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PERSONAL DATA

Business Address: Department of Physics
Section of Condensed Matter Physics
National and Kapodistrian University of Athens
Panepistimiopolis, Zografos, 157 84 Athens, Greece

Home Address: 24 Nikiou Str., 15344 Gerakas, Athens, Greece

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Family Status: Married, two children

STUDIES

- Electrical Engineering Diploma (5 year course – BSc and MSc equivalent), University of Patras, Greece (1985).
- Doctoral Degree (PhD), National Technical University of Athens (NTUA), Greece (1989).
Thesis title: Propagation of electromagnetic pulses in nonlinear dispersive media.

CAREER - EMPLOYMENT

2012-present: Professor, Department of Physics, National and Kapodistrian University of Athens (NKUA), Athens, Greece.

2001-2012: Associate Professor, Department of Physics, NKUA, Athens, Greece.

1996-2001: Assistant Professor, Department of Physics, NKUA, Athens, Greece.

1992-1996: Lecturer, Department of Physics, NKUA, Athens, Greece.

1991-1992: Postdoctoral position, Research Associate, Electrosience Division, Department of Electrical Engineering, NTUA, Athens, Greece.

1985-1989: Teaching and Research Assistant, Electrosience Division, Department of Electrical Engineering, NTUA, Athens, Greece.

1985-1989: Instructor, Electronics Laboratory, Naval Academy of Greece, Piraeus, Greece.

TEACHING EXPERIENCE

- **Undergraduate courses**
 - Ordinary Differential Equations, 2022-present, 1st year, Phys. Dept., NKUA.

- Mathematical Methods in Physics I (Complex variables), 2016-present, 2nd year, Physics Dept., NKUA
- Mathematical Methods in Physics II (Partial differential equations and boundary value problems), 2018-present, 2nd year, Physics Dept., NKUA
- Nonlinear Dynamical Systems, 2017-present, 4th year, Physics Dept., NKUA
- Signals and Systems, 2014-2016, 3d year, Physics Dept., NKUA
- Physics I (Mechanics), 2013-2016, 1st year, Chemistry Dept., NKUA
- Physics II (Electromagnetism and optics), 2014-2018, 1st year, Chemistry Dept., NKUA
- Introduction to Communication Systems, 1992-2014, 4th year, Physics Dept., NKUA
- Basic Circuit Theory, 1992-2014, 4th year, Physics Dept., NKUA
- **Graduate courses**
 - Applied Electromagnetics, 1994-2021, 1st year MSc, Physics Dept., NKUA
 - Nonlinear Dynamics, 2013-2020, 2nd year MSc, Physics Dept., NKUA
 - Propagation of Electromagnetic Waves, 1992-1995, 2nd year MSc, Physics Dept., NKUA
- Supervisor of over 150 M.Sc. theses and B.Sc. final year projects, Phys. Dept., NKUA.
- Supervisor of the Ph.D. theses of:
 - H. E. Nistazakis, Interactions of nonlinear waves and solitons in optical fibers and dielectric waveguides (1999-2002).
 - G. Theocharis, *Nonlinear matter-waves of Bose-Einstein condensates* (2005-2008).
 - E. P. Fitrakis, Vector solitons in optical media (2006-2009).
 - V. Achilleos, Solitons in mixtures of Bose-Einstein condensates (2011-2015).
 - G. Veldes, Localized waves in nonlinear metamaterials (2009-2015).
 - F. Tsitoura, *Generation, dynamics and manipulation of solitons in Bose-Einstein condensates* (2012-2016).
 - G. N. Koutsokostas, Nonlinear waves and solitons in nonlocal nonlinear media (2019-today)
- Member of more than 60 Ph.D. committees; Ph.D. theses were carried out at:
 - Departments of Physics, Mathematics, and Informatics, NKUA.

- Departments of Physics, and Mechanical Engineering, Aristotle University of Thessaloniki.
- Department of Electrical Engineering, National Technical University of Athens.
- Departments of Mathematics and Statistics, University of the Aegean.
- Referee for the PhD theses of:
 - R. Driben, Department of Interdisciplinary Studies, Tel Aviv University, Israel.
 - P. J. Y. Louis, Research School of Physical Sciences and Engineering, Australian National University, Canberra, Australia.
 - S. Sakkaravarthi, Bishop Heber College, Bharathidasan University, Tamil Nadu, India.
 - L. C. Maple, Department of Physics and Astronomy, University of Southampton, UK.
 - Jiangyi Zhang, Department of Physics, Université du Maine, Le Mans, France.
 - Malcolm Hillebrand, Department of Mathematics and Applied Mathematics, University of Cape Town, South Africa.
 - Bertin Many Manda, Department of Mathematics and Applied Mathematics, University of Cape Town, South Africa.

RESEARCH

Research interests. Nonlinear waves and solitons (existence, formation, stability, dynamics, interactions and manipulation), with applications to various physical contexts. These include chiefly atomic Bose-Einstein condensates (BECs) and nonlinear optics (optical fibres, waveguides, waveguide arrays, photonic lattices), but also electromagnetics (nonlinear waves in metamaterials, complex media, plasmas), water waves, acoustics, classical field theory (gauge field theories, Yang-Mills models, ϕ^4 theory), and others.

Methodology. The research is based on the analysis of non-integrable, nonlinear evolution equations (such as various strongly perturbed versions of the nonlinear Schrödinger equation, Gross-Pitaevskii equation, Ginzburg-Landau equation, etc). Both continuous and discrete versions of the above equations are studied, and both analytical and numerical techniques are employed. Special emphasis is given to analytical approximations based on the use of various perturbation and asymptotic methods (multiple scales, reductive perturbation method, perturbation theory for solitons, variational approaches, boundary layer theory, etc), and nonlinear dynamics techniques. This way, underlying connecting links between different contexts are established, stemming predominantly from dynamical systems, continuation and bifurcation analysis, and stability theory of nonlinear partial differential equations (PDEs) and differential-difference equations (DDEs).

