

CURRICULUM VITAE**Avner Peleg****Address**

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University at Buffalo, SUNY	Fax: 716-645-5039
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Academic appointments

1. Assistant Professor, Department of Mathematics, State University of New York at Buffalo, Buffalo, NY, USA (2007-present).
2. Postdoctoral Research Associate, Arizona Center for Mathematical Sciences (ACMS) and Department of Mathematics, The University of Arizona, Tucson, AZ, USA (2004-2007).
3. Postdoctoral Research Associate, Center for Nonlinear Studies (CNLS) and T-7 (Mathematical Modeling and Analysis Group), Los Alamos National Laboratory, Los Alamos, NM, USA (2001-2004).
4. Teaching Assistant, Physics Department, The Hebrew University of Jerusalem, Jerusalem, Israel (1995-2001).

Academic education

- (1) 1997-2001, The Hebrew University of Jerusalem, Jerusalem, Israel. Ph.D. in Physics. Thesis topic: Phase ordering in interface-controlled disordered systems with a global conservation law. Thesis advisor: Prof. Baruch Meerson.
- (2) 1994-1997, The Hebrew University of Jerusalem, Jerusalem, Israel. M.Sc. in Physics. Thesis topic: Total dielectronic recombination rate coefficient for Ar-like tungsten. Thesis advisor: Prof. J.L. Schwob.
- (3) 1987-1990, Israel Institute of Technology (Technion), Haifa, Israel. B.Sc. in Physics (Cum Laude).

Additional employment information

Military service: 1990-1995.

Academic awards and distinctions

- (1) 1988, 1989, The Dean Prize, The Technion, Haifa, Israel.
- (2) 1997, 1998, Shenkar Scholarship, The Hebrew University, Jerusalem, Israel.
- (3) 2000, Hachmi scholarship, The Hebrew University, Jerusalem, Israel.
- (4) 2001, Racah Award, The Hebrew University, Jerusalem, Israel.
- (5) 2006, SIAM Post-Doc/Early Career Travel Award (to attend the SIAM Conference on Nonlinear Waves and Coherent Structures, Seattle, Washington, USA, September 9-12, 2006).
- (6) Selected as one of 40 participants in the OSA Incubator and NSF Workshop on Scaling Terabit Networks (Washington, DC, USA, September 19-20, 2013). The selection was based on submission and review of a three-page white paper.

List of publications

- (33) A. Peleg, Particle simulations for pulse propagation in multichannel optical fiber communication systems, in preparation.
- (32) Q.M. Nguyen, A. Peleg, and T.P. Tran, Robust transmission stabilization and dynamic switching in broadband hybrid waveguide systems with nonlinear gain and loss, submitted for publication, arXiv:1405.7071.
- (31) A. Peleg, Q.M. Nguyen, and P. Glenn, Many-body interaction in fast soliton collisions, Phys. Rev. E, Vol. 89, 043201 (2014), [arXiv:1306.4371].
- (30) D. Chakraborty, A. Peleg, and J.-H. Jung, Stable long-distance propagation and on-off switching of colliding soliton sequences with dissipative interaction, Phys. Rev. A, Vol. 88, 023845 (2013), [arXiv:1307.0878].
- (29) A. Peleg and Y. Chung, Cross-talk dynamics of optical solitons in multichannel waveguide systems with a Ginzburg-Landau gain-loss profile, Phys. Rev. A, Vol. 85, 063828 (2012).
- (28) A. Peleg and Y. Chung, Interplay between bit pattern randomness, delayed Raman response, and cross phase modulation in massive multichannel optical fiber transmission lines, Opt. Commun., Vol. 285, 1429 (2012).
- (27) A. Peleg, Q.M. Nguyen, and Y. Chung, Cross-talk dynamics of optical solitons in a broadband Kerr nonlinear system with weak cubic loss, Phys. Rev. A, Vol. 82, 053830 (2010).

