

February 8, 2012

## IGOR KUKAVICA

### *Curriculum Vitae*

#### **Education:**

**Ph.D. Mathematics**, Indiana University, August 1993

*thesis advisor:* Ciprian Foias

**M.S. Mathematics**, University of Ljubljana, Slovenia, July 1988

**B.S. Mathematics**, University of Ljubljana, Slovenia, August 1986

#### **Research Interests:**

Partial differential equations, mathematical fluid dynamics

#### **Positions Held:**

*January 2012–May 2012*, Visiting Associate, Caltech

*September 2004–Present*, Professor, University of Southern California

*September 1998–August 2004*, Associate Professor, University of Southern California

*September 1997–August 1998*, Assistant Professor, University of Southern California

*October 1995–August 1997*, Assistant Professor, The University of Chicago

*October 1993–September 1995*, Dickson Instructor, The University of Chicago

#### **Editorial Boards:**

*November 2005–Present*, Communications in Pure and Applied Analysis

#### **Awards:**

NSF grant, DMS-1009769, July 2010–June 2013

NSF grant, DMS-0604886, July 2006–June 2010

NSF grant, DMS-0306586, July 2003–June 2006

NSF grant DMS-0072662, July 2000–June 2003

NSF grant DMS-9623161, July 1996–June 1999

Alfred P. Sloan Fellowship, 2000

Alfred P. Sloan doctoral dissertation fellowship, 1991

Weber Award, Indiana University, 1990

Preseren Award, University of Ljubljana, 1987

### Short-term visits:

Université de Genève, Summer 1995 (one month), Universidad de Chile, Dec. 1995 (one week), June 1996 (one week), Mar. 2011 (one week), Université de Nice, Summer 1998 (one month), Mathematical Institute of Czech Academy of Sciences, May 2011 (one week), University of Ljubljana, Summer 2011 (one month), California Institute of Technology, Winter and Spring 2012, University of Chicago, February 2012 (one week)

### Ph.D. students:

Mehmet Malcok, Ph.D., 2001, Pennsylvania State University, Erie  
Juan J. Torres, Ph.D., 2006, University of California, Irvine  
Vlad Vicol, Ph.D., 2010, University of Chicago  
Ednei Reis, Ph.D., 2011  
Mihaela Ignatova, Ph.D., 2011, UC Riverside  
Yuan Pei (current)

### Postdoctoral Associates:

Seok Huang, Amjad Tuffaha, Walter Rusin

### Publications:

1. *On the time analyticity radius of the solutions of the 2 dimensional Navier-Stokes equations*, J. Dynam. Diff. Eq. **3** (1991), 611–618.
2. *On the behavior of the solutions of the Kuramoto-Sivashinsky equations for negative time*, J. Math. Anal. Appl. **166** (1992), 601–606.
3. *On the number of determining nodes for the Ginzburg-Landau equation*, Nonlinearity **5** (1992), 997–1006.
4. *An upper bound for the winding number for solutions of the Ginzburg-Landau equation*, Indiana Univ. Math. J. **41** (1992), 825–836.
5. *An absence of certain class of periodic solutions in the Navier-Stokes equations*, J. Dynam. Diff. Eq. **6** (1994), 175–183.
6. *Oscillations of solutions of the Kuramoto-Sivashinsky equation*, Physica D **76** (1994), 369–374.
7. *Hausdorff length of level sets for solutions of the Ginzburg-Landau equation*, Nonlinearity **8** (1995), 113–129.
8. (with C. Foias), *Determining nodes for the Kuramoto-Sivashinsky equation*, J. Dynam. Diff. Eq. **7** (1995), 365–373.
9. *Nodal volumes for eigenfunctions of analytic regular elliptic problems*, J. d'Analyse Mathématique **67** (1995), 269–280.
10. *Hausdorff measure of level sets for solutions of parabolic equations*, International Mathematics Research Notices No. 13 (1995), 671–682.
11. *Level sets of the vorticity and the stream function for the 2D periodic Navier-Stokes equations with potential forces*, J. Diff. Eq. **126** (1995), 374–388.
12. (with C. Foias and M.S. Jolly), *Localization of attractors by their analytic properties*, Nonlinearity **9** (1996), 1565–1581.
13. (with P. Constantin, C. Foias, and A.J. Majda), *Dirichlet quotients for periodic 2 dimensional Navier-Stokes equations*, J. Math Pures Appl. **76** (1997), 125–153.
14. *Level sets for the stationary Ginzburg-Landau equation*, Calc. Var. **5** (1997), 511–521.
15. (with K. Nyström), *Unique continuation on the boundary for Dini domains*, Proceedings of AMS **126** (1998), 441–446.