Publications and Record

- **Books.** Co-editor of four books:
 - C. Polymilis, D. J. Frantzeskakis, and K. Hizanidis (eds.), *“Order and Chaos in Nonlinear Dynamical Systems”*, Vol. 5 (G. A. Pnevmticos Eds., Athens, 1999) (text in Greek).
 - P. G. Kevrekidis, D. J. Frantzeskakis, and R. Carretero-González (eds.), *“Emergent Non-Linear Phenomena in Bose-Einstein Condensates. Theory and Experiment”*, Springer Series on Atomic, Optical, and Plasma Physics, Vol. 45 (Springer, Heidelberg, 2008) (*Forward by W. Ketterle, Nobel Prize in Physics, 2001*).
 - R. Carretero-González, J. Cuevas, D. J. Frantzeskakis, N. I. Karachalios, P. G. Kevrekidis, and F. Palmero (eds.), *“Localized Excitations in Nonlinear Complex Systems: Current state-of-the-art and future perspectives”*, Springer Series on Nonlinear Systems and Complexity, Vol. 7 (Springer International Publishing Switzerland, 2014).
 - P. G. Kevrekidis, D. J. Frantzeskakis, and R. Carretero-González, *“The defocusing nonlinear Schrödinger equation: from dark solitons and vortices to vortex rings”* (Society for Industrial and Applied Mathematics, SIAM, Philadelphia, 2015).
 - This book has been reviewed in:
 - Dynamical Systems Magazine (April 2016 issue):
<http://www.dynamicalsystems.org/ma/ma/display?item=616>
 - American Mathematics Society Mathscinet Mathematical Reviews:
https://mathscinet.ams.org/mathscinet/search/publdoc.html?arg3=&co4=AND&co5=AND&co6=AND&co7=AND&dr=all&pg4=AUCN&pg5=TI&pg6=PC&pg7=ALLF&pg8=ET&review_format=html&s4=frantzeskakis&s5=&s6=&s7=&s8=All&sort=Newest&vfpref=html&yearRangeFirst=&yearRangeSecond=&yrop=eq&r=16&mx-pid=3430817
- **Papers.** Author or co-author of 274 papers published -or in press- in peer-reviewed journals, including:
 - 5 review papers:
 - P. G. Kevrekidis and D. J. Frantzeskakis, Pattern-forming dynamical instabilities of Bose-Einstein condensates, *Mod. Phys. Lett. B* **18**, 173-202 (2004) (arXiv:cond-mat/0406657),
 - P. G. Kevrekidis, D. J. Frantzeskakis, R. Carretero-González, and I. G. Kevrekidis, Vortices in Bose-Einstein condensates: Some recent developments, *Mod. Phys. Lett. B* **18**, 1481-1505 (2004) (arXiv:cond-mat/0501030),
 - R. Carretero-González, D. J. Frantzeskakis, and P. G. Kevrekidis, Nonlinear waves in Bose-Einstein condensates: Physical relevance and mathematical techniques, *Nonlinearity* **21**, R139-R202 (2008) (arXiv:0805.0761),

- D. J. Frantzeskakis, Dark solitons in atomic Bose-Einstein condensates: from theory to experiments, *J. Phys. A: Math. Theor.* **43**, 213001 (2010) (69 pages) (arXiv:1004.4071),
- P. G. Kevrekidis and D. J. Frantzeskakis, Solitons in multi-component nonlinear Schrödinger models: a survey of recent developments, *Rev. in Phys.* **1**, 140-153 (2016) (arXiv:1512.06754).
- 131 papers in *Physical Review and Physical Review Letters*; in particular:
 - 16 papers in *Phys. Rev. Lett.*
 - 56 papers in *Phys. Rev. A*
 - 2 papers in *Phys. Rev. B*
 - 2 papers in *Phys. Rev. D*
 - 52 papers in *Phys. Rev. E*
 - 2 papers in *Phys.Rev.Research*
 - 1 paper in *Phys. Rev. Fluids*
- 31 papers in *Phys. Lett. A*,
- 22 papers in *J. Phys. A: Math. Gen. and Math. Theor.*,
- 11 papers in *Physica D*,
- 8 papers in *J. Phys. B: At. Mol. Opt. Phys.*,
- 8 papers in *J. Opt. Soc. Am. B*, etc.
- **Additional publications**
 - 12 book chapters,
 - 40 conference papers, 18 of which have been published in special issues of peer-reviewed journals.
- **Awards and distinctions**

Awards

- Nikolaos K. Artemiadis Award of the Academy of Athens on Mathematical Analysis 2018 (<http://www.academyofathens.gr/el/awards/laureates-2018>)

Distinguished papers

- *Phys. Rev. Lett.* **94**, 113902 (2005): This result was reported and commented in the April 6, 2005 issue of "*Technology Research News*": <http://www.trnmag.com>.
- *Nonlinearity* **21**, R139-R202 (2008): This paper has been included in the "*high-profile articles*" of 2008 for the *Nonlinearity* journal.

The same paper was selected to appear in the Journal's *Special Collection, 2012*, on the occasion of celebrating its 25th birthday.

Furthermore, the same paper is characterized as "Highly Cited Paper" in Web of Science.

- J. Phys. A: Math. Theor. **43**, 213001 (2010): The title and a figure from this paper, as well as the author's name, were chosen to appear on the cover of the issue in which this article was published.

Furthermore, the same paper is characterized as "Highly Cited Paper" in Web of Science.

- J. Phys. B: At. Mol. Opt. Phys. (Fast Track Commun.) **44**, 191003 (2011): This paper was picked up by the Editorial Board to feature within Journal's *Highlights of 2011* collection.
- J. Opt. **15**, 064003 (2013): This paper has been selected by the Editors of *Journal of Optics* for inclusion in the exclusive "*Highlights of 2013*" collection.

Additionally, the same paper was one of the 10 papers shortlisted for the "2015 Journal of Optics (JOPT) research excellence award":

<http://iopscience.iop.org/article/10.1088/2040-8978/17/10/100201>.

- Rom. Rep. Phys. **67**, 5–50 (2015): This paper is characterized as "Highly Cited Paper" in Web of Science.
- Proc. Roy. Soc. London A **475**, 20190110 (2019): This result was reported in the August 16, 2019 issue of "*Phys.Org / Physics / General Physics*":
<https://phys.org/news/2019-08-patterns-typically.html>).
- Appl. Phys. Lett. **118**, 104102 (2021): This paper was chosen by the Journal's Editors to be promoted as an "Editor's Pick":
<https://aip.scitation.org/topic/collections/editors-pick?SeriesKey=apl>).
- The following fourteen (14) papers were selected to appear in Virtual Journals:
 - Phys. Rev. B **74**, 064304 (2006): *Virtual Journal of Biological Physics Research*;
 - Phys. Rev. E **75**, 066608 (2007): *Virtual Journal of Ultrafast Science*;
 - Phys. Rev. E **80**, 046611 (2009), Phys. Rev. A **81**, 053618 (2010), Phys. Rev. A **81**, 063604 (2010), Phys. Rev. A **82**, 013646 (2010), Phys. Rev. A **82**, 023621 (2010), Phys. Rev. A **84**, 011605(R) (2011), J. Math. Phys. **52**, 092701 (2011), Phys. Rev. A **84**, 043640 (2011), Phys. Rev. A **84**, 053626 (2011), Phys. Rev. A **84**, 053630 (2011): *Virtual Journal of Atomic Quantum Fluids*;
 - Phys. Rev. A **79**, 033623 (2009), and Opt. Lett. **36**, 793-795 (2011): *Virtual Journal of Laser*.

- **Citations**

- ISI Web of Knowledge: More than 7,800 citations; more than 6,500 citations excluding self-citations; h-index = 46.

