

Curriculum vitae

Last Name: MICU

First Names: SORIN DANIEL

Gender: M **Date of birth:** September 26, 1967

Citizenship: Romanian

EDUCATION

- Bachelor studies: Mathematics, University of Craiova (Romania), July 20, 1992
- PhD studies: Applied Mathematics, Universidad Complutense de Madrid, February 6, 1996
Title PhD Thesis: Análisis de un sistema bidimensional fluido-estructura; PhD Advisor: Enrique Zuazua Iriondo (Universidad Complutense de Madrid); Attested in Romania: 1999.
- PhD advisor since 2009.

PRESENT POSITION AT HOME INSTITUTION

University of Craiova, Faculty of Sciences

Position and date of beginning: Professor, October 1, 2005

Other Positions: Researcher at "Gheorghe Mihoc-Caius Iacob" Institute of Mathematical Statistics and Applied Mathematics of Romanian Academy, December 18, 2013

Address: Al. I. Cuza, 13, Craiova, 200585, Romania

Phone, fax: 0040-251-412673, E-mail: sd_micu@yahoo.com

Mobile phone: 0040-740401342

FORMER PROFESSIONAL POSITIONS

- Associated professor Universidad Carlos III de Madrid (Spain) 1/10/1994-30/09/1996
- Associated Professor Universidad Complutense de Madrid (Spain) 1/10/1996-30/09/2001
- Associated professor University of Craiova (Romania) since 1/10/1992

VISITING PROFESSOR POSITIONS

- Universidad de Chile, CMM, Santiago de Chile (Chile), 9/09-7/10/2002, 10/01-7/02/2009
- Universidad Autónoma de Madrid (Spain), 15/01-10/02/2005, 7/01-5/02/2004, 10/06-08/07/2004, 8/01-6/02/2003, 12/06-10/07/2003, 1/10/2006-28/02/2007
- Université Henri Poincaré, Nancy I (France), 04/06-04/07/2005
- Université Franche-Comté, Besançon (France), 1/09-31/10/2007

- Basque Center for Applied Mathematics, Bilbao (Spain), 25/10-23/11/2009
- Universidade Federal Rio de Janeiro (Brazil), 10/01-13/02/2010, 15/01-10/02/2011, 12/01-13/02/2013, 16/01/2015-14/02/2015, 12/01/2016-10/02/2016
- Université Paris 7 (France), 13/10/2010-13/11/2010
- Université Henri Poincaré, Nancy I (France), CNRS Poste Rouge 11/09-10/12/2011
- Université Paris 6 (France), 15/09/2014-15/10/2014
- Université de Lorraine, Nancy (France), 13/01/2017-11/02/2017
- Chair of Computational Mathematics, DeustoTech, Universidad Deusto, Bilbao (Spain), 11/01/2018-11/02/2018.

LIST OF PUBLICATIONS:

1. N. Cîdea, A. Matei, S. Micu, C. Nita: Boundary optimal control for antiplane contact problems with power-law friction, *Applied Mathematics and Computation*, 386 (2020), 125448. DOI: 10.1016/j.amc.2020.125448
2. S. Micu, I. Roventa, L. Temereanca: Approximation of the controls for the wave equation with a potential, *Numerische Mathematik* 144(4) (2020), 835-887. DOI: 10.1007/s00211-020-01106-2.
3. U. Biccari, S. Micu: Null-controllability properties of the wave equation with a second order memory term, *Journal of Differential Equations*, 267(2) (2019), 1376-1422. DOI: <https://doi.org/10.1016/j.jde.2019.02.009>
4. S. Micu, A. Pazoto: Stabilization of a Boussinesq system with localized damping, *Journal d'Analyse Mathématique*, 137(1) (2019), 291–337. DOI 10.1007/s11854-018-0074-3
5. A. Matei, S. Micu: Boundary Optimal Control for a Frictional Contact Problem with Normal Compliance, *Applied Math. Optim.*, 78(2) (2018), 379-401. DOI: <https://doi.org/10.1007/s00245-017-9410-8>
6. A. Matei, S. Micu, C. Nita: Optimal control for antiplane frictional contact problems involving nonlinearly elastic materials of Hencky type, *Mathematics and mechanics of Solids*, 23(3) (2018), 308-328. DOI: <https://doi.org/10.1177/1081286517718605>
7. S. Micu, T. Takahashi: Local controllability to stationary trajectories of a Burgers equation with nonlocal viscosity, *J. Diff. Eq.*, 264(5) (2018), 3664-3703. DOI: <https://doi.org/10.1016/j.jde.2017.11.029>
8. S. Micu, L. Temereanca: Estimates for the controls of the wave equation with a potential, *ESAIM: COCV*, 24(1) (2018), 289 - 309, DOI: <https://doi.org/10.1051/cocv/2017009>.
9. N. Cindea Nicolae, S. Micu, I. Roventa: Boundary controllability for finite-differences semi-discretizations of a clamped beam equation, *SIAM Journal on Control and Optimization* 55 (2) (2017), 785-817. DOI: <https://doi.org/10.1137/16M1076976>