16. *Quantitative uniqueness for second order elliptic operators*, Duke Math. J. **91** (1998), 225–240.
17. (with Z. Grujić), *The space analyticity for the Navier-Stokes and related equations with initial data in  $L^p$* , J. Funct. Anal. **152** (1998), 447–466.
18. *Self-similar variables and the complex Ginzburg-Landau equation*, Comm. PDE **24** (1999), 545–562.
19. (with Z. Grujić), *Space analyticity for the nonlinear heat equation in a bounded domain*, J. Diff. Eq. **154** (1999), 42–54.
20. *On the dissipative scale for the Navier-Stokes equation*, Indiana Univ. Math. J. **48** (1999), 1057–1081.
21. *A ladder inequality for the Navier-Stokes equation*, Nonlinearity **13** (2000), 639–652.
22. *Quantitative uniqueness and vortex degree estimates for solutions of the Ginzburg-Landau equation*, Electron. J. Differential Equations **2000** (2000), 1–15 (electronic).
23. (with C. Foias, M.S. Jolly, and E.S. Titi), *The Lorenz equation as a metaphor for the Navier-Stokes equations*, Discrete Contin. Dynam. Systems **7** (2001), 403–429.
24. (with P.K. Friz and J.C. Robinson), *Nodal parametrization of analytic attractors*, Discrete Contin. Dynam. Systems **7** (2000), 643–657.
25. *Interior gradient bounds for the 2D Navier-Stokes system*, Discrete Contin. Dynam. Systems **7** (2000), 873–882.
26. *Space-time decay for solutions of the Navier-Stokes equations*, Indiana Univ. Math. J. **50** (2001), 205–222.
27. (with Z. Grujić), *A remark on time-analyticity for the Kuramoto-Sivashinsky equation*, Nonlinear Analysis **52** (2003), 69–78.
28. *Length of vorticity nodal sets for solutions of the Navier-Stokes system*, Comm. PDE **28** (2003), 771–793.
29. *On local uniqueness of solutions of the Navier-Stokes equations with bounded initial data*, J. Diff. Eq. **194** (2003), 39–50.
30. *Fourier parameterization of attractors for dissipative equations in one space dimension*, J. Dynam. Diff. Eq. **15** (2003), 473–484.
31. *Spatial complexity of solutions of higher order partial differential equations*, Nonlinearity **7** (2004), 459–476.
32. *Backward uniqueness for solutions of linear parabolic equations*, Proc. Amer. Math. Soc. **132** (2004), 1755–1760.
33. (with J.C. Robinson), *Distinguishing smooth functions by a finite number of point values, and a version of the Takens embedding theorem*, Physica D **196** (2004), 45–66.
34. (with M. Malcok), *Backward behavior of solutions of the Kuramoto-Sivashinsky equation*, J. Math. Anal. Appl. **307** (2005), 455–464.
35. *On Fourier Parametrization of Global Attractors for Equations in One Space Dimension*, Discrete Contin. Dynam. Systems **13** (2005), 553–560.
36. (with J.J. Torres), *Weighted bounds for the velocity and the vorticity for the Navier-Stokes equations*, Nonlinearity **19** (2006), 293–303.
37. (with M. Ziane), *One component regularity for the Navier-Stokes equation*, Nonlinearity **19** (2006), 453–469.
38. *Pressure integrability conditions for uniqueness of mild solutions*, J. Diff. Eq. **223** (2005), 427–441.
39. (with M. Ziane), *Regularity of the Navier-Stokes equation in a thin periodic domain with large data*, Discrete Contin. Dynam. Systems **16** (2006), 67–86.
40. *Role of the pressure for validity of the energy equality for solutions of the Navier-Stokes equation*, J. Dynam. Diff. Eq. **18** (2006), 461–482.
41. (with M. Ziane), *Régularité conditionnelle des équations de Navier-Stokes*, C. R. Math. Acad. Sci. Paris **343** (2006), 31–36.
42. (with M. Ziane), *Sur la régularité des solutions des équations de Navier-Stokes dans un domaine mince périodique de faible épaisseur*, C. R. Math. Acad. Sci. Paris **344** (2007), 97–102.
43. (with M. Ziane), *On the regularity of the Navier-Stokes equation in a thin periodic domain*, J. Diff. Eq. **234**

