Modern Methods in the Theory of Boundary Value Problems, April 17-23, 1996. Organized by 5 members of the Russian Academy of Sciences (V. A. Ilyin, Y. S. Osipov, E. F. Mischenko, A. B. Kurzhanskii and S. M. Nikolskii), Moscow State University, the Steklov Institute and Voronezh State University. Invited lecture/collaboration. **Plenary** lecture. Title: *"Perturbation Results for Maximal Monotone and M-Accretive Operators in Banach Spaces."*

Second invited lecture for the special session on “Topological Methods” of Professor Y. G. Borisovich. Title: “*P-Regular Mappings and Control Theory Involving Accretive and Monotone Operators*”.

[44] **MOSCOW, RUSSIA,** Moscow State (Lomonosov) University, International Conference on Differential Equations and Related Topics dedicated to I. G. Petrovsky, April 25-29, 1996. Organized by Academician Olga A. Oleinik. Invited lecture. Title: *“On the Perturbation Theory of Maximal Monotone and m-Accretive Operators in Banach Spaces”*.

[45] **TRIESTE, ITALY**, International Atomic Energy Agency/UNESCO, International Center for Theoretical Physics, May 2-18, 1996. Invited series of 9, 1.5-hour lectures to post-graduate Diploma international students. Title of series: *“Perturbation Theory and Evolution Equations Involving m-Accretive and Maximal Monotone Operators.”*

[46] **SPRINGFIELD, MISSOURI**, International Conference on Dynamical Systems and Differential Equations, May 29-June 1, 1996. Special Session on “Evolution Equations” organized by N. Hirano and M. Otani (Japan). Invited speaker. Title of lecture: *"Nonlinear Elliptic-Type Inclusions Involving Perturbations of M-Accretive and Maximal Monotone Operators."*

[47] **ATHENS, GREECE**, Second World Congress of Nonlinear Analysts, July 10-17, 1996. Member of the Global Organizing Committee. **Organizer**, **Special Session** on “Operators of Monotone Type in Evolution, Ellipticity and Fixed Point Theory.” **Organizer, Mini-Symposium** on “Monotonicity Methods in Nonlinear Analysis.” One of the **1-hour main address speakers.** Title of lecture: ***“****Perturbation Theory of Maximal Monotone and m-Accretive Operators in Banach Spaces.”*

[48] **ORLANDO, FLORIDA**, *"Mathematics Today and Tomorrow"*, International Conference to Celebrate the 20th Anniversary of the Founding of the International Journal of Mathematics and Mathematical Science Information, sponsored by the University of Central Florida and the Calcutta Mathematical Society, University of Central Florida, March 13-15, 1997. One of the eight invited speakers for the Special Session on Analysis. Title of lecture*: "Perturbation Theory for Maximal Monotone and m-Accretive Operators"*.

[49] **TBILISI, REPUBLIC OF GEORGIA**, International Symposium on Differential Equations and Mathematical Physics, June 21-25, 1997. The symposium was organized by the A. Razmadze Institute of the Georgian Academy of Sciences. Invited lecture. There were 4 invited lectures from the US. Title of lecture: *"New Eigenvalue Results for Perturbations of Nonlinear Maximal Monotone and m-Accretive Operators in Banach Spaces"*.

[50] **ATHENS, GREECE**, University of Athens, Mathematics Department, Mathematical Analysis Sector, Applied Mathematics Seminar, June 5, 1997. Invited lecture. Title of lecture*: "Topological Degree Theories and Partial Differential Equations"*.

[51] **PATRAS, GREECE**, University of Patras, Mathematics Department, General Mathematics Seminar, June 11, 1997. Invited lecture. Title of lecture*: "Monotonicity and Topological Degree Theories in Nonlinear Analysis"*.

[52] CHIBA, JAPAN, Chiba University, Department of Mathematics. Mathematics Seminar of Professor Nobuyuki Kenmochi, May 24, 1999. Invited lecture. Title of lecture: *"Topological Degree Theories for Densely Defined Mappings Involving Operators of Type (S+)."*

[53] **YOKOHAMA, JAPAN,** Yokohama University, Department of Mathematics. Mathematics Seminar of Professor Norimichi Hirano, May 26, 1999. Invited lecture. Title of lecture: *"Eigenvalue Problems Involving Maximal Monotone and m-Accretive Operators in Banach Spaces."*

[54] **FUKUOKA, JAPAN**, Fukuoka University, Department of Mathematics, Mathematics Seminar of Professor Takasi Kusano, May 28, 1999. Invited lecture. Title of lecture: *"Topological Degree Theories for Densely Defined Mappings Involving Operators of Type (S+)."*

[55] **PUSAN, REPUBLIC OF KOREA**, International Conference of Functional Differential Equations and Related Topics, June 1, 1999. Invited **plenary** lecture. Title of lecture: *"Topological Degree Theories for Densely Defined Mappings Involving Operators of Type (S+)."*

