

CURRICULUM VITAE

Contact information

Institute for Collaborative Biotechnologies and
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Education

Ph.D. (2001), Physics, University of Manitoba, Winnipeg, Canada
Dissertation: “*Nonlinear Phenomena and Chaos in Periodically Driven Classical Systems*”, advisor Dr. Randy Kobes (GPA 4.2/4.5)

B.Sc. (1993), Physics, University of Sarajevo, Bosnia and Herzegovina (GPA 9.4/10)

Employment

- 2006-present: Postdoctoral Fellow, University of California Santa Barbara
- 2001-2005: Postdoctoral Fellow, Georgia Institute of Technology
- 1996-2001: Graduate student/teaching assistant, University of Manitoba
- 1994-1996: Information Technology Trainer, United Nations Civilian Police Training Unit.

Awards

- 2006: NRC Postdoctoral Award, A-rated proposal (not pursued)
- 2001-2003: Joseph Ford Postdoctoral Fellowship, Georgia Institute of Technology
- 2001: Travel grant, University of Manitoba
- 1999-2000: University of Manitoba Graduate Fellowship, Winnipeg, Manitoba

Refereed Publications

- B. Munsky, S. Peles and M. Khammash, “Stochastic analysis of gene regulatory networks using Finite State Projection and singular perturbation”, to appear in *Proceedings of American Control Conference*, New York 2007.
- S. Peles, B. Munsky and M. Khammash, “Reduction and solution of the chemical master equation using time-scale separation and Finite State Projection”, *Journal of Chemical Physics* 125 (20), p. 204104 (2006).

- S. Peles, J. L. Rogers and K. Wiesenfeld, "Robust Synchronization in fiber laser arrays", *Physical Review E* 73 026212 (2006).
- S. Peles, J. L. Rogers and K. Wiesenfeld, "Synchronization in fiber laser arrays: theoretical study" Proceedings of SPIE, Vol. 5971, 59710R (2005).
- J. L. Rogers S. Peles and K. Wiesenfeld, "Dynamics of high gain fiber laser arrays", *IEEE Journal of Quantum Electronics* 41 (6), pp. 767-773 (2005).
- Q. Wu, P. Sekhavat, N. Sepehri and S. Peles, "On Design of Continuous Lyapunov's Feedback Control", *Journal of the Franklin Institute* 342 (6), pp. 702-723 (2005).
- K. Josic and S. Peles, "Synchronization in networks of general, weakly nonlinear oscillators" *Journal of Physics A* 39, pp. 11801-11817 (2004).
- S. Peles and K. Wiesenfeld, "Synchronization law for a Van der Pol array", *Phys. Rev. E* 68, No. 2, 026220 (2003).
- R. Kobes, J. Liu and S. Peles, "Analysis of a Parametrically Driven Pendulum", *Phys. Rev. E* 63, 036219 (2001).
- Q. Wu, P. Sekhavat, S. Peles, R. F. Abo-Shanab, and N. Sepehri, "An Improved Design Procedure of Lyapunov Feedback Control", Proceedings of 2001 IEEE International Symposium on Computational Intelligence in Robotics and Automation (CIRA), 486-491 (2001).
- S. Peles, "Analysis of a Periodically Driven Mechanical System", *Prog. The. Phys. Sup.* 139, pp. 496-506 (2000).