(2007), 485–506.

44. *Log-log convexity and backward uniqueness*, Proc. Amer. Math. Soc. **135** (2007), 2415–2421.
45. (with J.J. Torres), *Weighted  $L^p$  decay for solutions of the Navier-Stokes equations*, Comm. PDE **32** (2007), 819–831.
46. (with M. Ziane), *Navier-Stokes equation with regularity in one direction*, J. Math. Phys. **48** (2007), 10 pp.
47. (with M. Ziane), *The regularity of solutions of the primitive equations of the ocean in space dimension three*, C. R. Math. Acad. Sci. Paris **345** (2007), 257–260.
48. (with M. Ziane), *On the Regularity of the primitive equations of the ocean*, Nonlinearity **20** (2007), 2739–2753.
49. *On partial regularity for the Navier-Stokes equations*, Discrete Contin. Dynam. Systems **21** (2008), 717–728.
50. (with Vlad Vicol), *On local uniqueness of weak solutions to the Navier-Stokes system with  $BMO^{-1}$  initial datum*, J. Dynam. Differential Equations **20** (2008), 719–732.
51. *Regularity for the Navier-Stokes equations with a solution in a Morrey space*, Indiana Univ. Math. J. **57** (2008), 2843–2860.
52. (with M. Ziane), *Uniform gradient bounds for the primitive equations of the ocean*, Differential Integral Equations **21** (2008), 837–849.
53. (with Vlad Vicol), *On the radius of analyticity of solutions to the three-dimensional Euler equations*, Proc. Amer. Math. Soc. **137** (2008), 669–677.
54. *On the weighted decay for solutions of the Navier-Stokes system*, Nonlinear Anal. **70** (2009), 2466–2470.
55. (with A. Tuffaha and M. Ziane), *Strong solutions to a nonlinear fluid structure interaction system*, J. Diff. Eq. **247** (2009), 1452–1478.
56. *The fractal dimension of the singular set for solutions of the Navier-Stokes system*, Nonlinearity **22** (2009), 2889–2900.
57. *Partial regularity results for solutions of the Navier-Stokes system*, J. Rodrigo and J.C. Robinson editors, Proceedings of the workshop on “Partial differential equations and fluid mechanics,” Warwick, 2009.
58. (with A. Tuffaha and M. Ziane), *Strong solutions to a fluid structure interaction system*, Adv. Diff. Eq. **15** (2010), 231–254.
59. *On regularity for the Navier-Stokes equations in Morrey spaces*, Discrete Contin. Dynam. Systems **26** (2010), 1319–1328.
60. (with M. Ignatova), *Unique continuation and complexity of solutions to parabolic partial differential equations with Gevrey coefficients* Adv. Diff. Eq. **15** (2010), 953–975.
61. (with R. Temam, V. Vicol, and M. Ziane), *Local existence and uniqueness for the hydrostatic Euler equations on a bounded domain*, C. R. Math. Acad. Sci. Paris **348** (2010), 639–645.
62. (with V. Vicol), *Domain of analyticity for solutions of the three-dimensional Euler equations in half space*, Discrete Contin. Dynam. Systems **29** (2011), 285–303.
63. *Partial regularity for the Navier-Stokes equations with a force in a Morrey space*, J. Math. Anal. Appl. **374** (2011), 573–584.
64. (with R. Temam, V. Vicol, and M. Ziane), *Local existence and uniqueness for the hydrostatic Euler equations on a bounded domain* J. Diff. Eq. **250** (2011), 1719–1746.
65. (with E. Reis), *Asymptotic expansion for solutions of the Navier-Stokes equations with potential forces*, J. Diff. Eq. **250** (2011), 607–622.
66. (with A. Tuffaha and M. Ziane), *Strong solutions to a Navier-Stokes-Lamé system on a domain with a non-flat boundary*, Nonlinearity **24** (2011), 159–176.
67. (with V. Vicol), *On the analyticity and Gevrey-class regularity up to the boundary for the Euler equations*, Nonlinearity **24** (2011), 765–796.