- Scopus: More than 8,000 citations; more than 5,200 citations excluding self-citations; h-index = 45.
- Google Scholar Citations: More than 11,580 citations; h-index=55; i10-index=204 (<http://scholar.google.com/citations?user=lu51sgYAAAAJ&hl=en>)

PUBLICATIONS

▪ Papers in peer-reviewed journals

▪ 1988

- J1. C. N. Capsalis, D. J. Frantzeskakis, and N. K. Uzunoglu, Propagation of soliton waves in nonlinear dielectric slab waveguides of parabolic index of refraction, *Int. J. Infrared and Millimeter Waves* **9**, 983-1002 (1988).

▪ 1989

- J2. C. N. Capsalis, N. K. Uzunoglu, and D. J. Frantzeskakis, Propagation of electromagnetic waves in nonlinear dispersive media, *Electromagnetics* **9**, 273-280 (1989).

▪ 1990

- J3. N. K. Uzunoglu, D. J. Frantzeskakis, and C. N. Capsalis, Analysis of the pulse propagation in a nonlinear dielectric parabolic profile slab waveguide, *Electromagnetics* **10**, 229-243 (1990).

▪ 1993

- J4. K. Hizanidis and D. J. Frantzeskakis, Reductive perturbation analysis of short pulse propagation in a nonlinear dielectric slab: The role of material dispersion in bright-to-dark soliton transitions, *IEEE J. Quantum Electron.* **QE-29**, 286-295 (1993).

- J5. P. V. Frangos, D. J. Frantzeskakis, and C. N. Capsalis, Pulse propagation in a nonlinear optical fiber of parabolic index profile by direct numerical solution of the Gel'fand-Levitan integral equations, *IEE Proc. Pt. J (Optoelectronics)* **140**, 141-149 (1993).

- J6. D. J. Frantzeskakis and T. Sphicopoulos, Nonlinear self-phase modulation in optical soliton systems with lumped amplifiers, *Opt. Commun.* **101**, 337-341 (1993).

▪ 1995

- J7. D. J. Frantzeskakis, K. Hizanidis, G. S. Tombras, and I. Belia, Nonlinear dynamics of femtosecond optical solitary wave propagation at the zero dispersion point, *IEEE J. Quantum Electron.* **QE-31**, 183-189 (1995).

- J8. D. J. Frantzeskakis, K. Hizanidis and C. Polymilis, Ultrashort solitary wave propagation in dielectric media with resonance-dominated chromatic dispersion, *J. Opt. Soc. Am. B* **12**, 687-697 (1995).

- J9. D. J. Frantzeskakis, E. Papaioannou, and K. Hizanidis, Slowly-varying femtosecond solitary waves in axially inhomogeneous optical fibers near the zero-dispersion point, *J. Opt. Soc. Am. B* **12**, 1671-1679 (1995).
- **1996**
- J10. E. Papaioannou, D. J. Frantzeskakis, and K. Hizanidis, An analytical treatment of the effect of axial inhomogeneity on femtosecond solitary waves near the zero dispersion point, *IEEE J. Quantum Electron.* **QE-32**, 145-154 (1996).
- J11. D. J. Frantzeskakis, Small-amplitude solitary structures for an extended nonlinear Schrödinger equation, *J. Phys. A: Math. Gen.* **29**, 3631-3639 (1996).
- J12. K. Hizanidis, D. J. Frantzeskakis, and C. Polymilis, Exact travelling wave solutions for a generalized nonlinear Schrödinger equation, *J. Phys. A: Math. Gen.* **29**, 7687-7703 (1996).
- **1997**
- J13. J. T. Mendonça, K. Hizanidis, D. J. Frantzeskakis, L. Oliveira e Silva, and J. L. Vomvoridis, Covariant formulation of photon acceleration, *J. Plasma Phys.* **58**, 647-654 (1997).
- J14. D. J. Frantzeskakis, Weak topological optical solitons in the femto-second time scale, *J. Opt. Soc. Am. B* **14**, 2359-2364 (1997).
- **1998**
- J15. P. S. Balourdos, D. J. Frantzeskakis, M. C. Tsilis, and I. G. Tigelis, Reflectivity of a nonlinear discontinuity in optical waveguides, *Pure Appl. Opt.* **7**, 1-11 (1998).
- J16. J. T. Mendonça, K. Hizanidis, and D. J. Frantzeskakis, Method for generating tunable high-frequency harmonics in periodically modulated $\chi^{(2)}$ materials, *Opt. Commun.* **146**, 245-248 (1998).
- J17. H. E. Nistazakis, D. J. Frantzeskakis, and K. Hizanidis, On the formation of solitary and periodic waves in optical fibres near the zero-dispersion point, *Pure App. Opt.* **7**, 491-500 (1998).
- J18. K. Hizanidis, B. A. Malomed, H. E. Nistazakis, and D. J. Frantzeskakis, Stabilizing soliton transmission by third-order dispersion in dispersion-compensated fiber links, *Pure Appl. Opt.* **7**, L57-L62 (1998).
- J19. C. Polymilis, K. Hizanidis, and D. J. Frantzeskakis, Phase plane Stäckel potential dynamics of the Manakov system, *Phys. Rev. E* **58**, 1112-1124 (1998).
- J20. D. J. Frantzeskakis, K. Hizanidis, B. A. Malomed, and C. Polymilis, Stable anti-dark light bullets supported by the third-order dispersion, *Phys. Lett. A* **248**, 203-207 (1998).
- **1999**

- J21. B. A. Malomed, D. J. Frantzeskakis, H. E. Nistazakis, A. Tsigopoulos, and K. Hizanidis, Dissipative solitons under the action of the third-order dispersion, *Phys. Rev. E* **60**, 3324-3331 (1999).
- J22. D. J. Frantzeskakis and B. A. Malomed, Multiscale expansions for a generalized cylindrical nonlinear Schrödinger equation, *Phys. Lett. A* **264**, 179-185 (1999).
- **2000**
- J23. N. Efremidis, K. Hizanidis, B. A. Malomed, H. E. Nistazakis, and D. J. Frantzeskakis, Stable transmission of solitons in the region of normal dispersion, *J. Opt. Soc. Am. B* **17**, 952-958 (2000).
- J24. A. N. Yannacopoulos, D. J. Frantzeskakis, C. Polymilis, and K. Hizanidis, Conditions for soliton trapping in random potentials using Lyapunov exponents of stochastic ODEs, *Phys. Lett. A* **271**, 334-340 (2000).
- J25. N. Efremidis, K. Hizanidis, H. E. Nistazakis, D. J. Frantzeskakis, and B. A. Malomed, Stabilization of dark solitons in the cubic Ginzburg-Landau equation, *Phys. Rev. E* **62**, 7410-7414 (2000).
- J26. H. E. Nistazakis, D. J. Frantzeskakis, P. S. Balourdos, A. Tsigopoulos, and B. A. Malomed, Dynamics of anti-dark and dark solitons in (2+1)-dimensional generalized nonlinear Schrödinger equation, *Phys. Lett. A* **278**, 68-76 (2000).
- **2001**
- J27. C. Polymilis, D. J. Frantzeskakis, A. N. Yannacopoulos, K. Hizanidis, and G. Rowlands, Optical stripes and bullets for a modified nonlinear Schrödinger equation, *J. Opt. Soc. Am. B* **18**, 75-80 (2001).
- J28. H. E. Nistazakis, D. J. Frantzeskakis, B. A. Malomed, and P. G. Kevrekidis, Head-on collisions of ring dark solitons, *Phys. Lett. A* **285**, 157-164 (2001).
- J29. D. J. Frantzeskakis, Vector solitons supported by the third-order dispersion, *Phys. Lett. A* **285**, 363-367 (2001).
- J30. H. E. Nistazakis, D. J. Frantzeskakis, and B. A. Malomed, Collisions between spatio-temporal solitons of different dimensionality in a planar waveguide, *Phys. Rev. E* **64**, 026604 (2001) (8 pages) [see also Erratum, *Phys. Rev. E* **65**, 019902, (2002)].
- J31. P. G. Kevrekidis, H. E. Nistazakis, D. J. Frantzeskakis, B. A. Malomed, and A. R. Bishop, Ring solitons on vortices, *Phys. Rev. E* **64**, 066611 (2001) (9 pages).
- **2002**
- J32. P. G. Kevrekidis, B. A. Malomed, A. R. Bishop, and D. J. Frantzeskakis, Localized vortices with a semi-integer charge in nonlinear dynamical lattices, *Phys. Rev. E* **65**, 016605 (2002) (7 pages).