10. S. Micu, A. Pazoto: Stabilization of a Boussinesq system with generalized damping, *Systems and Control Letters*, 105 (2017), 62-69. DOI: <https://doi.org/10.1016/j.sysconle.2017.04.012>
11. S. Micu, I. Roventa, L. Temereanca: Approximation of the controls for the linear beam equation, *Mathematics of Control, Signals, and Systems*, 28 (2) (2016), 1-53. DOI: 10.1007/s00498-016-0161-x
12. N. Cîndea, S. Micu, I. Rovența, M. Tucsnak: Particle supported control of a uid-particle system, *Journal de Mathematiques Pures et Appliques* 104 (2) (2015), 311-353. DOI 10.1016/j.matpur.2015.02.009
13. F. Bugariu, S. Micu, I. Roventa: Approximation of the controls for the beam equation with vanishing viscosity, *Mathematics of Computation*, 85 (301) (2016), 2257-2303. DOI 10.1090/mcom/3064
14. S. Micu, A. Pazoto: Almost periodic solutions for a weakly dissipated hybrid system, *Math. Control Relat. Fields* 4 (1) (2014), 101-113. DOI: 10.3934/mcrf.2014.4.101.
15. F. Bugariu, S. Micu: A numerical method for the controls of the heat equation, *Mathematical Modelling of Natural Phenomena*, 9 (4) (2014), 65-87.
16. F. Bugariu, S. Micu: A singular controllability problem with vanishing viscosity, *ESAIM Control Optim. Calc. Var.* 20 (2014), 116-140. DOI: 10.1051/cocv/2013057.
17. N. Cindea, S. Micu, J. Morais Pereira: Approximation of periodic solutions for a dissipative hyperbolic equation, *Numer. Math.*, 124 (2013), 559-601.
18. S. Micu, I. Roventa, M. Tucsnak: Time optimal boundary controls for the heat equation, *J. Funct. Anal.* 263 (1)(2012), 25–49.
19. N. Cîndea, S. Micu, A. F. Pazoto: Periodic solutions for a weakly dissipated hybrid system, *J. Math. Anal. Appl.* 385 (1)(2012), 399–413.
20. S. Micu, I. Rovența: Uniform controllability of the linear one dimensional Schrödinger equation with vanishing viscosity, *ESAIM Control Optim. Calc. Var.* 18 (1)(2012), 277–293.
21. S. Micu, J. Ortega, A. F. Pazoto: Null-controllability of a hyperbolic equation as singular limit of parabolic ones, *J. Fourier Anal. Appl.* 17 (2011), no. 5, 991–1007.
22. S. Micu, Sorin, E. Zuazua: Regularity issues for the null-controllability of the linear 1-d heat equation, *Systems Control Lett.* 60 (2011), no. 6, 406–413.
23. S. Micu, E. Zuazua: On the regularity of null-controls of the linear 1-d heat equation, *C. R. Math. Acad. Sci. Paris* 349 (2011), no. 11-12, 673–677.
24. N. Cîndea, S. Micu, M. Tucsnak: An approximation method for exact controls of vibrating systems, *SIAM J. Control Optim.* 49 (2011), no. 3, 1283–1305.

