

CURRICULUM VITAE
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Tenured Associate Professor

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Permanent Residency: USA (Green Card) and Germany

ACADEMICAL EDUCATION

- 1995 – 2000 Ph.D in Applied Mathematics, Technion-Israel Institute of Technology.
- 1991 – 1995 Master's degree in Physics, Technion-Israel Institute of Technology.
- 1991 – 1995 Bachelor's degree in Applied Mathematics (Summa Cum Laude)
Technion-Israel Institute of Technology.
- 1987 – 1991 Bachelor's degree in Physics, Technion-Israel Institute of Technology.

PROFESSIONAL EXPERIENCE

- 01/2011 – 06/2011 Visiting Scientist, Department of Applied Mathematics, Columbia University, New York.
- 2009 – present Associate Professor (tenured), Department of Mathematics, Florida State University, Florida.
- 2005 – 2009 Assistant Professor, Department of Mathematics, Florida State University.
- 2003 – 2005 Assistant Professor, Department of Mathematics, University of Central Florida.
- 2000 – 2003 Postdoctoral Research Associate, Department of Applied Mathematics, University of Colorado at Boulder, Colorado.

SHORT TERM VISITS

- Department of Mathematics, University of Toronto.
- Department of Theoretical Physics, Technical University of Vienna.
- Department of Physics, Israel Institute of Technology.

HONORS AND AWARDS

2000 – 2001	Rothschild Fellowship, Rothschild Foundation.
1999 – 2000	Eshkol Fellowship, Israeli Ministry of Science.
1997 – 1998	Prize for Excellence in Teaching in Applied Mathematics, Technion.
1993 – 1994	Technion President Award, top 1% of the undergraduate students.

RESEARCH INTERESTS

- Applied and Computational Mathematics.
- Wave Propagation in Parity-Time (PT) Linear and Nonlinear Optical Media.
- Bose-Einstein Condensation in Random Potential.
- Soft Matter Physics.

CONTRACTS AND GRANTS

- Wave propagation in linear and nonlinear parity-time (PT) optical media, National Science Foundation, Division of Mathematical Sciences, PI, (2009 – 2012). Total award: \$195,250.
- SCREMS: high performance computing and visualization, Funded by National Science Foundation, co-PI, (07/2007 – 06/2008). Total award: \$114,678.
- Wave Propagation in Nonlinear Photonic Structures, Funded by CRC First Year Assistant Professor Awards, Florida State University, PI (05/2006 – 08/2006). Total award: \$15,000.

GRADUATE STUDENTS

Blais Rafael Mondal (Ms.c, 2012)

Justin Cole (PhD, expected 2015)

INVITED TALKS

Solitons in PT Symmetric Potentials,
Institute for Theoretical Physics, University of Heidelberg, Germany 2011.

Nonlinear Waves with Broken Time-Reversal Symmetry,
Mathematics Colloquium, University of Central Florida, Orlando, FL 2011.

Introduction to Solitons in Optics and Fluid Mechanics,
Theoretical Physics Colloquium, Vienna University of Technology, Vienna, Austria 2011.

PT Symmetry in Nonlinear Optics, Max-Planck Institute for Physics of Complex Systems,
Dresden, Germany, 2011.

Stability and formation of nonlinear coherent structures in the PT invariant nonlinear Schrodinger equation, The Seventh IMACS International Conference on Nonlinear Evolution Equations and Wave Phenomena: Computation and Theory, University of Georgia, USA 2011.

Numerical study of one-dimensional Bose-Einstein condensates in a random potential,
PDE/Applied Mathematics Seminar, University of Toronto 2011.

Numerical study of one-dimensional Bose-Einstein condensates in a random potential,
PDE/Applied Mathematics Seminar, McMaster University 2011.

On the problem of Anderson localization for the one-dimensional nonlinear Schrodinger equation with a random potential, PDE Seminar, Columbia University 2011.

Wave Propagation in Honeycomb Lattices, Nonlinear Waves Seminar Columbia University 2011.

The PT invariant nonlinear Schrödinger equation and its application in optics,
Frontiers in Nonlinear Waves, in honor of Vladimir Zakharov's 70th birthday
University of Arizona, Tucson (2010).

The PT invariant nonlinear Schrödinger equation and its application in optics,
Physics of Complex Systems Seminar, Weizmann Institute of Science, Israel (2010).