- J33. H. E. Nistazakis, D. J. Frantzeskakis, J. Atai, B. A. Malomed, N. Efremidis, and K. Hizanidis, Multi-channel pulse dynamics in a stabilized Ginzburg-Landau system, *Phys. Rev. E* **65**, 036605 (2002) (12 pages) (arXiv:nlin.PS/0112046).
- J34. A. N. Yannacopoulos, D. J. Frantzeskakis, C. Polymilis, and K. Hizanidis, Motion of 2D Schrödinger solitary waves in the presence of random external potentials, *Phys. Scripta* **65**, 363-368 (2002).
- J35. B. A. Malomed, D. J. Frantzeskakis, H. E. Nistazakis, A. N. Yannacopoulos and P. G. Kevrekidis, Pulled fronts in the Cahn-Hilliard equation, *Phys. Lett. A* **295**, 267-272 (2002).
- J36. B. A. Malomed, P. G. Kevrekidis, D. J. Frantzeskakis, H. E. Nistazakis, and A. N. Yannacopoulos, One- and two-dimensional solitons in second-harmonic-generating lattices, *Phys. Rev. E* **65**, 056606 (2002) (12 pages).
- J37. P. G. Kevrekidis, B. A. Malomed, H. E. Nistazakis, D. J. Frantzeskakis, A. Saxena, and A. R. Bishop, Scattering of a solitary pulse on a local defect or breather, *Phys. Scripta* **66**, 193-200 (2002) (arXiv:nlin.PS/0204065).
- J38. H. E. Nistazakis, P. G. Kevrekidis, B. A. Malomed, D. J. Frantzeskakis, and A. R. Bishop, Targeted transfer of solitons in continua and lattices, *Phys. Rev. E (Rapid Commun.)* **66**, 015601(R) (2002) (4 pages).
- J39. D. J. Frantzeskakis, I. G. Stratis, and A. N. Yannacopoulos, Bright-dark vector solitons in chiral media, *Phys. Scripta* **66**, 280-283 (2002).
- J40. I. E. Papacharalampous, H. E. Nistazakis, P. G. Kevrekidis, A. N. Yannacopoulos, D. J. Frantzeskakis, and B. A. Malomed, Two-dimensional solitons and their interactions on a continuous-wave background, *Phys. Scripta* **66**, 367-375 (2002).
- J41. D. J. Frantzeskakis, G. Theocharis, F. K. Diakonov, P. Schmelcher, and Yu. S. Kivshar, Interaction of dark solitons with localized impurities in Bose-Einstein condensates, *Phys. Rev. A* **66**, 053608 (2002) (9 pages).
- **2003**
- J42. G. Theocharis, D. J. Frantzeskakis, P. G. Kevrekidis, B. A. Malomed, and Yu. S. Kivshar, Ring dark solitons and vortex necklaces in Bose-Einstein condensates, *Phys. Rev. Lett.* **90**, 120403 (2003) (4 pages) (arXiv:cond-mat/0302102).
- J43. P. G. Kevrekidis, B. A. Malomed, D. J. Frantzeskakis, and A. R. Bishop, Domain walls in two-component dynamical lattices, *Phys. Rev. E* **67**, 036614 (2003) (9 pages) (arXiv:nlin.PS/0301034).
- J44. P. G. Kevrekidis, D. J. Frantzeskakis, B. A. Malomed, A. R. Bishop, and I. G. Kevrekidis, Dark-in-Bright Solitons in Bose-Einstein condensates with attractive interactions, *New J. Phys.* **5**, 64 (2003) (17 pages) (arXiv:cond-mat/0304676).
- J45. P. G. Kevrekidis, G. Theocharis, D. J. Frantzeskakis, and B. A. Malomed, Feshbach resonance management for Bose-Einstein condensates, *Phys. Rev. Lett.* **90**, 230401 (2003) (4 pages).

- J46. G. Theocharis, Z. Rapti, P. G. Kevrekidis, D. J. Frantzeskakis, and V. V. Konotop, Modulational instability of Gross-Pitaevskii type equations in (1+1)-dimensions, *Phys. Rev. A* **67**, 063610 (2003) (8 pages) (arXiv:cond-mat/0404662).
- J47. P. G. Kevrekidis, R. Carretero-González, G. Theocharis, D. J. Frantzeskakis, and B. A. Malomed, Vortices in a Bose-Einstein condensate confined by an optical lattice, *J. Phys. B: At. Mol. Opt. Phys.* **36**, 3467-3476 (2003) (arXiv:cond-mat/0406727).
- J48. P. G. Kevrekidis, B. A. Malomed, A. Saxena, A. R. Bishop, and D. J. Frantzeskakis, Higher-order lattice diffraction: solitons in the discrete NLS equation with next-nearest-neighbor interactions, *Physica D* **183**, 87-101 (2003).
- J49. P. G. Kevrekidis, R. Carretero-González, G. Theocharis, D. J. Frantzeskakis, and B. A. Malomed, Stability of dark solitons in a Bose-Einstein condensate trapped in an optical lattice, *Phys. Rev. A* **68**, 035602 (2003) (4 pages) [arXiv:cond-mat/0406729]; see also Erratum: *Phys. Rev. A* **72**, 069908(E) (2005) (1 page).
- J50. I. E. Papacharalampous, P. G. Kevrekidis, B. A. Malomed, and D. J. Frantzeskakis, Soliton collisions in the discrete nonlinear Schrödinger equation, *Phys. Rev. E* **68**, 046604 (2003) (9 pages).
- J51. P. G. Kevrekidis, D. J. Frantzeskakis, G. Theocharis, and I. G. Kevrekidis, Guidance of matter waves through Y-junctions, *Phys. Lett. A* **317**, 513-522 (2003).
- J52. D. J. Frantzeskakis, A. Ioannidis, G. F. Roach, I. G. Stratis, and A. N. Yannacopoulos, On the error of the optical response approximation in chiral media, *Appl. Anal.* **82**, 839-856 (2003).
- J53. S. V. Dmitriev, P. G. Kevrekidis, B. A. Malomed, and D. J. Frantzeskakis, Two-soliton collisions in a near-integrable lattice system, *Phys. Rev. E* **68**, 056603 (2003) (7 pages) (arXiv:nlin.PS/0309054).
- J54. D. E. Pelinovsky, P. G. Kevrekidis, and D. J. Frantzeskakis, Averaging for solitons with nonlinearity management, *Phys. Rev. Lett.* **91**, 240201 (2003) (4 pages) (arXiv:cond-mat/0312056).
- **2004**
- J55. P. G. Kevrekidis, H. E. Nistazakis, D. J. Frantzeskakis, B. A. Malomed, and R. Carretero-González, Families of matter-waves in two-component Bose-Einstein condensates, *Eur. Phys. J. D: At. Mol. Opt. Phys.* **28**, 181-185 (2004) (arXiv:cond-mat/0312176).
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- CJ18. N. L. Tsitsas, P. Porfyraakis, and D. J. Frantzeskakis, Modeling of ultrashort pulse propagation in lossy nonlinear metamaterials, *Math. Meth. Appl. Sci.* **41**, 952-958 (2018) (Special Issue on Trends in Applied Mathematics).

