


Efstathios G. Charalampidis

CONTACT INFORMATION	<p>Mathematics Department California Polytechnic State University Faculty Offices East Building 25 San Luis Obispo, CA 93407-0403, USA</p> <p>☎ (805) 756-2465 ☎ (413) 801-3991 ✉ echarala@calpoly.edu Webpage: https://www.egcharalampidis.com/ Google scholar: https://scholar.google.com/citations?user=pGrs2YIAAAAJ&hl=en ResearchGate: https://www.researchgate.net/profile/Efstathios_Charalampidis ORCID iD:  https://orcid.org/0000-0002-5417-4431</p>
RESEARCH INTERESTS	<p>Numerical Analysis, Ordinary and Partial Differential Equations, Applied Mathematics, Mathematical Physics, Gravitation, Nonlinear Waves</p>
EDUCATION	<ul style="list-style-type: none">• Aristotle University of Thessaloniki, Department of Mathematical, Physical and Computational Sciences, Thessaloniki, Greece<ul style="list-style-type: none">▷ Ph.D. in Applied Mathematics, November 2009 - June 2013 Thesis title: <i>“Skyrmions, Topology and Geometry”</i> Advisor: Professor Theodora I. Ioannidou• Aristotle University of Thessaloniki, Physics Department, Thessaloniki, Greece<ul style="list-style-type: none">▷ M.Sc. in Computational Physics, September 2007 - October 2009▷ B.Sc. in Physics, September 2002 - September 2007<ul style="list-style-type: none">★ Major: Theoretical Physics
ACADEMIC EMPLOYMENT	<ul style="list-style-type: none">• California Polytechnic State University San Luis Obispo, Mathematics Department<ul style="list-style-type: none">▷ Assistant Professor, September 2019 -• University of Massachusetts Amherst, Department of Mathematics and Statistics<ul style="list-style-type: none">▷ Lecturer and Chief Undergraduate Advisor, September 2018 - August 2019▷ Visiting Assistant Professor, September 2015 - August 2018▷ Postdoctoral Research Associate, November 2013 - June 2015
GRANTS & FELLOWSHIPS	<ul style="list-style-type: none">• National Science Foundation<ul style="list-style-type: none">▷ “Undergraduate Research in Nonlinear Waves, Mathematical Biology, and Data Science: Theory and Computation”, amount: \$291,210 (submitted)• California Polytechnic State University, San Luis Obispo<ul style="list-style-type: none">▷ Scholarly and Creative Activities (RSCA) grant, amount: \$17,976, July 2020 - March 2022• US AFOSR (FA9550-12-1-0332) grant<ul style="list-style-type: none">▷ Postdoctoral fellowship, November 2014 - June 2015• European Commission, Community Research: “FP7, Marie Curie Actions, International Research Staff Exchange Scheme (IRSES-605096)” grant<ul style="list-style-type: none">▷ Postdoctoral fellowship, November 2013 - November 2014• DFG Research Training Group 1620 “Models of Gravity”, Institut für Physik, Universität Oldenburg, Germany<ul style="list-style-type: none">▷ Research fellowship, August 4 - October 5, 2013• Department of Mathematical, Physical and Computational Sciences, Aristotle University of Thessaloniki, Greece<ul style="list-style-type: none">▷ Research studentship, September 2010 - June 2011▷ Research studentship, March 2010 - July 2010

HONORS & AWARDS

- Institute of Physics (IOP), Journal of Optics
 - ▷ “Emerging Leaders in Optics 2021”
- University of Massachusetts Amherst
 - ▷ Finalist for the “Distinguished Teaching Award”, November 2017
- Aristotle University of Thessaloniki, Greece
 - ▷ “Scholarship of Excellence” awarded by University’s Research Committee, 2012

TEACHING EXPERIENCE

- California Polytechnic State University San Luis Obispo¹
 - ▷ MATH 143 - Calculus III (F19, W20, S20, F20, W22)
 - ▷ MATH 241 - Calculus IV (F21)
 - ▷ MATH 344 - Linear Analysis II (S21)
 - ▷ MATH 451 - Numerical Analysis I (W20, W21, W22)
 - ▷ MATH 452 - Numerical Analysis II (S21)
 - ▷ MATH 453 - Numerical Optimization (S20, S22)
- University of Massachusetts Amherst¹
 - ▷ MATH 552 - Applications of Scientific Computing (S18, S19)
 - ▷ MATH 551 - Introduction to Scientific Computing (S17, F17, S18, S19)
 - ▷ MATH 456 - Mathematical Modeling (Fall 2018)
 - ▷ MATH 331 - Ordinary Differential Equations for Scientists & Engineers (F15, S16, F17, F18)
 - ▷ MATH 233 - Multivariable Calculus (F16)
- Aristotle University of Thessaloniki, Department of Mathematical, Physical and Computational Sciences, Thessaloniki, Greece
 - ▷ Teaching Assistant for Linear Algebra and Partial Differential Equations, September 2010-June 2013