68. (with A. Tuffaha), *Solutions to a fluid-structure interaction free boundary problem*, Discrete Contin. Dynam. Systems (to appear).
69. *On the decay of solutions of the Navier-Stokes system with potential forces*, Proceedings of the workshop on “Partial differential equations and fluid mechanics 2011,” Warwick (to appear).
70. (with M. Ignatova), *Strong unique continuation for higher order elliptic equations with Gevrey coefficients*, J. Diff. Eq. (to appear).
71. (with V. Vicol), *On the local existence of analytic solutions to the Prandtl boundary layer equations* (to appear).
72. (with M. Ignatova), *Strong unique continuation for the Navier-Stokes equation with non-analytic forcing* (submitted).
73. (with A. Tuffaha), *Solutions to a free boundary problem of fluid-structure interaction* (submitted).
74. (with M. Ignatova and M. Ziane), *Local existence of solutions to the free boundary value problem for the primitive equations of the ocean* (submitted).
75. (with A. Mazzucato and A. Tuffaha), *Sharp trace regularity for an anisotropic elasticity system* (submitted).
76. (with W. Rusin and M. Ziane), *Solutions of the Navier-Stokes equations for large oscillatory data* (submitted).
77. (with A. Tuffaha), *Well-posedness for the compressible Navier-Stokes-Lamé system with a free interface* (submitted).
78. (with Y. Pei), *An estimate on the size of the singular set for solutions of the Navier-Stokes system* (submitted).

#### Invited Lectures:

- Feb. 3, 1993, Colloquium, Brown University
- Feb. 8, 1993, Colloquium, University of Tennessee
- July 14, 1993, special session, SIAM conference, Philadelphia
- Nov. 12, 1993, Conference Dynamics Days in Columbia, MO
- Jan. 26, 1995, Colloquium, Michigan State University
- Jan. 30, 1995, Colloquium, University of Texas, Austin
- Feb. 10, 1995, Colloquium, UC Riverside
- Apr. 12, 1995, Applied Mathematics seminar, University of Chicago
- May 4, 1995, Analysis seminar, University of Notre Dame
- May 17, 1995, Analysis seminar, Northwestern University
- June 1, 1995, contributed talk at the conference Approximation Dynamics with Applications to Numerical Analysis, Columbia, Missouri
- June 15, 1995, Applied Mathematics seminar, University of Geneva
- July 6, 1995, Conference ICIAM 95, Hamburg, Germany (mini-symposium Dynamics of Partial Differential Equations)
- Aug 28, 1995, Cambridge, UK; workshop Singularities in PDEs
- Dec. 13, 1995, analysis seminar, Universidad de Chile
- Dec. 20, 1995, analysis seminar, Universidad Catolica
- June 17, 1996, seminar, Beijing Normal University
- June 24, 1996, US-Chinese Conference on Recent Developments in Differential Equations and Applications, Hongzhou, China
- Jan. 15, 1997, applied mathematics seminar, UC Irvine
- Jan. 21, 1997, Colloquium, University of Texas, Austin
- Feb. 3, 1997, Colloquium, University of Illinois, Chicago
- Feb. 26, 1997, Colloquium, UC Davis
- Mar. 4, 1997, Colloquium, University of Southern California
- May 8, 1998, analysis seminar, UC Los Angeles
- May 15 and 20, 1998, analysis seminar, Université de Nice