▪ **Conference Proceedings published in books**

- CB1. N. K. Uzunoglu, C. N. Capsalis, D. J. Frantzeskakis, and C. Chronopoulos, Propagation of electromagnetic waves in non-linear dispersive media and in optical fibers, in: *Numerical Methods for Non-Linear Problems* (ed. C. Taylor, D. R. J. Owen, E. Hinton and F. B. Damjanic), Vol. 3, pp. 1182-1191, Pineridge Press, Swansea, UK, 1987.
- CB2. K. Hizanidis, N. Efremidis, B. A. Malomed, H. E. Nistazakis and D. J. Frantzeskakis, Variational approach to transmission in DM long optical links, *invited paper* in: "*New Trends in Optical Soliton Transmission Systems*" (ed. A. Hasegawa), pp. 117-129 (Kluwer Academic Publishers, Dordrecht, Netherlands, 1998).
- CB3. D. J. Frantzeskakis, Introduction to Physics of Optical Solitons, in: *Order and Chaos in Nonlinear Dynamical Systems*, 5th Volume, C. Polymilis, D. J. Frantzeskakis and K. Hizanidis (eds.), pp. 177-194 (G. A. Pnevmatikos Editions, Athens, 1999) (in Greek).
- CB4. D. J. Frantzeskakis, Particle properties of Schrödinger solitons, in: *Order and Chaos in Nonlinear Dynamical Systems*, 6th Volume, T. Bountis and St. Pnevmatikos (eds.), pp. 163-184 (G. A. Pnevmatikos Editions, Athens, 2000) (in Greek).
- CB5. D. J. Frantzeskakis, Nonlinear waves and solitons in contemporary nonlinear optics, *Proceedings of the 1st Interdisciplinary Symposium on Nonlinear Problems* (21-22 January 2000, NTU, Athens, Greece).
- CB6. K. Hizanidis, N. Efremidis, A. Stavdas, D. J. Frantzeskakis, H. E. Nistazakis, and B. A. Malomed, TDM and WDM with chirped solitons in optical transmission systems with distributed amplification, *invited paper* in: "*Massive WDM and TDM Soliton Transmission Systems*" (ed. A. Hasegawa), pp. 139-160 (Kluwer Academic Publishers, Dordrecht, Netherlands, 2000).
- CB7. D. J. Frantzeskakis, I. G. Stratis, and A. N. Yannacopoulos, Mathematical modelling of nonlinear time-dispersive chiral media, in: *Scattering and Biomedical Engineering. Modelling and Applications*, D. Fotiadis and C. Massalas (eds.), pp. 214-223, World Scientific Publishing, Singapore, 2002 (Proceedings of the Fifth International Workshop on Mathematical Methods in Scattering Theory and Biomedical Technology held in Corfu, Greece, October 18-19, 2001).
- CB8. D. J. Frantzeskakis, I. G. Stratis, and A. N. Yannacopoulos, Mathematical modelling of nonlinear time-dispersive chiral media, in: *Scattering and Biomedical Engineering. Modelling and Applications* (ed. D. Fotiadis and C. Massalas), pp. 214-223 (World Scientific Publishing, Singapore, 2002).
- CB9. D. J. Frantzeskakis, Asymptotic methods for solitons in multi-dimensional systems, in: *Order and Chaos in Nonlinear Dynamical Systems*, 8th Volume, T. Bountis and St. Pnevmatikos (eds.), pp. 61-74 (K. Sfakianaki Editions, 2003) (in Greek).

- CB10. D. J. Frantzeskakis, Introduction to the physics of Bose-Einstein condensates of dilute alkali atoms, in: *Order and Chaos in Nonlinear Dynamical Systems*, 9th Volume, T. Bountis and N. Vlachos (eds), pp. 161-175, University of Thessalia Editions, 2006 (in Greek).
- CB11. P. G. Kevrekidis, B. A. Malomed, D. J. Frantzeskakis and R. Carretero-González, Three-dimensional solitary waves and vortices in a discrete nonlinear Schrödinger lattice, in: *Etudes on Theoretical Physics (Collection of works dedicated to 65th anniversary of the Department of Theoretical Physics of Belarusian State University)* (ed. L. M. Barkovsky, I. D. Feranchuk, and Y. M. Shnir), pp. 251-259 (World Scientific, Singapore, 2004).
- CB12. C. Wang, G. Theocharis, P. G. Kevrekidis, N. Whitaker, D. J. Frantzeskakis, and B. A. Malomed, Nonlinear Schrödinger equations with a four-well potential in two dimensions: bifurcations and stability analysis, in: *“Nonlinear Science and Complexity”*, J. A. Tenreiro Machado, A. C. J. Luo, R. S. Barbosa, M. F. Silva and L. B. Figueiredo (eds.), pp. 173--180 (Springer-Verlag, Dordrecht, 2011).