MENTORING EXPERIENCE

- California Polytechnic State University San Luis Obispo
 - ▷ **Undergraduate Students:**
 - ★ September 2020 - June 2021: Marisa Lee
Project title: “A Roadmap to Energy Harvesting using Granular Crystal Chains” funded by RSCA
 - ▷ **Senior Projects:**
 - ★ January 2021 - June 2021: Maeve Calanog
Project title: “Time-periodic solutions in granular materials”
 - ▷ **FROST funded research:**
 - ★ Summer 2020: Marisa Lee, Rachel Loh, and Harry Yan
Project title: “Energy localization in granular crystals for energy harvesting”
 - ★ Summer 2021: Andy Chiv, Riley Prendergast, and Alexis Saucerman
Project title: “Computation of matter waves in atomic physics”
 - ▷ **Independent study:**
 - ★ Spring 2021: Scott Plantenga
Topic: “Numerical Optimization methods for controlling lunar landers”
 - ★ Summer 2020: Wesley Khademi
Topic: “Artificial Neural Networks and Differential Equations”
- University of Massachusetts Amherst
 - ▷ **Chief Undergraduate Advisor** (CUA) for the Department of Mathematics and Statistics, September 2018 - August 2019
 - ▷ **Graduate Students:**
 - ★ September 2016 - September 2017: Christian Hoffmann
 - ▷ **Undergraduate Theses:**
 - ★ September 2019 - May 2020: Jimmy Hwang
Honors Thesis title: “Formation of Bursting Events in a Lattice Dynamical System”

¹F=Fall; S=Spring; W=Winter

- ★ September 2018 - May 2019: Jennifer Sullivan
Honors Thesis title: “On the stability of localized solutions in the Ablowitz-Ladik model”
- ★ September 2018 - May 2019: Fiona McCann
Honors Thesis title: “Dynamical Research into Bipolar Disorder: A Theoretical Approach”
- ▷ **REU students:**
 - ★ Summer 2018: Katherine Donoghue
Project title: “The formation of rogue waves in granular crystals”
 - ★ Summer 2017: Sydney Hauver and Xinyi He
Project title: “Study of solitary wave propagation in woodpile chains”
 - ★ Summer 2016: Anya Conti
Project title: “Modeling rogue waves in the nonlinear Schrödinger equation and Ablowitz-Ladik lattice system”