- (26) Q.M. Nguyen and A. Peleg, Resolving the Raman-induced cross frequency shift in fast optical soliton collisions, *J. Opt. Soc. Am. B*, Vol. 27, 1985 (2010).
- (25) Q.M. Nguyen and A. Peleg, Deterministic Raman crosstalk effects in amplified wavelength division multiplexing transmission, *Opt. Commun.*, Vol. 283, 3500 (2010).
- (24) A. Peleg, Y. Chung, T. Dohnal, and Q.M. Nguyen, Diverging probability density functions for flat-top solitary waves, *Phys. Rev. E*, Vol. 80, 026602 (2009).
- (23) A. Peleg, Energy exchange in fast optical soliton collisions as a random cascade model, *Phys. Lett. A*, Vol. 373, 2734 (2009).
- (22) Y. Chung and A. Peleg, Monte Carlo simulations of pulse propagation in massive multichannel optical fiber communication systems, *Phys. Rev. A*, Vol. 77, 063835 (2008).
- (21) A. Peleg and J.V. Moloney, Scintillation reduction by use of multiple Gaussian laser beams with different wavelengths, *IEEE Photon. Technol. Lett.*, Vol. 19, 883 (2007).
- (20) P. Polynkin, A. Peleg, L. Klein, T. Rhoadarmer, and J.V. Moloney, Optimized multi-emitter beams for free-space optical communications through turbulent atmosphere, *Opt. Lett.*, Vol. 32, 885 (2007).
- (19) A. Peleg, Intermittent dynamics, strong correlations, and bit-error-rate in multichannel optical fiber communication systems, *Phys. Lett. A*, Vol. 360, 533 (2007).
- (18) A. Peleg and J.V. Moloney, Scintillation index for two Gaussian laser beams with different wavelengths in weak atmospheric turbulence, *J. Opt. Soc. Am. A*, Vol. 23, 3114 (2006).
- (17) A. Peleg, T. Dohnal, and Y. Chung, Effects of dissipative disorder on front formation in pattern forming systems, *Phys. Rev. E*, Vol. 72, 027203 (2005).
- (16) Y. Chung and A. Peleg, Strongly non-Gaussian statistics of optical soliton parameters due to collisions in the presence of delayed Raman response, *Nonlinearity*, Vol. 18, 1555 (2005).
- (15) M.V. Sapozhnikov, A. Peleg, B. Meerson, I.S. Aranson, and K.L. Kohlstedt, Far-from-equilibrium Ostwald ripening in electrostatically driven granular powders, *Phys. Rev. E*, Vol. 71, 011307 (2005).
- (14) A. Peleg, Lognormal distribution for pulse amplitudes due to Raman cross talk in wavelength division multiplexing soliton transmission, *Opt. Lett.*, Vol. 29, 1980 (2004).

- (13) J. Soneson and A. Peleg, Effect of quintic nonlinearity on soliton collisions in optical fibers, *Physica D*, Vol. 195, 123 (2004).
- (12) V. Chernyak, M. Chertkov, I. Kolokolov, and A. Peleg, Outage probability for soliton transmission, *Europhys. Lett.*, Vol. 66, 499 (2004).
- (11) A. Peleg, M. Chertkov, and I. Gabitov, Inelastic interchannel collisions of pulses in optical fibers in the presence of third order dispersion, *J. Opt. Soc. Am. B*, Vol. 21, 18 (2004).
- (10) A. Peleg and Y. Chung, Stationary solutions to the nonlinear Schrödinger equation in the presence of third order dispersion, *J. Phys. A*, Vol. 36, 10039 (2003).
- (9) A. Peleg, M. Chertkov, and I. Gabitov, Interchannel interaction of optical solitons, *Phys. Rev. E*, Vol. 68, 026605 (2003).
- (8) M. Conti, B. Meerson, A. Peleg, and P.V. Sasorov, Phase ordering with a global conservation law: Ostwald ripening and coalescence, *Phys. Rev. E*, Vol. 65, 046117 (2002).
- (7) A. Peleg, M. Conti and B. Meerson, Normal scaling in globally conserved interface-controlled coarsening of fractal clusters, *Phys. Rev. E*, Vol. 64, 036127 (2001).
- (6) A. Peleg, B. Meerson, A. Vilenkin, and M. Conti, Area-preserving dynamics of a long slender finger by curvature: A test case for the globally conserved phase ordering, *Phys. Rev. E*, Vol. 63, 066101 (2001).
- (5) A. Peleg and B. Meerson, Dynamics of fractal dimension during phase ordering of a geometrical multifractal, *Phys. Rev. E*, Vol. 62, 1764 (2000).
- (4) A. Peleg and B. Meerson, Size distribution and the Hausdorff-Besicovitch dimension of two-scale Cantor dusts, *Phys. Rev. E*, Vol. 59, 1238 (1999).
- (3) P. Mandelbaum, E. Behar, R. Doron, M. Cohen, A. Peleg, and J.L. Schwob, Dielectronic recombination and excitation-autoionization in highly ionized heavy elements, *Atomic processes in Plasmas: Eleventh APS Topical Conference*, 256 (1998).
- (2) A. Peleg, E. Behar, P. Mandelbaum, and J.L. Schwob, Total dielectronic recombination rate coefficient for Ar-like tungsten, *Phys. Rev. A*, Vol. 57, 3493 (1998).
- (1) E. Behar, A. Peleg, R. Doron, P. Mandelbaum, and J.L. Schwob, Dielectronic recombination of Ni-, Cu-, and Ar-like tungsten and barium through the low inner-shell excited configurations including collision processes, *J. Quant. Spectrosc. Radiat. Transfer*, Vol. 58, 449 (1997).