▪ Other Conference Proceedings

- CP1. P. V. Frangos, D. J. Frantzeskakis and C. N. Capsalis, Iterative solution of the problem of pulse propagation in an inhomogeneous nonlinear optical fiber by using the Inverse Scattering Method, *3d International Symposium on Recent Advances in Microwave Technology*, August 18-21, 1991, Reno, Nevada, USA (paper 16.5).
- CP2. J. L. Vomvoridis, D. J. Frantzeskakis and K. Hizanidis, An autonomous beam buncher for Electron Cyclotron Maser applications, *17th International Conference on Infrared and Millimeter Waves*, December 14-17, 1992, California Institute of Technology, Pasadena, California, USA (paper T8.10, Conf. Proceedings pp. 270-271).
- CP3. J. L. Vomvoridis, K. Hizanidis, I. G. Tigelis and D. J. Frantzeskakis, Electrostatic effects on the quality of gyrotron beams, *Proceedings of SPIE - The International Society for Optical Engineering* 2104, pp. 460-461 (1993) (*Infrared and Millimeter Waves*, September 6-10, University of Essex, Colchester, United Kingdom).
- CP4. D. J. Frantzeskakis, I. G. Stratis and A. N. Yannacopoulos, Solvability of an elliptic system appearing in magnetohydrodynamics, 9th Hellenic Conference on Mathematical Analysis, Chania, 2002.
- CP5. R. Carretero-González, P. G. Kevrekidis, D. J. Frantzeskakis, and B. A. Malomed, Optical manipulation of matter-waves, *Proc. SPIE [Optical Trapping and Optical Micromanipulation II]* (eds. K. Dholakia, G. C. Spalding), *Int. Soc. Opt. Eng.* **5930**, 59300L (2005) (11 pages).
- CP6. M. A. Porter, M. Centurion, Ye Pu, P. G. Kevrekidis, D. J. Frantzeskakis, and D. Psaltis, Nonlinearity management in optics, *PAMM – Proc. Appl. Math. Mech.* **7**, pp. 2030029-2030030 (2007).
- CP7. V. Koukouloyannis, P.G. Kevrekidis, I. Kourakis, D. Frantzeskakis, K.J.H. Law, Discrete breathers, multibreathers and vortices in 2D dust crystals, *Proceedings of the 35th EPS Conference on Plasma Physics* (Crete, Greece, 9-13 June 2008), paper P4.162; *EPS Conference Proceedings Volume 32D*.

- CP8. N. L. Tsitsas, A. Lakhtakia, and D. J. Frantzeskakis, "Characteristics of Soliton Propagation in an Isotropic Chiral Metamaterial," Proceedings of the 6th International Congress on Advanced Electromagnetic Materials in Microwaves and Optics (METAMATERIALS 2012), Saint Petersburg, Russia, Sep. 2012, pp. 38-40.
- CP9. C. E. Tsagkarakis, V. Achilleos, F. K. Diakonov, D. J. Frantzeskakis, G. C. Katsimiga, X. N. Maintas, E. Manousakis, and A. Tsapalis, Oscillons and oscillating kinks in the Abelian-Higgs model, Proc. of Science, CORFU2014, 122 (15 pages) (2015) (arXiv:1508.06209).
- CP10. P. Porfyrakis, N. L. Tsitsas and D. J. Frantzeskakis, Gap Solitons in Double-Lorentz Nonlinear Metamaterials, 2018 12th International Congress on Artificial Materials for Novel Wave Phenomena, METAMATERIALS 2018, 8534146, pp. 398-400.

Conference Presentations

- P1. J. L. Vomvouridis, D. J. Frantzeskakis and K. Hizanidis, A slow-wave autonomous cyclotron buncher based on anomalous Doppler shift, International Workshop on Acceleration and Radiation Generation in Space and Laboratory Plasmas, August 29-September 4, 1993, Kardamyli, Greece.
- P2. J. L. Vomvouridis, K. Hizanidis, D. J. Frantzeskakis, I. G. Tigelis, C. T. Iatrou and M. A. Hambakis, Cyclotron-resonance effects on an axial velocity electron beam, International Workshop on Acceleration and Radiation Generation in Space and Laboratory Plasmas, August 29-September 4, 1993, Kardamyli, Greece.
- P3. K. Hizanidis and D. J. Frantzeskakis, Dynamical study of coupled nonlinear Schrödinger equations arising in plasma physics, General Conference of the HCM Network Nonlinear Phenomena in Microphysics of Collisionless Plasmas. Application to Space and Laboratory plasmas, May 9-11, 1994, Université Paris-Sud, Orsay, France.
- P4. J. T. Mendonça, L. Oliveira e Silva, F. J. Romeiras, D. J. Frantzeskakis, K. Hizanidis, and J. L. Vomvouridis, Electromagnetic pulse propagation against a moving ionisation front separating a gaseous from a plasma phase, Conference of the HCM Network "Nonlinear Phenomena in Microphysics of Collisionless Plasmas. Application to Space and Laboratory plasmas", May 2-5, 1995, La Badine, Hyeres, France.
- P5. J. L. Vomvouridis, K. Hizanidis, J. T. Mendonça, and D. J. Frantzeskakis, Flash ionization in a cavity by a moderately intense laser beam, International Workshop on 2nd Generation Plasma Accelerators, June 26-30, 1995, Kardamyli, Greece.
- P6. K. Hizanidis, D. J. Frantzeskakis, and C. Polymilis, The perturbed Manakov-Stäckel system, Trans Black Sea Region Symposium on Applied Electromagnetism, April 17-19, 1996, Metsovo, Greece.
- P7. D. J. Frantzeskakis, E. Nistazakis, and K. Hizanidis, Spectral analysis of solitary wave propagation near the zero dispersion point, Trans Black Sea Region Symposium on Applied Electromagnetism, April 17-19, 1996, Metsovo, Greece.
- P8. K. Hizanidis, D.J. Frantzeskakis, and E. Nistazakis, The spectral approach to the solitary and quasi-periodic wave propagation in nonlinear optical fibres, Conference on