SYNERGISTIC
ACTIVITIES

- Conference and seminar organization
 - ▷ Co-organizer (with P. Kevrekidis and C. Chong) of the webinar series on “Nonlinear Waves and Coherent Structures”, since September 2020
 - ▷ Co-organizer (with P. Kevrekidis and R. Carretero) of the special session on “Nonlinear Waves in Bose-Einstein Condensates: Recent developments”, The 12th IMACS International Conference on Nonlinear Evolution Equations and Wave Phenomena: Computation and Theory, University of Georgia, Athens, GA, March 29 - April 1, 2022
 - ▷ Co-organizer (with D. Mantzavinos) of the special session on “Nonlinear Waves: Analysis & Computation”, The 12th IMACS International Conference on Nonlinear Evolution Equations and Wave Phenomena: Computation and Theory, University of Georgia, Athens, GA, March 29 - April 1, 2022
 - ▷ Co-organizer (with S. Xing) of the special session on “Nonlinear Vibrations and Waves”, 2nd Online Conference on Nonlinear Dynamics and Complexity, October 4 - 6, 2021
 - ▷ Co-organizer (with P. Kevrekidis) of the special session on “Nonlinear Waves in Lattice Dynamical Systems”, SIAM Annual Meeting, Spokane, WA, July 19 - 23, 2021
 - ▷ Co-organizer (with R. Parker and F. Tsitoura) of the special session on “Existence and stability of nonlinear waves: theory and numerical computations”, SIAM Conference on Applications of Dynamical Systems, Snowbird, UT, May 19 - 23, 2019
 - ▷ Co-organizer (with F. Tsitoura) of the special session on “Nonlinear Evolutionary and Lattice Equations: Theory, Numerics and Experiment”, The 11th IMACS International Conference on Nonlinear Evolution Equations and Wave Phenomena: Computation and Theory, University of Georgia, Athens, GA, April 17 - 19, 2019
 - ▷ Member of the Scientific Program Committee of the IMACS International conference on Nonlinear Evolution Equations and Wave Phenomena: Computation and Theory, University of Georgia, Athens, GA, since 2018
 - ▷ Co-organizer (with J. Bramburger and R. Goh) of the Brown/BU/UMass PDE Seminar, 2018 - 2019
 - ▷ Co-organizer (with V. Rothos) of the special session on “Localized Structures in Nonlinear Evolution and Lattice Equations”, SIAM Conference on Nonlinear Waves and Coherent Structures, Orange, CA, June 11 - 14, 2018
 - ▷ Co-organizer (with V. Rothos) of the special session on “Nonlinear Waves: Mathematical Methods and Applications”, The 10th IMACS International Conference on Nonlinear Evolution Equations and Wave Phenomena: Computation and Theory, University of Georgia, Athens, GA, March 29 - April 1, 2017.
 - ▷ Co-organizer (with C. Chong) of the special session on “Analysis and Applications of the Nonlinear Schrödinger Equation”, SIAM Conference on Nonlinear Waves and Coherent Structures, Philadelphia, PA, August 8 - 11, 2016
 - ▷ Accompanying REU students from UMass for the 2016 Summer Undergraduate Research Conference, Department of Mathematics and Statistics, Williams College, Williamstown, MA, July 29, 2016
 - ▷ Organizer of the Nonlinear Waves Seminar, Department of Mathematics and Statistics, University of Massachusetts Amherst, MA, September 2015 - September 2017
- Referee/reviewer for scientific journals, books, and funding agencies:
 - ▷ *National Science Foundation* (NSF), since 2021

- ▷ *European Physical Journal Plus* (EPJP), since 2021
- ▷ *Journal of Scientific Computing*, since 2021
- ▷ *Mathematical Reviews* (AMS), since 2021
- ▷ *Communications in Nonlinear Science and Numerical Simulation*, since 2021
- ▷ *Nonlinear Dynamics* (Springer), since 2021
- ▷ *Frontiers in Physics*, since 2020
- ▷ *Chaos, Solitons & Fractals*, since 2020
- ▷ *American Institute of Mathematical Sciences* (AIMS), since 2020
- ▷ *Springer, Applied Sciences*, since 2018
- ▷ *European Physical Journal B*, since 2017
- ▷ *Journal of Applied Physics* (AIP), since 2017
- ▷ *Physics Letters A*, since 2014

PROFESSIONAL
MEMBERSHIPS

- Society for Advancement of Chicanos/Hispanics and Native Americans in Science (SACNAS), since 2021
- Society for Industrial and Applied Mathematics (SIAM), since 2014
- American Mathematical Society (AMS), since 2014

RESEARCH VISITS

- Isaac Newton Institute for Mathematical Sciences, Cambridge, UK, September 11 - 16, 2022
- Department of Mathematics, University of Kansas, KS, October 26 - 31, 2021
- Joint visit: Center for Nonlinear Studies, Los Alamos National Laboratory, Los Alamos, NM; Santa Fe Institute, Santa Fe, NM, March 9 - 12, 2020
- Department of Mathematics, University of Illinois at Urbana-Champaign, IL, August 26 - 28, 2019
- Center for Nonlinear Studies, Los Alamos National Laboratory, Los Alamos, NM, July 11 - 12, 2019
- Division of Applied Mathematics, Brown University, RI, June 26 - 29, 2018
- The Program in Applied & Computational Mathematics, Princeton University, NJ, January 16 - 18, 2017
- The Program in Applied & Computational Mathematics, Princeton University, NJ, September 15 - 21, 2016
- Department of Mathematics and Statistics, San Diego State University, CA, May 15 - 19, 2016
- The Iby and Aladar Fleischman Faculty of Engineering, Tel Aviv University, Israel, July 5 - 10, 2015
- Institut für Physik, Universität Oldenburg, Germany, August 4 - October 5, 2013
- Department of Mathematics and Statistics, University of Massachusetts Amherst, MA, September - October, 2012
- Institut für Physik, Universität Oldenburg, Germany, July, 2012