The *PT* invariant nonlinear Schrödinger equation and its application in optics
PDE and Applied Mathematics Seminar, Technion-Israel Institute of Technology (2010).

On the problem of Anderson localization for the random nonlinear Schroedinger equation,
Applied and Computational Mathematics, Florida State University, 2010.

Wave Propagation in Parity-Time (PT) Symmetric Media
Mathematics Colloquium, Florida State University, Florida, USA (2008).

Bose-Einstein Condensation in Random Potentials
The Fifth IMACS International Conference on Nonlinear Evolution Equations and Wave Phenomena: Computation and Theory, University of Georgia, Athens, Georgia, USA (2007).

Bose-Einstein Condensation in Random Potentials

SIAM Nonlinear Waves and Coherent Structures, University of Washington, Seattle, Washington, USA (2006).

Computational method for numerical solution of nonlinear boundary value problems,
International Conference on Nonlinear Waves, Integrable Systems and Applications,
University of Colorado at Colorado Springs, USA (2005).

Numerical Methods for Nonlinear Boundary Value Problems

Department of Mathematics, Weizmann Institute of Sciences, Rehovot, Israel (2005).

Multiscale Asymptotic Analysis of Wave Propagating in Nonlinear Periodic Media

Department of Applied Mathematics, Northwestern University, Evanstone, USA (2005).

Localized Structures in two-dimensional Photonic Lattices

SIAM Conference on Applications of Dynamical Systems, Snowbird, Utah, USA (2005).

Multiscale Asymptotic Analysis of Wave Propagating in Nonlinear Periodic Media

The Second Israeli Mini-Workshop in Applied and Computational Mathematics, Bar - Ilan University, Israel (2004).

Localized Structures in Two-Dimensional Optical Lattices

First SIAM Nonlinear Waves and Coherent Structures, Orlando, Florida, USA (2004).

Localization of Bose-Einstein Condensate in a Two-Dimensional Optical Lattice

AMS Regional Meeting on Modelling and Simulation of Complex Fluid Systems, Tallahassee, Florida, USA (2004).

Multiscale Asymptotic Analysis of Wave Propagating in Nonlinear Periodic Media Department of Mathematics, University of California at Irvine, USA (2004).

The vector nonlinear Schrödinger equations

Workshop on Emerging Applications of the Nonlinear Schrödinger Equations, IPAM UCLA, Los Angeles, USA (2003).

Vortices in Two-Dimensional Bose-Einstein Condensation

AMS Regional Meeting, Boulder, CO, USA (2003).

Wave Propagation in Continuous and Discrete Media

Department of Mathematics, Florida State University, Tallahassee, Florida, USA (2003).

Self-Trapping of Light in a Diffraction Managed Waveguide Array

Workshop on Intrinsic Localized Modes, Los-Alamos National Laboratory, Los Alamos, New Mexico, USA (2002).

Discrete Diffraction Managed Spatial Solitons

Department of Mathematics, Colorado State University, Fort Collins, CO, USA (2002).

Discrete Optical Spatial Solitons, Department of Mathematics

Massachusetts Institute of Technology, Cambridge, Massachusetts, USA (2002).

Numerical Methods for Discrete Solitons

Department of Mathematics, University of California at Irvine, California, USA (2002).

Continuous and Discrete Nonlinear Schrödinger Equation

Department of Mathematics, Rutgers University, New Jersey, USA (2002).

Discrete Solitons

Third IMACS International Conference on Nonlinear Evolution Equation, University of Georgia, Athens, Georgia, USA (2001).

Composite Solitons Carrying Topological Charges

14th Workshop on Nonlinear Evolution Equations and Dynamical Systems, Turkey (2000).

Suppression of transverse instabilities for vector solitons

Workshop on Topological Defects in Non-Equilibrium Systems and Condensed Matter, Max-Planck-Institute for Physics of Complex Systems, Dresden, Germany (2000).

MEMBERSHIP IN PROFESSIONAL ORGANIZATIONS

- SIAM (Society for Industrial and Applied Mathematics).
- OSA (Optical Society of America).

TEACHING ACTIVITIES

Florida State University

Wave Propagation MAP 5513 (Spring 2012).

Elementary Partial Differential Equations I, MAP 4341 (Spring 2012).

Methods of Applied Mathematics I, MAP 5165 (Fall 2011).

Ordinary Differential Equations, MAP 2302 (Fall 2011).

Seminar on Nonlinear Waves, MAP 6939 (Fall 2011).