25. N. Cindea, S. Micu, I. Roventa, M. Tucsnak: Controllability of a nonlinear hybrid system, *Annals of the University of Craiova - Mathematics and Computer Science Series*, 38 (2011) 35-48.
26. A. Matei, S. Micu: Boundary optimal control for nonlinear antiplane problems, *Nonlinear Analysis-Theory Methods & Applications* 74 (2011), 1641-1652
27. F. Ammar-Khodja, S. Micu, A. Munch: Controllability of a string submitted to unilateral constraint, *Annales de l'Institut Henri Poincaré-Analyse Non Lineaire* 27(2010), 1097-1119.
28. S. Micu, L. de Teresa: A spectral study of the boundary controllability of the linear 2-D wave equation in a rectangle, *Asymptotic Analysis* 66 (2010), 139-160.
29. S. Micu, J. Ortega, L. Rosier: Control and stabilization of a family of Boussinesq systems, *Discrete and Continuous Dynamical Systems-A* 24(2009), 273-313
30. S. Micu, J. Ortega, A. Pazoto: On the controllability of a coupled system of two Korteweg-de Vries equations, *Communications in Contemporary Mathematics* 11 (2009), 799-827.
31. C. Castro, S. Micu, A. Munch: Numerical approximation of the boundary control of the 2-D wave equation with mixed finite element, *IMA Journal of Numerical Analysis* 28 (2008), 186-214.
32. S. Micu: Uniform boundary controllability of a semidiscrete 1-D wave equation with vanishing viscosity, *Siam Journal on Control and Optimization* 47(2008), 2857-2885.
33. S. Micu, E. Zuazua: On the controllability of a fractional order parabolic equation, *SIAM J. Control Optim.*, 44/6 (2006), 1950-1972.
34. C. Castro, S. Micu: Boundary controllability of a linear semi-discrete 1-D wave equation derived from a mixed finite element method, *Numer. Math.* 102/3 (2006), 413-462.
35. S. Micu, E. Zuazua: An introduction to the controllability of partial differential equations, *capitol în "Quelques questions de théorie du contrôle"*, Ed. Tewfik Sari, Collection Travaux en Cours, Editions Hermann 64 (2005), 69-157.
36. S. Micu, M. Tucsnak, Approximate controllability of a semi-discrete 1-D wave equation, *Proceedings of 7-Colloque franco-roumain*, *Annals of the Univ. of Craiova* 1 (2005), 48-58.
37. S. Micu, E. Zuazua: Null-controllability of the heat equation in unbounded domains, *capitol în Unsolved Problems in Mathematical Systems and Control Theory*, University Press, Princeton 2004, 163-168.
38. S. Micu, J. Ortega, L. de Teresa: ε -insensitizing controls for pointwise observation of the heat equation, *Systems & Control Letters*, 51(2004), 407-415.
39. S. Micu, J. Ortega, L. de Teresa: An example of ε -insensitizing controls for the heat equation with no intersecting observation and control regions, *Appl. Math. Letters*, 17/8 (2004), 927-932.