June 9, 1998, University of Minnesota, Conference in honor of John Ball  
June 19, 1998, Colloquium, Université de Nice  
Aug. 12, 1998, analysis seminar, Universidad de Chile  
Oct. 6, 1999, analysis seminar, UC Irvine  
Apr. 10, 1999, Southern California Analysis and PDE meeting, Santa Barbara  
Oct. 10, 1999, special session “The diverse mathematical legacy of Jean Leray” on the AMS meeting, Austin  
Mar. 12, 2000, AMS sectional meeting, UC Santa Barbara  
Apr. 2, 2000, “Irvine days in Applied and Computational Mathematics,” UC Irvine  
May 15, 2000, applied mathematics seminar, California Institute of Technology  
May 20, 2000, special session, AIMS meeting, Kennesaw State University  
Sept. 15, 2000, Conference in honor of C. Foias and R. Temam, Indiana University  
Oct. 21, 2000, special session on the AMS sectional meeting, San Francisco State University  
Oct. 24, 2000, Analysis Seminar, UC Irvine  
Nov. 3, 2000, Analysis Seminar, UC Davis  
Apr. 2, 2001, Applied Mathematics Seminar, Texas A&M Univ.  
Apr. 27, 2001, Analysis Seminar, UC Santa Barbara  
Nov. 10, 2001, AMS sectional meeting at UC Irvine, special session “Harmonic Analysis and PDE”  
Nov. 11, 2001, AMS sectional meeting at UC Irvine, special session “Partial Differential Equations and Applications”  
May 26, 2002, special session “Invariant Manifolds and Applications” on International Conference on Dynamical Systems and Differential Equations in Wilmington, NC.  
Nov. 3, 2002, SCAPDE conference.  
February 26, 2003, Colloquium, UC Riverside  
March 13, 2003, Colloquium, University of Nevada, Reno  
April 5, 2003, AMS sectional meeting at Indiana University  
June 19, 2003, Colloquium, University of Ljubljana  
October 17, 2003, Colloquium, Oklahoma State University  
April 4, 2004, AMS sectional meeting at USC  
May 20, 2004, workshop Analytical and Computational Challenges of Incompressible Flows at High Reynolds Number, CSCAMM, Univ. of Maryland  
June 19, 2004, special session, AIMS meeting, Pomona  
April 25, 2005, SIAM Chapter Colloquium, USC  
October 12, 2005, MSRI, Fluid Dynamics Workshop  
April 1, 2006, AMS sectional meeting, Miami, FL  
November 17, 2005, Colloquium, UC Irvine  
October 10, 2006, PDE seminar, Univ. of Notre Dame  
October 11, 2006, PDE seminar, Indiana University  
November 3, 2006, AMS sectional meeting, Univ. of Arkansas, Fayetteville  
January 11, 2007, PDE seminar, UC San Diego  
March 14, 2007, PDE seminar, University of Virginia  
March 17, 2007, special session, AMS sectional meeting, Miami University  
May 21, 2007, invited speaker, workshop Partial differential equations and fluid mechanics, University of Warwick  
October 6, 2007, AMS sectional meeting, DePaul University, Chicago, IL  
November 19, 2007, 2007 Nonlinear dynamics and PDE mini-conference, Tempe, AZ  
December 10, 2007, Recent Advances in Navier-Stokes and Geophysical Fluid Dynamics, SIAM Conference on Analysis of Partial Differential Equations, Mesa, AZ  
April 5, 2008, special session on Recent Advances in Classical and Geophysical Fluid Dynamics, AMS sectional meeting, Bloomington IN  
April 10, 2008, Colloquium, University of Virginia  
April 11, 2008, graduate student seminar, Pennsylvania State University  
April 11, 2008, Applied Mathematics Colloquium, Pennsylvania State University  
May 21, 2008, special session at the 7th AIMS conference in on Dynamical Systems and Differential Equations,