Student PHD Candidacy Preparation, MAT 6908, (Spring 2011).

PRELIM DOCTORAL EXAM, MAT 6980, (Spring 2011).

Doctoral Student Dissertation, MAT 8964, (Spring 2011).

Calculus I, MAC 2311 (Fall 2010).

Ordinary Differential Equations, MAP 2302 (Fall 2010).

Seminar on Applied and Computational Mathematics, MAP6939 (Fall 2010)

Calculus I, MAC 2311 (Fall 2009).

NUMERICAL ANALYSIS I, MAD 3703 (Fall 2009).

Methods of Applied Mathematics I, MAP 5165 (Fall 2009).

Calculus III, MAC 2313 (Spring 2009).

Mathematical Modeling, MAT6908 (Spring 2009).

Ordinary Differential Equations, MAP 2302 (Fall 2008).

Engineering Mathematics I, MAP 3305 (Fall 2008).

Honor Calculus II, MAC 2312H (Fall 2008).

Ordinary Differential Equations, MAP 2302 (Spring 2008).

Engineering Mathematics I, MAP 3305 (Spring 2008).

Calculus III, MAC 2313 (Fall 2007).

Methods of Applied Mathematics I, MAP 5165 (Fall 2007).

Engineering Mathematics II, MAP 3306 (Spring 2007).

Mathematical Modelling, MAP 5107 (Spring 2007).

Mathematical Modelling, MAT 4906 (Spring 2007).

Methods of Applied Mathematics I, MAP 5165 (Fall 2006).

Vector Calculus with Tensors, MAP 4153 (Spring 2006).

Applied Mathematics Seminar: Complex Fluids, MAP 6939 (Spring 2006).

Calculus III, MAC 2313 (Fall 2005).

University of Central Florida

Special Functions, MAP 5426 (Summer 2005).

Elementary Linear and Matrix Algebra, MAS 3105 (Summer 2005).

Honor Calculus III, MAC 2313H (Spring 2005).

Applied Numerical Mathematics, MAP 5385 (Spring 2005).

Honor Calculus II, MAC 2312H (Fall 2004).

Honor Calculus II, MAC 2312H (Spring 2004).

Applied Boundary Value Problems II, MAP 4364 (Spring 2004).

Honor Calculus I, MAC 2311H (Fall 2003).

Applied Boundary Value Problems I, MAP 4363 (Fall 2003).

University of Colorado at Boulder

Calculus III for Engineers, APPM 2350.

Ordinary Differential Equations with Linear Algebra, APPM 2360.
Complex Variables and Applications, APPM 4360.

PROFESSIONAL SERVICE

- Member of Doctoral Dissertation Supervisory Committees.
- Member of Master's Thesis Supervisory Committees.
- Committee Member, Doctoral Preliminary Examination Committee.
- Committee Member, Graduation Committee.
- Applied Mathematics Seminar, University of Colorado at Boulder.
- Nonlinear Waves Seminar, University of Central Florida.
- The Eight International Conference On Integral Methods In Science and Engineering IMSE, University of Central Florida.
- Applied/Complex Fluid Seminar, Florida State University.
- Wave Propagation in Nonlinear Discrete and Periodic Structures, SIAM Nonlinear Waves and Coherent Structures, University of Washington, Seattle.
- Reviewer for Refereed Journals:
Physica D.
Discrete and Continuing Dynamical Systems B.
Journal of Physica A: Mathematical and Theoretical.
Nonlinearity.
Optics Letters.
Journal of the optical society of America B.
- Reviewer for Grant Applications
National Science Foundation.
Israel Science Foundation.
US – Israel Binational Science Foundation

Publications in Refereed Journals

40. Z. H. Musslimani, K. G. Makris, and D. N. Christodoulides, Modulation Instability in PT Symmetric Potentials (to be submitted to Physical Review Letters, 2012).

39. K. G. Makris, R. El Ganainy, D. N. Christodoulides, and Ziad H. Musslimani , [PT symmetric periodic optical potentials](#), Int. J. Theor. Phys. **50**, 1019, 2011.

38. K. G. Makris, R. El Ganainy, D. N. Christodoulides, and Ziad H. Musslimani, [PT symmetric optical lattices](#),

Phys. Rev. A **81**, 063807, 2010.