40. S. Micu: Uniform boundary controllability of a semi-discrete 1-D wave equation, *Numerische Mathematik*, 91(2002), 723-768.
41. S. Micu, E. Zuazua: On the lack of null-controllability of the heat equation on the half-space, *Portugaliae Math.*, 58 (2001), 1-24.
42. S. Jaffard, S. Micu: Estimates of the constants in generalized Ingham's inequality and applications to the control of the wave equation, *Asymptotic Analysis*, 28 (2001), 181-214.
43. S. Micu: On the controllability of the linearized Benjamin-Bona-Mahony equation, *SIAM J. Cont. Optim*, 39 (2001), 1677-1696.
44. S. Micu, J. Ortega, A. Bermudez ed.: On the controllability of a linear coupled system of Korteweg-de Vries equations, *Fifth International Conference on Mathematical and Numerical Aspects of Wave Propagation 2000*, 1020-1024.
45. S. Micu, E. Zuazua: On the lack of null-controllability of the heat equation on the half-line, *Trans. AMS* 353 (2000), 1635-1659.
46. S. Micu: Periodic solutions for a bidimensional hybrid system arising in the control of noise, *Advances in Differential Equations* 4 (1999), 529-560.
47. B. Allibert, S. Micu: Controllability of analytic functions for a wave equation coupled with a beam, *Revista Matematica Iberoamericana*, 15 (1999), 547-592.
48. S. Micu: Analysis of a Hybrid System for Noise Reduction, *Smart Structures, Proceedings of SMART-98 NATO Advanced Research Workshop: "Smart Structures Requirements and potential applications in mechanical and civil engineering"*, Pultusk (Polonia), Kluwer Academic Publishers, 1999, 211-220.
49. S. Micu: Stabilization of a hybrid system for noise reduction, *ESAIM Proceedings*, Vol. 4, 1998, *Contôle et Équations aux Dérivées Partielles*, 235-253.
50. S. Micu, E. Zuazua: Boundary controllability of a linear hybrid system arising in the control of noise, *SIAM J. Con. Optim.* 35 (1997), 1614-1637.
51. S. Micu, E. Zuazua: Asymptotics for the spectrum of a fluid/structure hybrid system arising in the control of noise, *SIAM J. Math. Anal.* 29 (1998), 967-1001.
52. S. Micu, E. Zuazua, E. Casas: Stabilization and periodic solutions of a hybrid system arising in the control of noise, *Control of Partial Differential Equations and Applications Volume: 174*, 1996, 219-230.
53. S. Micu, E. Zuazua: Qualitative properties of a 2dimensional hybrid system arising in the control of noise, *Comptes Rendus De L'Academie Des Sciences Serie I-Mathematique* 319 (1994), 1263-1268.

INVITED TALKS AT INTERNATIONAL CONFERENCES OR AT FOREIGN UNIVERSITIES:

- *On the controllability of the wave equation with a second order memory term*, Thematic session on "Nonlocal PDE and control", VIII Partial differential equations, optimal design and numeric, August 21, 2019, Benasque, Spain.
- *Controllability of the wave equation with memory term*, Minisymposium Control of Partial Differential Equations, May 23, 2019, International Conference on Elliptic and Parabolic Problems, 20.05.2019-24.05.2019, Gaeta, Italy.
- VII Partial differential equations, optimal design and numeric, August 20 - September 1, 2017, Benasque, Spain.
- *Exact controllability and approximation*, Session dedicated to the 150th anniversary of the Romanian Academy, April 5, 2016, Romanian Academy, Bucharest.
- *Approximation of the controls for the beam equation*, Plenary lecture. 24th Conference on Applied and Industrial Mathematics - CAIM 2016, Craiova, Romania, Septembrie 15-18, 2016.
- *Approximation of the exact control for the beam equation*", Invited talk International Workshop "From Open to Closed Loop Control" Mariatrost Graz Austria, June 22-26, 2015.
- *Stabilization of a system of dispersive equations modelling water waves*, Invited talk 6-th Workshop Partial differential equations, optimal design and numerics, Benasque, Spain, August 23 – September 5, 2015.
- *Time optimal boundary controls for the heat equation*, Invited talk at Workshop New trends in modeling, control and inverse problems, Institut de Mathematiques de Toulouse, June 16 - 19, 2014.
- *Approximation of periodic solutions for a dissipative hyperbolic equation*", Invited talk at Conference Control of PDEs at CNAM, Paris, France, March 31 – April 4, 2014.
- *Approximation of the controls for the beam equation*, 5-th Workshop Partial differential equations, optimal design and numerics, Benasque, Spain, August 25-September 5, 2013.
- *Time optimal boundary controls for the heat equation*, 9th AIMS Conference on Dynamical Systems, Differential Equations and Applications, Orlando USA, July 1-5, 2012. Special Session Nonlinear PDEs and Control Theory.
- *Uniform boundary controllability of the 1-d Schrödinger equation with vanishing viscosity*, invited talk at Universidade Federal Rio de Janeiro (Brazil), February, 2011.
- *On the controllability of the Schrödinger equation with vanishing viscosity*, Workshop "Controlé d'equations dispersives", Intitut Henri Poincaré, Paris, November 2010.