SCHOOLS &
SEMINARS

- Summer School for Graduate Students, Wolfersdorf, Germany
 - ▷ 17th Saalburg Summer School on “Foundations and New Methods in Theoretical Physics”, August 29 - September 09, 2011
- The Abdus Salam International Centre for Theoretical Physics (ICTP), Trieste, Italy
 - ▷ “School on Computational Methods in Dynamics”, June 20 - July 1, 2011
- School of Mathematics, Statistics and Actuarial Sciences, University of Kent, UK
 - ▷ “Classical and Quantum Integrable Models”, July 19 - 23, 2010

- [36] *The existence and stability of self-similar solutions to the focusing Nonlinear Schrödinger Equation with a power law nonlinearity*
E.G. Charalampidis, D. Mantzavinos, M.E Kavousanakis, P.G. Kevrekidis, and I.G. Kevrekidis (in preparation)
- [35] *Time-periodic solutions in a damped-driven p -dimer chain*
M. Lee, E.G. Charalampidis, S. Xing, C. Chong, and P.G. Kevrekidis (in preparation)
- [34] *Neural Networks Enforcing Physical Symmetries in Nonlinear Dynamical Lattices: The Case Example of the Ablowitz-Ladik Model*
W. Zhu, W. Khademi, E.G. Charalampidis, and P.G. Kevrekidis (in preparation)
- [33] *Existence, Stability and Dynamics of Monopole and Alice Ring Solutions in $F = 1$ ^{23}Na Spinor Condensates*
M. Thudiyangal, R. Carretero-González, E.G. Charalampidis, D.S. Hall, and P.G. Kevrekidis (in preparation)
- [32] *Wave manipulation using a bistable chain with reversible impurities*
H. Yasuda, E.G. Charalampidis, P.K. Purohit, P.G. Kevrekidis, and J.R. Raney
[arXiv:2104.15108](#) (submitted to PRE)
- [31] *Stability of exact solutions of a nonlocal and nonlinear Schrödinger equation with arbitrary nonlinearity*
E.G. Charalampidis, F. Cooper, A. Khare, J. Dawson, and A. Saxena
[arXiv:2104.14736](#) (submitted to JPA)
- [30] *Numerical bifurcation and stability for the capillary-gravity Whitham equation*
E.G. Charalampidis and V.M. Hur
Wave Motion **106**, 102793 (2021)
- [29] *The stability of peakons of the b -family*
E.G. Charalampidis, R. Parker, P.G. Kevrekidis, and S. Laforune
[arXiv:2012.13019](#) (submitted to Nonlinearity)
- [28] *Nonlinear Localized Modes in Two-Dimensional Hexagonally-Packed Magnetic Lattices*
C. Chong, Y. Wang, D. Maréchal, E.G. Charalampidis, M. Molerón, A.J. Martínez, M.A. Porter, P.G. Kevrekidis, and C. Daraio
New J. Phys. **23**, 043008 (2021)
- [27] *Behavior of solitary waves of coupled nonlinear Schrödinger equations subjected to complex external periodic potentials with odd- \mathcal{PT} symmetry*
E.G. Charalampidis, F. Cooper, J. Dawson, A. Khare, and A. Saxena
J. Phys. A: Math. and Theor. **54**, 145701 (2021)
- [26] *Dark-dark soliton breathing patterns in multi-component Bose-Einstein condensates*
W. Wang, L.-C. Zhao, E.G. Charalampidis and P.G. Kevrekidis
J. Phys. B: At. Mol. Opt. Phys. **54**, 055301 (2021)
- [25] *Kuznetsov-Ma breather-like solutions in the Salerno model*
J. Sullivan, E.G. Charalampidis, J. Cuevas-Maraver, P.G. Kevrekidis, and N. Karachalios
Eur. Phys. J. Plus **135**, 607 (2020)
- [24] *Deflation-based Identification of Nonlinear Excitations of the three-dimensional Gross-Pitaevskii equation*
N. Boullé, E.G. Charalampidis, P.E. Farrell and P.G. Kevrekidis
Phys. Rev. A **102**, 053307 (2020)
- [23] *Stability and response of trapped solitary wave solutions of coupled nonlinear Schrödinger equations in an external, \mathcal{PT} - and supersymmetric potential*
E.G. Charalampidis, J. Dawson, F. Cooper, A. Khare, and A. Saxena
J. Phys. A: Math. and Theor. **53**, 455702 (2020)