Arlington, TX

Mar 7, 2009, 2nd conference on Mathematics of Fluids, UC Santa Barbara

Mar 25, 2009, special session at the IMACS world congress, Athens, GA

Mar 30, 2009, PDE seminar, Univ. of Illinois, Chicago

Oct 16, 2009, special session at an AMS sectional meeting at Baylor Univ.

Oct 17, 2009, special session at an AMS sectional meeting at Baylor Univ.

Nov 8, 2009, special session “Fluid dynamics” at an AMS sectional meeting in UC, Riverside

Dec 9, 2009, special session “PDE and fluid dynamics” at a SIAM conference on Analysis of PDEs in Miami, FL

Feb 24, 2010, plenary talk at the conference Analysis and Computation of Incompressible Fluid Flow, IMA, Univ. of Minnesota

Jun 8, 2010, Analytical and Numerical Problems in Fluid Dynamics with Applications, Catania, Italy, June 7–11, 2010

Jun 24, 2010, special session on the “International Congress in Mathematical Fluid Dynamics and its Applications,” Rennes, France

Jul 5, 2010, Partial Differential Equations and Fluid Mechanics 2010, Univ. of Warwick, UK

Sep 23, 2010, Workshop on dissipative PDEs in bounded and unbounded domains and related attractors

Sep 28, 2010, Complex analysis seminar, University of Ljubljana

Nov 4, 2010, Colloquium, Texas Tech University

Nov 6, 2010, special session “Interdisciplinary session on deterministic and stochastic Partial Differential Equations” at an AMS sectional meeting in Notre Dame, IN.

Mar 21–24, 2011, Universidad de Chile (mini-tutorial)

May 1, 2011, special session “PDEs modeling fluids” on the AMS meeting, Las Vegas, NV

May 1, 2011, special session “Recent developments in stochastic PDEs” on the AMS meeting, Las Vegas, NV

May 10, 2011, PDE seminar at the Mathematical Institute of Czech Academy of Sciences

June 14, 2011, International conference on PDEs modeling fluids and complex fluids (in honor of Peter Constantin’s 60th birthday)

Jun 20, 2011, Analysis seminar, Peking University

Oct 14, 2011, conference Incompressible fluids, turbulence, and mixing, Carnegie Mellon University

Oct 29, 2011, conference Mathematics of fluids, UC Riverside

Nov 15, 2011, minisymposium “Fluid structure and flow-structure interactions” at the SIAM conference on Analysis of PDEs, San Diego, CA

Nov 16, 2011, minisymposium “Analysis of PDEs arising in fluid dynamics” at the SIAM conference on Analysis of PDEs, San Diego, CA

Jan 26, 2012, PDE seminar, UC Irvine

Feb 3, 2012, Analysis seminar, UCLA

Feb 8, 2012, Mathematical physics seminar, Caltech

Feb 15, 2012, CAMP/Nonlinear PDEs seminar, University of Chicago

Feb 29, 2012, PDE seminar, Stanford University

### **Conferences co-organized (organizing committee):**

“Southwestern Workshop on Dynamical Systems, USC,” Nov. 17–19, 2000

“Mathematics of Fluids,” Los Angeles, CA, Mar 29–30, 2008

“International Conference on Partial Differential Equations Modeling Fluids and Complex Fluids” in Xian, China, June 13–17, 2010