- Fluctuations, Nonlinearity and Disorder, September 30-October 4, 1996, Iraclion, Crete, Greece.
- P9. B. A. Malomed, P. G. Kevrekidis, D. J. Frantzeskakis, H. E. Nistazakis, and A. N. Yannacopoulos, Solitons in two-dimensional arrays of $\chi^{(2)}$ waveguides, in: Technical Digest. Summaries of papers presented at the Conference on Lasers and Electro-Optics, Opt. Soc. America, vol.1, 2002, (670 suppl.) p.287 vol.1, 3 Refs. / 7528343.
- P10. D. J. Frantzeskakis, Pattern-forming dynamical instabilities of Bose-Einstein condensates, International Workshop on Mesoscopic Phenomena in Ultracold Matter: From Single Atoms to Coherent Ensembles, October 11-15, 2004, Max Planck Institute for Complex Systems, Dresden, Germany.
- P11. D. J. Frantzeskakis, Generation, Dynamics and Manipulation of Bright and Dark Matter-Wave Solitons, invited talk, Conference on Solitons in Bose-Einstein Condensates, Almagro, Spain, Feb. 9-12, 2005.
- P12. K. M. Mertes, J. W. Merrill, D. S. Hall, R. Carretero-Gonzalez, P. G. Kevrekidis, D. J. Frantzeskakis, and H. E. Nistazakis, Determining s-wave scattering length ratios from binary condensate dynamics, 2006 37th APS Meeting of the Division of Atomic, Molecular and Optical Physics, May 16–20, 2006; Knoxville, TN.
- P13. D. J. Frantzeskakis, Matter-wave dark solitons at finite temperatures, invited talk, Localized Excitations in Nonlinear Complex Systems (LENCOS), Sevilla (Spain) July 14-17, 2009.
- P14. D. J. Frantzeskakis, Matter-wave dark solitons: analytical results and connection to experiments, invited talk, Dynamics in Samos - Workshop on Differential Equations, Dynamical Systems and Applications, Samos, Greece, 31 August-3 September 2010.
- P15. N. L. Tsitsas and D. J. Frantzeskakis, Nonlinear wave propagation in negative index metamaterials, Computational Electromagnetics International Workshop, CEM'11, Izmir, Turkey, August 10-13, 2011 (art. no. 6047334 , pp. 75-79).
- P16. D. J. Frantzeskakis, Dark solitons in single- and multi-component Bose-Einstein condensates, invited talk, Interdisciplinary Workshop on Quantum Mechanics and Dynamical Systems, Granada, Spain, October 8-10, 2011.
- P17. D. J. Frantzeskakis, Atomic dark-bright solitons: theory and experiments, invited talk, 2nd Conference on Localized Excitations in Nonlinear Complex Systems (LENCOS'12), Sevilla (Spain) July 9-12, 2012.
- P18. I. Kourakis, J. Borhanian, V. Saxena, G. P. Veldes, and D. J. Frantzeskakis, Rogue Waves Associated with Circularly Polarized Waves in Magnetized Plasmas, 54th Annual Meeting of the APS Division of Plasma Physics, American Physical Society, Providence, Rhode Island, NY, USA, 29 October – 2 November, 2012.
- P19. D. J. Frantzeskakis, Solitons and vortices in Bose-Einstein condensates: a particle-picture based unifying perspective, invited plenary talk, The 13th International Balcan Workshop on Applied Physics, Constanta, Romania, 4-6 July 2013.
- P20. D. J. Frantzeskakis, Ring dark solitons: from optics to superfluids, invited talk, "Bose-Einstein Condensates in Waveguides - Curvature meets Nonlinearity and Nonlocality" May 14 - 16, 2014, Center for Optical Quantum Technologies, University of Hamburg.

- P21. D. J. Frantzeskakis, Dark-bright solitons in Bose-Einstein condensates: from theory to experiments, invited plenary talk, The 6th Shanghai International Symposium on Nonlinear Science and Applications (Shanghai NSA 2014), June 26-July 1, 2014, Shanghai, China.
- P23. R. Carretero-González, Wenlong Wang, R.M. Caplan, J.D.Talley, P.G. Kevrekidis, R.N. Bisset, C. Ticknor, D.J. Frantzeskakis, and L.A. Collins, Vortex Rings in Bose-Einstein Condensates, NoLineal 2016: International Conference on Nonlinear Mathematics and Physics, Seville, Spain, 7-10 June, 2016.
- P24. D. J. Frantzeskakis, Asymptotics and solitons for defocusing nonlocal nonlinear Schrödinger equations, invited talk, Coherent Structures in PDEs and Their Applications, CMO-BIRS, Oaxaca, Mexico, June 19-June 24, 2016.
- P25. D. J. Frantzeskakis, Solitons in multicomponent nonlinear Schrödinger models, invited talk-keynote speaker, Analysis and Applications of Localized Structures in Nonlinear Media, Lorentz Center, Leiden, the Netherlands, August 28-September 2, 2016.
- P26. D. J. Frantzeskakis, invited talk, Nonlocal nonlinear Schrödinger equation: solitonic patterns from water to light, Modern Mathematical Methods in Science and Technology 2018 (M³ST 2018), Sunday 2 to Tuesday 4 September 2018, Kalamata, Greece.
- P27. I. Kourakis, M. McKerr, I. Seyed Elkamash, D. J. Frantzeskakis, and T. Horikis, Multi-dimensional localized structures in dust-laden nonthermal plasmas: overview of recent results, 43rd COSPAR Scientific Assembly. Held 28 January-4 February 43, 1111 (2021).

Additionally:

- Nine (9) invited talks in the Summer Schools / International Conferences on “*Nonlinear Dynamics: Chaos and Complexity*” (1994, 1996-2002, 2008).
- D. J. Frantzeskakis, Nonlinear waves and solitons in contemporary nonlinear optics, 1st Interdisciplinary Symposium on Nonlinear Problems, 2000, National Technical University of Athens, Greece.
- D. J. Frantzeskakis, Generation, dynamics and manipulation of solitons in Bose-Einstein condensates, *XXIII Pan-Hellenic Conference of Solid State Physics and Material Science*, 2007, Democritos, Athens, Greece.
- Visits and seminars at the University of Heidelberg, Germany (Kirchhoff Institut fuer Physik and Institut fuer Physikalische Chemie), University of Hamburg, Germany, Instituto Superior Technico, Lisbon, Portugal, University of Strathclyde, Glasgow, UK, University of Seville, Spain, University of Granada, Spain, Université du Maine, Le Mans, France, East China Normal University, Shanghai, China, Fudan University, Shanghai, China, University of Ioannina, Greece, University of the Aegean, Greece, the Research Center of Astronomy and Applied Mathematics of the Academy of Athens, Greece, and others.

RESEARCH PROJECTS

Participation in Research Projects as Lead Prime Investigator

- Ten (10) Research Projects funded by the Special Research Account of the NKUA, Athens, Greece (1997-today); project titles:
 1. *Nonlinear dynamics of PT-symmetric systems* (2012-today).
 2. *Solitons in conservative and dissipative systems: from cold atoms to lasers* (2011-today).
 3. *Nonlinear excitations of atomic Bose-Einstein condensates (BECs)* (2008-2012).
 4. *Stability and dynamics of multi-dimensional nonlinear matter-waves* (2006-2007).
 5. *Dynamical instabilities and pattern-formation in BECs* (2004-2005).
 6. *Stability and dynamics in optical and BEC solitons* (2002-2003)
 7. *Interactions of solitons in multi-dimensional systems* (2001-2002).
 8. *Soliton transmission in distributed optical systems* (1999-2000).
 9. *Stability of optical solitons in (2+1)-dimensions in the presence of higher-order effects* (1998-1999).
 10. *Soliton dynamics in optical fiber links with inhomogeneous dispersion* (1997-1998).
- One (1) Research Project “PENED” funded by the General Secretariat of Research and Technology, Ministry of Development; project title:
 - *Dynamics of nonlinear waves in dielectric waveguides with inhomogeneities and discontinuities* (1997-1999).
- One (1) Research Project funded by the Qatar National Research Fund (QNRF); project title:
 - *Rogue Waves: From Oceans to Microwaves and Light* (2016-2018).

Participation in Research Projects as Prime Investigator for NKUA

- One (1) Research Project “PENED” funded by the General Secretariat of Research and Technology, Ministry of Development; project title:
 - *Dynamics of phase transitions and related transient phenomena in alloys* (2000-2002).
- One (1) Research Project funded by the Qatar National Research Fund (QNRF); project title:
 - *Split-ring resonator based nonlinear metamaterials: from few to many, theory and experiments* (2016-2018).