- [22] *Bifurcation analysis of stationary solutions of two-dimensional coupled Gross-Pitaevskii equations using deflated continuation*
E.G. Charalampidis, N. Boullé, P.E. Farrell and P.G. Kevrekidis
Commun. Nonlinear Sci. Numer. Simulat **87**, 105255 (2020)
- [21] *Breathers and other time-periodic solutions in an array of cantilevers decorated with magnets*
C. Chong, A. Foehr, E.G. Charalampidis, P.G. Kevrekidis and C. Daraio
Math. Engin. **1**(3), 489 (2019)
- [20] *Origami-based impact mitigation via rarefaction solitary wave creation*
H. Yasuda, Y. Miyazawa, E.G. Charalampidis, C. Chong, P.G. Kevrekidis and J. Yang
Sci. Adv. **5**, eaau2835 (2019)
- [19] *Phononic rogue waves*
E.G. Charalampidis, J. Lee, P.G. Kevrekidis and C. Chong
Phys. Rev. E **98**, 032903 (2018)
- [18] *Lattices with internal resonator defects*
S. Hauver, X. He, D. Mei, E.G. Charalampidis, P.G. Kevrekidis, E. Kim, J. Yang and A. Vainchtein
Phys. Rev. E **98**, 032902 (2018)
- [17] *Peregrine solitons and gradient catastrophes in discrete nonlinear Schrödinger systems*
C. Hoffmann, E.G. Charalampidis, D.J. Frantzeskakis and P.G. Kevrekidis
Phys. Lett. A **382**, 3064 (2018)
- [16] *Computing stationary solutions of the two-dimensional Gross-Pitaevskii equation with deflated continuation*
E.G. Charalampidis, P.G. Kevrekidis and P.E. Farrell
Commun. Nonlinear Sci. Numer. Simulat **54**, 482 (2018)
- [15] *Rogue waves in ultracold bosonic seas*
E.G. Charalampidis, J. Cuevas-Maraver, D.J. Frantzeskakis and P.G. Kevrekidis
Rom. Rep. Phys. **70**, 504 (2018)
- [14] *Discrete BPS Skyrmions*
M. Agaoglou, E.G. Charalampidis, T.A. Ioannidou and P. G. Kevrekidis
J. Math. Phys. **58**, 091501 (2017)
- [13] *Revisiting Diffusion: Self-similar Solutions and the $t^{-1/2}$ Decay in Initial and Initial-Boundary Value Problems*
P.G. Kevrekidis, M.O. Williams, D. Mantzavinos, E.G. Charalampidis, M. Choi and I.G. Kevrekidis
Quart. Appl. Math. **75**, 581 (2017)
- [12] *SO(2)-induced breathing patterns in multi-component Bose-Einstein condensates*
E.G. Charalampidis, W. Wang, P.G. Kevrekidis, D.J. Frantzeskakis and J. Cuevas-Maraver
Phys. Rev. A **93**, 063623 (2016)
- [11] *Vortex-soliton complexes in coupled nonlinear Schrödinger equations with unequal dispersion coefficients*
E.G. Charalampidis, P.G. Kevrekidis, D.J. Frantzeskakis and B.A. Malomed
Phys. Rev. E **94**, 022207 (2016)
- [10] *Nonlinear vibrational-state excitation and piezoelectric energy conversion in harmonically driven granular chains*
C. Chong, E. Kim, E.G. Charalampidis, H. Kim, F. Li, P.G. Kevrekidis, J. Lydon, C. Daraio and J. Yang
Phys. Rev. E **93**, 052203 (2016)

- [9] **Formation of rarefaction waves in origami-based metamaterials**
H. Yasuda, C. Chong, E.G. Charalampidis, P.G. Kevrekidis and J. Yang
Phys. Rev. E **93**, 043004 (2016)
- [8] **Wormholes from chiral fields**
E.G. Charalampidis, T.A. Ioannidou, B. Kleihaus and J. Kunz
J. Phys. Conf. Ser. **574**, 012058 (2015)
- [7] **Time-Periodic Solutions of Driven-Damped Trimer Granular Crystals**
E.G. Charalampidis, F. Li, C. Chong, J. Yang and P.G. Kevrekidis
Math. Prob. in Eng. **2015**, 830978 (2015)
- [6] **Lattice three-dimensional skyrmions revisited**
E.G. Charalampidis, T.A. Ioannidou and P.G. Kevrekidis
Phys. Scr., **90** 025202 (2015)
- [5] **Dark-bright solitons in coupled nonlinear Schrödinger equations with unequal dispersion coefficients**
E.G. Charalampidis, P.G. Kevrekidis, D.J. Frantzeskakis and B.A. Malomed
Phys. Rev. E **91**, 012924 (2015)
- [4] **Vector rogue waves and dark-bright boomeronic solitons in autonomous and non-autonomous settings**
R. Babu Mareeswaran, E.G. Charalampidis, T. Kanna, P.G. Kevrekidis and D.J. Frantzeskakis
Phys. Rev. E **90**, 042912 (2014)
- [3] **Rogue waves in nonlinear Schrödinger models with variable coefficients: Application to Bose-Einstein condensates**
J.S. He, E.G. Charalampidis, P.G. Kevrekidis and D.J. Frantzeskakis
Phys. Lett. A **378**, 577 (2014)
- [2] **Wormholes threaded by chiral fields**
E.G. Charalampidis, T.A. Ioannidou, B. Kleihaus and J. Kunz
Phys. Rev. D **87**, 084069 (2013)
- [1] **Skyrmions, rational maps and scaling identities**
E.G. Charalampidis, T.A. Ioannidou and N.S. Manton
J. Math. Phys. **52**, 033509 (2011)