37. Yanping Cao, Ziad H. Musslimani, and Edriss S. Titi, [Modulation theory for self-focusing in the nonlinear Schrödinger-Helmholtz equation](#), Numerical Functional Analysis and Optimization **30**, 46-69, (2009).
36. Ziad H. Musslimani, K. G. Makris, R. El Ganainy, and D. N. Christodoulides, [Analytical solutions to a class of nonlinear Schrödinger equations with PT-like potentials](#), J. Phys. A: Math. Theor. **41**, 244019 (2008).
35. Yanping Cao, Ziad H. Musslimani, and Edriss S. Titi, [Nonlinear Schrödinger-Helmholtz equation as numerical regularization of the nonlinear Schrödinger equation](#), Nonlinearity **21**, 879 (2008).
34. K. G. Makris, R. El Ganainy, D. N. Christodoulides, and Ziad H. Musslimani, [Beam dynamics in PT symmetric optical lattices](#), Phys. Rev. Lett. **100**, 103904 (2008).
33. Eric Akkermans, Sankalpa Ghosh and Ziad H Musslimani, [Numerical study of one-dimensional and interacting Bose-Einstein condensates in a random potential](#), J. Phys. B **41**, 045302 (2008).
32. Ziad H. Musslimani, K. G. Makris, R. El Ganainy, and D. N. Christodoulides, [Optical solitons in PT periodic potentials](#), Phys. Rev. Lett. **100**, 030402 (2008).
31. R. El-Ganainy, D. N. Christodoulides, Ziad H. Musslimani, C. Rotschild, and M. Segev, [Optical beam instabilities in nonlinear nanosuspensions](#), Optics Letters, **32**, 3185 (2007).
30. R. El-Ganainy, K. G. Makris, D. N. Christodoulides, and Ziad H. Musslimani, [Theory of coupled optical PT symmetric structures](#), Optics Letters, **32**, 2632 (2007).
29. M.J. Ablowitz, A.S. Fokas and Z.H. Musslimani, [On a New Nonlocal Formulation of Water Waves](#), J. Fluid Mechanics, **562**, 313 (2006).
28. Mark J. Ablowitz, K. Julien, Ziad H. Musslimani and M. I. Weinstein, [Wave dynamics in optically modulated waveguide arrays](#), Phys. Rev. E, Rapid Communications, **71**, 055602 (2005).
27. Mark J. Ablowitz and Ziad H. Musslimani, [Spectral renormalization method for computing self-localized solutions to nonlinear systems](#), Optics Letters, **30**, 2140 (2005).
26. Ziad H. Musslimani and Jianke Yang, [Self-trapping of light in a two-dimensional photonic lattice](#), Journal of the Optical Society of America B, **21**, 973 (2004).
25. H. Buljan, O. Cohen, J. W. Fleischer, T. Schwartz, M. Segev, Z. H. Musslimani, N. K. Efremidis, and D. N. Christodoulides, [Random-Phase Solitons in Nonlinear Periodic Lattices](#), Phys. Rev. Lett. **92**, 223901 (2004).
24. P.G. Kevrekidis, B.A. Malomed, and Ziad H. Musslimani, [Discrete gap solitons in a diffraction-managed waveguide array](#), Eur. Phys. Jour. D **23**, 421 (2003).
23. Jianke Yang and Ziad H. Musslimani, [Fundamental and vortex solitons in a two-dimensional optical lattice](#), Opt. Lett. **28**, 2094 (2003).