Talks & Conferences

- 4-7 January 2006: Dynamics Days, "Synchrony in fiber laser structures with time dependant gain fields", poster presentation, Bethesda, MD
- 22-26 May 2005: SIAM Conference on Applications of Dynamical Systems. "Dynamics of Fiber Laser Arrays", Snowbird, UT
- 4 November 2004: Physics Colloquium, "Synchrony in weakly nonlinear systems", University of Lethbridge, Lethbridge, AB Canada
- 13-16 June 2004: C.A.P. Annual Congress, "A theoretical model of synchrony for coupled fiber lasers", Winnipeg, MB Canada
- 21-26 March 2004: APS March Meeting, "A normal form analysis of networks of weakly nonlinear oscillators", Montreal, PQ Canada
- 2-5 January 2004: Dynamics Days, "Synchronization of an array of quasi-harmonic oscillators", poster presentation, Chapel Hill, NC
- 13 May 2003: Nonlinear Dynamics and Neuroscience Seminar, "Synchronization of globally coupled limit cycle oscillators", University of Houston, Houston, TX
- 31 May-5 June 2002: C.A.P. Annual Congress, "Synchronization of an Array of Van der Pol Oscillators", Quebec City, PQ Canada
- 25 March 2002: Physics Seminar, "Symbolic Analysis of Chaotic Systems", University of Manitoba, Winnipeg, MB, Canada
- 17-20 June 2001: C.A.P. Annual Congress, "Control Analysis of a Double Pendulum System", University of Victoria, Victoria, BC, Canada
- 8 March 2001: CNS Seminar "Chaos in a Periodically Driven System" at Georgia Institute of Technology, Atlanta, GA.

- 27 June - 11 July 1999: 4th International Summer School/Conference, “Analysis of chaos in periodically driven mechanical system”, poster presentation, University of Maribor, Slovenia.

Teaching

- 2005: Lecturer, Introduction to Physics I (Mechanics, PHYS 2211) and Introduction to Modern Physics (Waves, Special Relativity, Quantum Theory, PHYS 2213), Georgia Institute of Technology
- 2003: Guest lecturer, Statistical mechanics II (Postgraduate level), Georgia Institute of Technology
- 2001: Guest lecturer, Mathematical Methods in Physics (Postgraduate level), Georgia Institute of Technology
- 1999-2001 : Teaching assistant, Advanced Electronics lab, University of Manitoba
- 1996-2000 : Teaching assistant, 1st year physics labs (Mechanics, Wave Mechanics, Electricity and Magnetism), University of Manitoba
- 1996 : Computer Instructor, United Nations Civilian Police Training Center

Mentoring

- 2004-2005: Udbhav Sharma, undergraduate student, “Structural nonlinearities in an airfoil”, undergraduate research project, co-mentor with Mason Porter
- 2004-2005: Jennifer Rieser, undergraduate student, “Transient amplification and contact line instability”, undergraduate research project, co-mentor with Mason Porter and Michael Schatz
- 2002-2003 : Jason Penner, M.Sc. student, “Cycle expansion for a parametrically driven pendulum”, co-mentor with Randy Kobes, University of Winnipeg
- 2003: Jorge Millan, graduate student, “Driven pendulum vs. circle map: symbolic analysis”, course project, Georgia Institute of Technology
- 2003: Lina Mechrán, graduate student “Calculation of diffusion coefficient in a double well potential”, course project, Georgia Institute of Technology

Reviewer for: Science, Journal of Physics A, Physica D, Semiconductor Science and Technology and Nonlinearity

Related experience

- 2002-03: Organizer of CNS Meetings, a series of informal seminars, Center for Nonlinear Sciences, Georgia Tech
- 1998-2001: Participant in "Let's talk Science" program, giving presentations at schools and science fairs
- 2001-02: Student representative at Department of Physics and Astronomy Council
- 2001-02: Physics representative at Graduate Student Association
- 1992-94: Radio producer for scientific and educational program, Independent Radio “Studio 99”, Sarajevo, Bosnia and Herzegovina.

References

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Dr. Igor Mezic, Center for Control, Dynamical Systems and Computation and Department of Mechanical Engineering, University of California, Santa Barbara, CA 93106-5070, Phone: (805) 893-7603, E-mail: mezic@engineering.ucsb.edu

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Dr. Randy Kobes, Department of Physics, University of Winnipeg, Winnipeg, MB R3B 2E9, Canada, Phone: (204) 786-9882, E-mail: randy@theory.uwinnipeg.ca

Dr. Kresimir Josic, Department of Mathematics, University of Houston, Houston, TX 77204, Phone: (713) 743-3485, E-mail: josic@math.uh.edu