INVITED TALKS &
SEMINARS

- Banff International Research Station (BIRS) Conference: Towards realistic models of water waves: effects of forcing, dissipation, and bathymetry, Oaxaca, Mexico, 2023. Talk title: TBA
- The 13th AIMS Conference on Dynamical Systems and Differential Equations, Rome, June 2022. First talk title: “*Extreme nonlinear excitations in lattice and continuum models*”; second talk title: “*The configuration space of solutions in Nonlinear Schrödinger systems: From single to multicomponent models in 2D and 3D*”
- The 12th IMACS International Conference on Nonlinear Evolution Equations and Wave Phenomena: Computation and Theory, University of Georgia, Athens, GA, March 29 - April 1, 2022. Talk title: TBA
- Colloquium, Department of Mathematics, University of Kansas, KS, October 28, 2021. Talk title: TBA
- SIAM Annual Meeting, Spokane, WA, July 19 - 23, 2021. Talk title: “*Rogue waves in integrable and non-integrable systems: Existence, stability and dynamics*”
- 2021 Application of Mathematics in Technical and Natural Sciences (AMiTaNS) conference, Albena, Bulgaria, June 24 - 29, 2021. Talk title: “*Bifurcation analysis tools for Nonlinear Complex Dynamical Systems*”

- SIAM Conference on Applications of Dynamical Systems, Portland, OR, May 23 - 27, 2021. Talk title: “*Rogue waves in continuous and discrete models: Existence, stability and dynamics*”
- SIAM Conference on Analysis of Partial Differential Equations, La Quinta, CA, December 11 - 14, 2019. Talk title: “*Bifurcation analysis of nonlinear PDEs using deflated continuation*”
- Colloquium, Mathematics Department, California Polytechnic State University, San Luis Obispo, CA, October 25, 2019. Talk title: “*Deflated Continuation: A bifurcation analysis tool for Nonlinear Complex Dynamical Systems*”
- Colloquium, Department of Mathematics, University of Illinois at Urbana-Champaign, IL, August 27, 2019. Talk title: “*Deflated Continuation: A bifurcation analysis tool for Nonlinear Schrödinger (NLS) Systems*”
- Colloquium, Center for Nonlinear Studies, Los Alamos National Laboratory, Los Alamos, NM, July 12, 2019. Talk title: “*Deflated Continuation: A bifurcation analysis tool for Nonlinear Schrödinger (NLS) Systems*”
- SIAM Conference on Applications of Dynamical Systems, Snowbird, UT, May 19 - 23, 2019. Talk title: “*Bifurcation analysis in NLS systems using deflated continuation*”
- The 11th IMACS International Conference on Nonlinear Evolution Equations and Wave Phenomena: Computation and Theory, University of Georgia, Athens, GA, April 17 - 19, 2019. Talk title: “*Formation of extreme events in nonlinear Schrödinger (NLS) systems*”
- Colloquium, Department of Mathematics, New York Institute of Technology, Old Westbury, NY, February 26, 2019. Talk title: “*Nonlinear waves: From optics to matter waves and beyond*”
- Colloquium, Department of Applied Mathematics and Statistics, Johns Hopkins University, Baltimore, MD, February 15, 2019. Talk title: “*Nonlinear waves: From optics to matter waves and beyond*”
- Colloquium, Department of Mathematics and Statistics, San José State University, San José, CA, February 11, 2019. Talk title: “*Nonlinear waves: From optics to matter waves and beyond*”
- Colloquium, Mathematics Department, California Polytechnic State University, San Luis Obispo, CA, February 8, 2019. Talk title: “*Nonlinear waves: From optics to matter waves and beyond*”
- Nonlinear Waves Seminar, Department of Mathematics and Statistics, University of Massachusetts Amherst, MA, December 7, 2018. Talk title: “*Rogue waves in ultracold physics: from continuous to discrete models*”
- Colloquium, Department of Mathematics, Bowdoin College, Brunswick, ME, May 3, 2018. Talk title: “*Nonlinear waves in atomic Bose-Einstein Condensates: Theory and Computation*”
- Brown/Boston University Dynamics and PDEs Seminar, Brown University, Providence, RI, April 19, 2018. Talk title: “*Formation of rogue waves in continuous and discrete models: Theory and Computation*”
- AMS Spring Central Sectional Meeting, Ohio State University, Columbus, OH, March 17 - 18, 2018. Talk title: “*Formation of rogue waves in continuous and discrete models: Theory and Computation*”
- Colloquium, William E. Boeing Department of Aeronautics & Astronautics, University of Washington, Seattle, WA, October 6, 2017. Talk title: “*Nonlinear waves in Granular Crystals*”
- The IV AMMCS International Conference, Wilfrid Laurier University, Waterloo, ON, Canada, August 20 - 25, 2017. Talk title: “*Nonlinear waves in nonlinear Schrödinger (NLS) systems*”
- The 10th IMACS International Conference on Nonlinear Evolution Equations and Wave Phenomena: Computation and Theory, University of Georgia, Athens, GA, March 29 - April 1, 2017. First talk title: “*Formation of rogue waves in nonlinear Schrödinger (NLS) systems: Theory and*”