22. Mark J. Ablowitz and Ziad H. Musslimani, [Dark and gray strong dispersion-managed solitons](#), Phys. Rev. E Rapid Communication **67**, 025601 (2003).
21. Mark J. Ablowitz and Ziad H. Musslimani, [Discrete spatial solitons in a diffraction-managed nonlinear waveguide array: a unified approach](#), Physica D **184**, 276 (2003).
20. Mark J. Ablowitz and Ziad H. Musslimani, [Discrete vector spatial solitons in a nonlinear waveguide array](#), Phys. Rev. E. **65**, 056618 (2002).
19. Mark J. Ablowitz, Ziad H. Musslimani and G. Biondini, [Methods For Discrete Solitons in Nonlinear Lattices](#), Phys. Rev. E **65**, 026602 (2002).
18. Mark J. Ablowitz and Ziad H. Musslimani, [Discrete Diffraction Managed Spatial Solitons](#), Phys. Rev. Lett. **87**, 254102 (2001).
17. Ziad H. Musslimani and Jianke Yang, [Transverse instability of strongly coupled dark-bright Manakov vector solitons](#), Opt. Lett. **26**, 1981 (2001).
16. T. Carmon, R. Uzdin, C. Pigier, Ziad H. Musslimani, M. Segev, and A. Nepomnyashchy, [Rotating Propeller Solitons](#), Phys. Rev. Lett. **87**, 143901 (2001).
15. C. Pigier, R. Uzdin, T. Carmon, M. Segev, A. Nepomnyashchy and Ziad H. Musslimani, [Collisions between \$\(2 + 1\)D\$ rotating propeller solitons](#), Opt. Lett. **26**, 1577 (2001).
14. Ziad H. Musslimani, Marin Soljacic, Mordechai Segev, and Demetrios N. Christodoulides, [Interactions between two-dimensional composite vector solitons carrying topological charges](#), Phys. Rev. E. **63**, 066608 (2001).
13. Ziad H. Musslimani, Marin Soljacic, Mordechai Segev, and Demetrios N. Christodoulides, [Delayed-Action Interaction and Spin-Orbit Coupling between Solitons](#), Phys. Rev. Lett. **86**, 799 (2001).
12. C. Anastassiou, M. Soljacic, M. Segev, E. D. Eugenieva, D. N. Christodoulides, D. Kip, Ziad H. Musslimani, and Juan P. Torres, [Eliminating the Transverse Instabilities of Kerr Solitons](#), Phys. Rev. Lett. **85**, 4888 (2000).
11. Ziad H. Musslimani, M. Segev, D. N. Christodoulides and Marin Soljacic, [Composite Multi Hump Vector Solitons Carrying Topological Charge](#), Phys. Rev. Lett. **84**, 1164 (2000).
10. Ziad H. Musslimani, Mordechai Segev, and Demetrios N. Christodoulides, [Multi-component two-dimensional solitons carrying topological charge](#), Opt. Lett. **25**, 61 (2000).
9. T. Carmon, C. Anastassiou, S. Lan, D. Kip, Ziad H. Musslimani, M. Segev, and D. N. Christodoulides, [Observation of Two-Dimensional Multimode Solitons](#), Opt. Lett. **25**, 1113 (2000).
8. Ziad H. Musslimani and Len M. Pismen, [Dynamic quasicrystalline patterns: Wave-mode-Turing-mode resonance with Turing-mode self-interaction](#), Phys. Rev. E **62**, 389 (2000).

7. Ziad H. Musslimani, Mordechai Segev, Alexander Nepomnyachshy and Yuri S. Kivshar, [Suppression of transverse instabilities for vector solitons](#), Phys. Rev. E **60**, R1170 (1999).
6. Ziad H. Musslimani and Len M. Pismen, [Resonant optical patterns in sodium vapor in a magnetic field](#), Phys. Rev. A **59**, 1571 (1999).
5. Ziad H. Musslimani, [Long Wave Instability In Optical Parametric Oscillators](#), Physica A **249**, 141 (1998).
4. Ziad H. Musslimani and Boris A. Malomed, [Modulational instability in bulk dispersive quadratically nonlinear media](#), Physica D **123**, 235 (1998).
3. Ziad H. Musslimani and Y. Ben-Aryeh, [Quantum phase distribution of thermal phase squeezed states](#), Phys. Rev. A **57**, 1451 (1998).
2. Ziad H. Musslimani, S. L. Braunstein, A. Mann and M. Revzen, [Destruction of photocount by thermal noise](#), Phys. Rev. A **51**, 4967 (1995).
1. M. Kamal, Ziad H. Musslimani and A. Auerbach, [Enhancement of Persistent Currents by Hubbard Interactions in Disordered 1D Rings: Avoided Level Crossings Interpretation](#), J. Phys. I France **5**, 1487 (1995).

Book Chapters

3. Mark J. Ablowitz and Ziad H. Musslimani, Dispersion-managed dark and gray solitons in Nonlinear Physics: Theory and Experiment, World Scientific.
2. Mark J. Ablowitz, T. Hirooka, and Ziad H. Musslimani, Nonlinear Waves and (Interesting) Applications, in Nonlinear Dynamics: From Optics to Ecosystems (Lecture Notes in Complex Systems), World Scientific.
1. T. Carmon, R. Uzdin, C. Pigier, Ziad H. Musslimani, M. Segev, and A. Nepomnyashchy: Rotating Propeller Solitons, in Soliton-Driven Photonics, NATO Advanced Study Institute, Kluwer Academic Publisher (2000).