Participation in Research Projects

- National Research Program on *Controlled Thermonuclear Fusion* funded by EURATOM and the General Secretariat of Research and Technology, Ministry of Development, 1999-today.
- Human Capital and Mobility (HCM) Network funded by the European Union entitled "*Nonlinear Phenomena in Microphysics of Collisionless Plasmas. Application to Space and Laboratory plasmas*", 1993-1995.
- Research Project "PENED", funded by the General Secretariat of Research and Technology, Ministry of Industry, Research and Technology, entitled "*Magnetolectric Materials, Nonlinear Dielectric Materials with Fractal Stratification of their Properties: Scattering and Propagation of Electromagnetic Waves (Microwaves - Optical Waves)*", 1994-1995.
- Research Project of the 12th Directorate of the EC Committee, "*Electrostatic and Resistive Effects on the Quality of Gyrotron beams*", 1992.
- Research Project RACE 2015 of the EC Committee "*Advanced Research on Transmission and Enhanced Multi-Gigabit Interconnection by Solitons*" (ARTEMIS), 1992.
- Research Project of the 12th Directorate of the EC Committee, "*An Electron Cyclotron Maser with Axial Initial Electron Velocity*", 1991.
- Research Project PENED, funded by the General Secretariat of Research and Technology, Ministry of Industry, Research and Technology, entitled "*Development of an Optical Transmitter-Receiver 1.5 Gbits/s and Analysis of Nonlinear and Birefringent Optical Waveguides*", 1989.

Additional research activities funded by two NSF (USA) programs:

- "Modeling, Analysis, Computation and Experiments of Two-Component Bose-Einstein Condensates", NSF-DMS-0806762, 2008-2010.
- "CAREER: Solitons in Bose-Einstein Condensates: Generation, Manipulation and Pattern Formation", NSF-DMS-0349023, 2004-2006.

ADMINISTRATIVE RESPONSIBILITIES

- Elected representative of the Applied Physics and Electronics Sections to the General Assembly of the Department of Physics (2000, 2003, 2004, 2006, 2012-today).
- Member of the Committee for the reform of the curriculum of Postgraduate (M.Sc.) Degrees on Radio-Electronics and Electronic Automation for the Department of Physics (2000-2001 and 2004-2006).
- Member and Secretary of the Undergraduate Program Committee, responsible for the reform of the curriculum of the Department of Physics (2003-present).
- Member of the Coordinating Committee of graduate studies of the Department of Physics (2004, 2005, 2008-today).
- Head (2014-today) [and member (2009-2013)] of the Evaluation Committee of the Department of Physics.

- Member of various Committees of the Applied Physics Section, including the Committee for the presentation of the scientific activities of the Section, Master-Plan Committee, and others.
- Member or Head of Committee Rapporteurs for Department positions at the ranks of Professor, Associate Professor, and Tenure of four Department members at the rank of Assistant Professor in the Department of Physics, NKUA, as well as for Department positions at the ranks of Assistant and Associate Professors in the Department of Physics at the Aristotle University of Thessaloniki.
- Member of the Electoral Boards (equivalent of hiring committees) for Department positions in the Faculties of Physics at NKUA, Aristotle University of Thessaloniki and University of Patras, and member of a Committee for promotion to grade-B Researcher (equivalent to Associate Professor) at the National Centre of Scientific Research “Demokritos”, Athens, Greece.

SCIENTIFIC SERVICES AND ACTIVITIES

- Member of the scientific committee of the International Conferences of *Nonlinear Dynamics* held in Greece (every year, 1996-today).
- Co-organizer and co-chair of the 11th Summer School / International Conference on *Nonlinear Dynamics: Complexity and Chaos*, 1998, Livadeia, Greece.
- Member of the organizing committee of the International Workshop on *Dynamics and Complexity of Interfaces and Applications to Technology*, 2001, Athens, Greece.
- Co-Organizer and chair of the mini-symposium “*Dynamical Systems*”, 12th Pan-Hellenic Conference of *Mathematical Analysis*, 2008, Athens, Greece.
- Co-organizer and co-chair of the mini-symposium “*Nonlinear waves in periodic media*”, SIAM Conference on *Nonlinear Waves and Coherent Structures*, 2008, Rome, Italy.
- Co-organizer of the special session “*Nonlinear Schrödinger equations and their applications*”, 8th AIMS American Institute of Mathematical Sciences) Conference on *Dynamical Systems, Differential Equations and Applications*, 2010, Dresden, Germany.
- Member of the Scientific Committee of the International Conference: “*Localized Excitations in Nonlinear Complex Systems*” (LENCOS'12), Sevilla (Spain) July 9-12, 2012.
- Guest Editor of the Special Issue of *Discrete and Continuous Dynamical Systems – S* (DCDS-S), on the occasion of the conference “*Localized Excitations in Nonlinear Complex Systems*” (LENCOS), Sevilla, Spain, 2009.
- Guest Editor of the Special Volume of *Romanian Reports in Physics* entitled “*Bose-Einstein Condensation: Twenty Years After*”, Volume 67, Number 1, 2015.
- Member of the Editorial Board of *Advances in Mathematical Physics*.
- Referee (≈ 40 papers/year) for more than 40 physics and mathematics journals: *Physical Review Letters*, *Physical Review A*, *Physical Review E*, *Nature Physics*, *Scientific Reports (Nature)*, *Journal of Physics A*, *Journal of Physics B*, *Journal of Physics D*, *Physica D*, *Journal of Mathematical Physics*, *Chaos*, *Nonlinearity*, *Europhysics Letters*,

Physics Letters A, Annals of Physics, New Journal of Physics, Optics Letters, Optics Express, Journal of the Optical Society of America B, Optics Communications, IEEE Journal of Quantum Electronics, IEEE Journal of Selected Topics on Quantum Electronics, Journal of Optics, European Physical Journal B, European Physical Journal D, European Physical Journal Plus, Physica Scripta, Optics and Laser Technology, Journal of Atomic and Molecular Physics, Advances in High Energy Physics, Central European Journal of Physics, Studies in Applied Mathematics, Mathematics and Computers in Simulation, Journal of Mathematical Analysis and Applications, Abstract and Applied Analysis, Advances in Mathematical Physics, Journal of Applied Mathematics, Applied Mathematics and Computation, International Journal of Partial Differential Equations, Mathematical Methods in Applied Sciences, Applied Sciences, Journal of Mathematics.

- Project evaluator for *National Science Foundation (USA)*, *Israel Science Foundation (Israel)*, *United States-Israel Bi-national Science Foundation*, National Research Foundation of South Africa, *Research Promotion Foundation of Cyprus*, *Greek Ministry of Education*, and *General Secretariat of Research and Technology of Greece*.
- Visiting Professor: Université du Maine, Le Mans, France (November 2013, March 2014); East China Normal University, Shanghai, China (June-July 2014).
- Member of the Technical Chamber of Greece.