Computation”; second talk title: “*Multi-component nonlinear waves in nonlinear Schrödinger (NLS) systems*”

- AMS Spring Southeastern Sectional Meeting, College of Charleston, Charleston, SC, March 10 - 12, 2017. Talk title: “*Multi-component nonlinear Schrödinger (NLS) systems: From Theory to Numerical Computations*”
- Colloquium, Department of Mathematics, Miami University, Oxford, OH, January 25, 2017. Talk title: “*Nonlinear waves in NLS systems and beyond: Theory and Computation*”
- AMS Fall Eastern Sectional Meeting, Bowdoin College, Brunswick, ME, September 24 - 25, 2016. Talk title: “*Multi-component nonlinear waves in one and two dimensional coupled nonlinear Schrödinger (NLS) systems: Theory and Numerical Computations*”
- Colloquium, Department of Mathematics and Statistics, San Diego State University, San Diego, CA, May 16, 2016. Talk title: “*Dark-bright solitons and their two-dimensional counterparts in coupled nonlinear Schrödinger (NLS) Systems*”
- Colloquium, Department of Mathematics, Bowdoin College, Brunswick, ME, March 8, 2016. Talk title: “*Dark-bright solitons and their two-dimensional counterparts in coupled nonlinear Schrödinger (NLS) Systems*”
- Emergent Paradigms in Nonlinear Complexity: From *PT*-Symmetry to Nonlinear Dirac Systems, From Polaritons to Skyrmions, Santa Fe Institute, Santa Fe, NM, June 8 - 10, 2015. Talk title: “*Skyrmions, Topology and Geometry*”
- SIAM Conference on Applications of Dynamical Systems, Snowbird, UT, May 17 - 21, 2015. Talk title: “*Vector Rogue Waves and Dark-Bright Boomeronic Solitons in Autonomous and Non-Autonomous Settings*”
- The 9th IMACS International Conference on Nonlinear Evolution Equations and Wave Phenomena: Computation and Theory, University of Georgia, Athens, GA, April 1 - 4, 2015. Talk title: “*Dark-bright solitons in coupled nonlinear Schrödinger (NLS) equations with unequal dispersion coefficients*”
- Colloquium, Institut für Physik, Universität Oldenburg, Germany, September 27, 2013. Talk title: “*Topological properties of the Skyrme model*”
- Nonlinear Waves Seminar, Department of Mathematics and Statistics, University of Massachusetts Amherst, MA, September 28, 2012. Talk title: “*Skyrmions, rational maps and scaling identities*”
- IMA’s Conference on Nonlinearity and Coherent Structures, University of Reading, UK, July 6 - 8, 2011. Talk title: “*Skyrmions, rational maps and scaling identities*”
- 2nd Online Conference on Nonlinear Dynamics and Complexity, October 4 - 6, 2021. Talk title: “*Formation of rogue waves in continuous and discrete models*”
- 2019 Joint Mathematics Meeting (AMS & MAA), Baltimore, MD, January 16 - 19, 2019. Talk title: “*Peregrine solitons and gradient catastrophes in continuous and discrete NLS systems*”
- SIAM Conference on Nonlinear Waves and Coherent Structures, Orange, CA, June 11 - 14, 2018. Talk title: “*Formation of rogue waves in continuum and discrete models: Theory and Computation*”
- SIAM Conference on Nonlinear Waves and Coherent Structures, Philadelphia, PA, August 8 - 11, 2016. Talk title: “*Dark-bright solitons and their two-dimensional counterparts in coupled nonlinear Schrödinger (NLS) Systems*”
- Nonlinear Waves Seminar, Department of Mathematics and Statistics, University of Massachusetts Amherst, MA, February 12, 2016. Talk title: “*Skyrmions, Topology and Geometry*”