[56] **BEIJING, CHINA**, Institute of Mathematics of the Chinese Academy of Sciences, Professors Shujie Li and Bingren Li, June 7, 1999. Invited lecture. Title of lecture: *"Topological Degree Theories for Densely Defined Mappings Involving Operators of Type (S+)."*

[57] **SHANGHAI, CHINA**, Jiao Tong University, Department of Mathematics, Seminar of Professor Shunian Zhang. June 17, 1999. Invited lecture. Title of lecture: *"Topological Degree Theories for Densely Defined Mappings Involving Operators of Type (S+)."*

[58] **LVIV, UKRAINE**, International Conference on Partial Differential Equations in Honor of Juliusz P. Schauder, August 26, 1999. Invited lecture. Title of lecture: *"Ranges of Sums for Densely Defined Pseudomonotone Perturbations of Maximal Monotone Operators".*

[59] **PATRAS, GREECE,** International Conference on Differential and Difference Equations, July 1-4, 2002. **Plenary lecture.** Title of lecture: *"Recent Developments in Topological Degree Theory in Banach Spaces and Its Applications to Partial Differential Equations".*

[60] **TAIYUAN, CHINA,** ICM Satellite Conference on Nonlinear Functional Analysis, August 14-18, 2002. Invited lecture. Title of lecture: *"Topological Degree Theory and Applications to Various Problems of Nonlinear Functional Analysis".*

[61] **ATHENS, GREECE,** General Seminar of the University of Athens, Department of Mathematics, May 29, 2003. Invited lecture. Title of lecture: "Degree Theories in Banach Spaces and Applications".

[62] **ATHENS, GREECE,** General Seminar of the University of Athens, Department of Mathematics, May 20, 2005. Invited lecture. Title of lecture: "Topological Degree Theories and Eigenvalue Problems in Banach Spaces".

[63] **ORLANDO, FLORIDA, USA,** World Congress of Nonlinear Analysts, Invited 1-hour speaker and special session organizer. Title of the special session: "Topological Degree Theory and Its Applications".

PH.D. STUDENTS AT USF

MAJOR PROFESSOR OF THE FOLOWING PH.D. STUDENTS AT USF

1. **James R. Ward, 1975 (Math. Department's 1st Ph.D.),** *"Contributions to the existence and stability theory of Volterra integral equations".*
2. **William R. Zigler, 1975,** *"On the theory of differential equations in the weak topology of a reflexive Banach space".*

3. **Terry J. Walters, 1978,** *"Contributions to the theory of the oscillation of matrix and scalar differential equations".*
4. **Jorge G. Toro, 1979,** *"Passivity for nonlinear evolution equations in Banach spaces".*
5. **Witold Kosmala, 1980,** *"Comparison results for functional differential equations with two middle terms".*
6. **Victor Dannon, 1984,** *"The generation of an evolution operator in a Banach lattice".*
7. **Jessica Craig, 1984,** *"Functional evolutions involving T-accretive and T-Lipschitz operators in Banach lattices".*
8. **Richard D. Mabry, 1985,** *"Nonlinear analysis and the control of space with pre-assigned responses".*
9. **David Kerr, 1987,** *"Perturbations of monotone operators in Banach spaces".*
10. **Zhengyuan Guan, 1990,** *"On operators of monotone type in Banach spaces".*
11. **Ki-Yeon Shin, 1990,** *"Zeros of m-accretive operators and abstract evolution equations in Banach spaces".*
12. **Xinlong Weng, 1990,** ***"****Approximation methods for solving nonlinear equations in Banach spaces".*
13. **David R. Kaplan, 1990,** *"Applications of nonlinear analysis in the control of space with pre-assigned responses".*
14. **Xiaoping Liu, 1994,** *"Nonlinear inclusions of elliptic type and methods of lines for evolution equations."*
15. **Zouhua Ding, 1996,** *"Contributions to the theory of the existence of zeros of perturbations of m-accretive operators in Banach spaces".*
16. **Sergey Belyi, 1996.** *"Operator-valued R-functions in the theory of linear dynamical systems".*
17. **Jing Lin, 1997.** *"Homotopy invariance of time-dependent domains and perturbations theory of maximal monotone and m-accretive operators in Banach spaces".*

18. **Lubomir Markov, 1998.** *“An L2-approach to second order functional evolutions in Banach spaces”.*
19. **Joseph Quarcoo, 2006,** “*Contributions to the degree theory for perturbations of maximal monotone operators”.*
20. **Dhruba R. Adhikari, “***Applications of degree theories to nonlinear operator equations in Banach spaces”.*
21. **Ibrahimou Boubakari,** “*The Leray-Schauder approach for the topological degree of perturbed maximal monotone operators”.*
22. **Teffera M. Asfaw,** *“Topological Degree and Variational Inequality Theories for Pseudomonotone Perturbations of Maximal Monotone Operators”.*

I have been the major professor of 22 Ph.D. students. I was the major professor of the first Ph.D. student of the department of mathematics at USF in 1975.

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