- *Null-controllability of a string with a boundary obstacle*, invited talk at IMPA, Rio de Janeiro (Brazil), January 2010.
- *Controllability of a wave equation with a boundary obstacle*, invited talk at Basque Center for Applied Mathematics, Bilbao (Spain), October 2009.
- *Numerical Approximation of the Boundary Control of the Wave Equation*, Workshop on Partial Differential Equations, Rio de Janeiro (Brazil), September 2008.
- *Uniform Boundary Controllability of the Semi-discrete 1-D Wave Equation with a Vanishing Viscous Term*, invited talk at Université Franche-Comté, Besancon (France), September 2007.
- *On the Approximation of the Boundary Control of the Wave Equation with Numerical Viscosity*, European Control Conference 2007, Kos (Grece), July 2007.
- *On the controllability of some dispersive equations*, International Workshop on Numerical Analysis and Control of Fluid-Structure Interactions ANCIF, Chillian (Chile), December 2005.
- *On the controllability of the semi-discrete 1-D wave equation with numerical viscosity*, invited talk at Universidad Complutense de Madrid, February 2004.
- *Uniform boundary controllability of a semi-discrete wave equation*, First EMS-SMAI-SMF Joint Conference - Applied. Mathematics and Applications of Mathematics, Nice (France), February 2003.
- *Aplicaciones de la teoria Fourier en control*, XVII Congreso de Ecuaciones Diferenciales y Aplicaciones, Salamanca (Spain), September 2001.

MEMBERSHIP IN EDITORIAL COMMITTEES OF JOURNALS AND COLLECTIONS

PUBLISHED ABROAD:

- Acta Applicandae Mathematicae, ISSN: 0167-8019, International ISI Journal
<http://www.springer.com/mathematics/journal/10440>
- Mathematical Control and Related Fields (MCRF), ISSN 2156-8472
<http://aimsciences.org/journals/home.jsp?journalID=23>

OTHER ELEMENTS OF RECOGNITION OF THE SCIENTIFIC ACTIVITY:

- Lecturer of the Mini-Course (4 lectures): *Moment problems, biorthogonals and applications to control theory*, January 19-30, 2018 at the Chair of Computational Mathematics, University of Deusto, Bilbao, Spain.
<https://cmc.deusto.eus/moment-problems-biorthogonals-and-applications-to-control-theory/>
- Invited lecturer in the master and doctoral programs of Universidad Carlos III de Madrid

(1997), Universidad Complutense de Madrid (1999-2000), Universidad Nacional Autónoma Ciudad de Mexico (2006), Universitatea din Pitești (2001-2002).

- Coordinator in two international projects: *Probleme de controlabilitate a ecuatiilor cu derivate partiale* (Controllability problems for partial differential equations) 206/2009 partially funded by ANCS (Romania), Bilateral Project Romania-France, 2009-2010 and *Analiza si controlul unor ecuatii cu derivate partiale de evolutie* (Analysis and control of some partial differential equations of evolution) 17/2003, Integrated Action Romania-France in the framework of Brancusi-Egide Program, 2003-2004.
- Member in international projects: *Análisis, Control, Numérico y Aplicaciones* MTM2011-29306, leaded by Enrique Zauzua, Basque Center for Applied Mathematics, Bilbao, Spain (2011-2014).
- Organizer, in collaboration with Carlos Castro (Universidad Politécnica de Madrid, Spain) of the Thematic session on "Control approximation" on August 29, in VII Partial differential equations, optimal design and numeric, August 20 - September 1, 2017, Benasque, Spain.

Craiova, July 13, 2012

Sorin Daniel Micu