CONFERENCE
PRESENTATIONS &
PARTICIPATION

- Conference on Computational Methods in Dynamics, The Abdus Salam International Centre for Theoretical Physics, Trieste, Italy, July 4 - 8, 2011
- Young Researchers in Mathematics 2011, Mathematics Institute, University of Warwick, UK, April 14 - 16, 2011. Talk title: “*Skyrmions, rational maps and scaling identities*”
- Department of Mathematical, Physical and Computational Sciences, Aristotle University of Thessaloniki, Greece, December 2010. 1st meeting of PhD candidates. Talk title: “*Skyrmions, rational maps and scaling identities*”
- Geometry and Physics in Cracow, Institute of Mathematics, Jagiellonian University, Cracow, Poland, September 21 - 25, 2010. Poster presentation
- 10th Hellenic School and Workshops on Elementary Particle Physics and Gravity, Corfu, Greece, September 8 - 12, 2010
- 2010 Workshop on Recent Advances in Particle Physics, Aristotle University of Thessaloniki, Thessaloniki, Greece, March 25 - 28, 2010

COMPUTER SKILLS

- Computer proficient: Operating systems Linux, Unix, MacOS, Windows
- Programming Languages: Fortran, C/C++, Python, Bash scripting, Java
- Software: Mathematica, MATLAB, Julia, Maple, AUTO software for continuation and bifurcation problems, REDUCE algebra system, Root
- Parallel Programming: OpenMP

OTHER ACTIVITIES & INTERESTS

- Jazz and classical harmony; degree in jazz guitar, June 2008
- Acoustic and electric guitar instructor at the Conservatory of Municipality of Ampelokipoi, Thessaloniki, Greece, October 2007 - January 2008
- Electronics: Design and construction of hi-fi tube amplifiers
- Sports: Participated in weightlifting competitions (Gold medal in the Northern Greece Championship), 1997 - 2000
- Philosophy of Science, history of music and physics; literature

PROFESSIONAL
REFERENCES

Panayotis Kevrekidis

Department of Mathematics and Statistics
University of Massachusetts Amherst
Amherst, MA 01003-9305, USA

✉ kevrkid@math.umass.edu

☎ (413) 577-1977

Jinkyu Yang

Department of Aeronautics & Astronautics
University of Washington
Seattle, WA 98195-2400, USA

✉ jkyang@aa.washington.edu

☎ (206) 543-6612

Chiara Daraio

Division of Engineering & Applied Science
California Institute of Technology
Pasadena, CA 91125, USA

✉ daraio@caltech.edu

☎ (626) 395-8515

Vera Mikyoung Hur

Department of Mathematics
University of Illinois Urbana-Champaign
Urbana, IL 61801, USA

✉ verahur@math.uiuc.edu

☎ (217) 244-0142

Avadh Saxena

Theoretical Division, T-4 (MS-B262)
Condensed Matter & Complex Systems
Los Alamos National Laboratory

Los Alamos, NM 87545, USA

✉ avadh@lanl.gov

☎ (505) 667-5227

Ioannis Kevrekidis

Departments of Chemical and Biomolecular
Engineering, Applied Mathematics
and Statistics, and of Urology

Johns Hopkins University

Baltimore, MD 21218, USA

✉ yannisk@jhu.edu

☎ (609) 532-0772

Boris Malomed

Department of Physical Electronics
School of Electrical Engineering
Faculty of Engineering

Tel Aviv University

Ramat Aviv 69978, Israel

✉ malomed@post.tau.ac.il

☎ (+972) 3-640-6413

Christopher Chong

Department of Mathematics
Bowdoin College

Brunswick, ME 04011, USA

✉ cchong@bowdoin.edu

☎ (207) 725-3577