SIAM conference on “Analysis of Partial Differential Equations”, San Diego, CA, Nov. 14–17, 2011

4 special sessions at AMS meetings, 2 special session at AIMS meetings, 1 SIAM mini-symposium

### **Service:**

Colloquium Chair, Aug. 1998–May 1999 Search Committee, Aug. 1997–May 2001, Aug. 2002–Jun. 2003 Search Com-

mittee Chair, Aug. 2000–May 2001  
Organizer and coorganizer of a Graduate Analysis/PDE Seminar, Aug. 1997–present  
Coorganizer of Dynamical Systems/Analysis Seminar, Aug. 1998–May 1999  
Member of Graduate Student Committees  
Coorganizer of the CAMS seminar/Colloquium, Fall 2008–present  
Merit Committee, Aug. 1998–May 2000, Aug. 2002–2004  
Grade Appeals Panel, Aug. 2001–May 2002  
Math 218 (Statistics for Business) Course Coordinator, Spring 2002 and Fall 2002  
Core Mathematics Graduate Advisor, Fall 2002 and Spring 2003  
Coorganization of Special Sessions and Conferences: special session "Mathematical Fluid Dynamics" on the Fourth International Conference on Dynamical Systems and Differential Equations, Wilmington, NC, USA, May 2002 mini-symposium "Asymptotic Analysis in Geophysical and hydrodynamical models" in the SIAM Conference on Applications of Dynamical Systems, Snowbird, UT, May 2003 special session "Partial Differential Equations" on the AMS sectional meeting at USC, April 2005 special session "Advances of PDEs in fluid dynamics" on the Fifth International Conference on Dynamical Systems and Differential Equations, Pomona, CA, USA, June 2005 special session "Nonlinear Partial Differential Equations and Applications" on the AMS sectional meeting at Urbana, IL, in March 27–29, 2009 special session "Nonlinear Partial Differential Equations" on the AMS sectional meeting at San Francisco, CA, April 25–26, 2009 special session "Applications of Nonlinear PDE" on the AMS sectional meeting at UCLA, October 9–10, 2010  
Graduate Vice-Chair, August 2005–December 2011  
USC Graduate Advisory Committee  
NSF reviewer and panelist

### **Journal and Proposal Reviews:**

Reviewed papers for Analysis and Applications, Applied Mathematics and Computation, Applied Mathematics Letters, Archive Rational Mech. Analysis, Communications in Partial Differential Equations, Communications in Mathematical Physics, Communications in Mathematical Sciences, Communications in Pure and Applied Analysis, Differential Equations and Nonlinear Mechanics, Discrete and Continuous Dynamical Systems, Discrete and Continuous Dynamical Systems B, Duke Math. J., Electronic Journal of Differential Equations, Indiana University Mathematics Journal, Journal of Applied Mathematics, Journal of Differential Equations, Journal of Dynamics and Differential Equations, The Journal of Geometric Analysis, JADEA, Journal of Applied Mathematics, Journal of Evolution Equations, Journal of Mathematical Analysis and Applications, Journal of Mathematics and Computers Simulation, Journal of Mathematical Physics, Journal of Nonlinear Analysis, Journal of Nonlinear Science, Journal of Physics A, Pacific Journal of Mathematics, Proceedings of Edinburgh Mathematical Society, Physica D, Proceedings of Edinburgh Mathematical Society, Pure and Applied Mathematics Quarterly, Math. Z., Mathematical Surveys and Monographs series, NODEA, Nonlinearity, Nonlinear Analysis Series A: Theory, Methods & Applications, SIAM Journal on Applied Mathematics, SIAM Journal for Mathematical Analysis, Transactions of AMS, proposals for COBASE, FONDECYT, NSF.