Teaching experience

(1) **Graduate courses** taught at The Department of Mathematics, SUNY Buffalo:

Spring 2008 - Reading and Conference (MTH801);

Fall 2008 - Advanced Ordinary Differential Equations I (MTH645), Reading and Conference (MTH801);

Spring 2009 - Stochastic Processes (MTH563), Graduate Research (MTH807);

Fall 2009 - Fundamentals of Applied Mathematics I (MTH543), Graduate Research (MTH807);

Spring 2010 - Advanced Ordinary Differential Equations II (MTH646), Graduate Research (MTH807);

Spring 2011 - Stochastic Processes (MTH563);

Fall 2011 - Survey of Partial Differential Equations (MTH518);

Fall 2012 - Fundamentals of Applied Mathematics I (MTH543);

Spring 2013 - Survey of Partial Differential Equations (MTH518).

Fall 2013 - Fundamentals of Applied Mathematics I (MTH543), Advanced Ordinary Differential Equations I (MTH645).

Spring 2014 - Fundamentals of Applied Mathematics II (MTH544).

(2) **Undergraduate courses** taught at The Department of Mathematics, SUNY Buffalo:

Fall 2007 - Introduction to Differential Equations (MTH306) (two sections);

Spring 2008 - Introduction to Differential Equations (MTH306);

Fall 2008 - Introduction to Differential Equations (MTH306), Independent Study (MTH499) (for Honors Thesis guidance);

Spring 2009 - Stochastic Processes (MTH463);

Fall 2009 - Fundamentals of Applied Mathematics I (MTH443), Introduction to Differential Equations (MTH306);

Spring 2011 - Introduction to Differential Equations (MTH306);

Fall 2011 - Survey of Partial Differential Equations (MTH418), Introduction to Differential Equations (MTH306);

Fall 2012 - Fundamentals of Applied Mathematics I (MTH443), Introduction to Differential Equations (MTH306);

Spring 2013 - Survey of Partial Differential Equations (MTH418), Introduction to Differential Equations (MTH306).

Fall 2013 - Fundamentals of Applied Mathematics I (MTH443).

Spring 2014 - Fundamentals of Applied Mathematics II (MTH444), Introduction to Differential Equations (MTH306).

(3) Courses taught at The Department of Mathematics, The University of Arizona, Tucson, AZ: Calculus I (Math125), spring 2006.

(4) Practice classes given in the following courses at The Hebrew University of Jerusalem, Jerusalem, Israel (1997-2001):

Mechanics and Special Relativity – Honors Program (77160); Thermal Physics, and Thermal Physics – Honors Program (77152 and 77166); Plasma Physics (77611); General Physics: Electricity and Waves for Biology Students (77304).

Mentoring

(1) Graduate students supervised at SUNY Buffalo:

(a) Quan M. Nguyen, 2007-2011 (Ph.D.).

Thesis title: Effects of randomness, dissipation and interaction on solitons of the cubic nonlinear Schrödinger equation and related nonlinear wave models.

Current position: Assistant Professor (tenure-track), Department of Mathematics, International University, Vietnam National University at Ho Chi Minh City, Vietnam.

(b) Kathryn (Kay) Newton, 2010 (non-research Master project).

Project title: Analogy between energy exchange in soliton collisions and random cascade models.

(2) Undergraduate students supervised at SUNY Buffalo:

(a) Yingrui Liu, 2008–2009 (Senior Honors Thesis).

Thesis title: Particle simulations for pulse propagation in optical fiber telecommunication systems.

Position after graduation: Graduate Student, Program in Industrial Engineering, Ohio State University. Current position: Advisor for quality and regulatory affairs at Cardinal Health.

(b) Paul Glenn, 2012 (Honors Thesis).

Thesis title: Many-body interaction in fast collisions of NLS solitons.

Current status: Fourth-year undergraduate student in mathematical physics at UB; affiliated with UB's honors college.

(3) Mentor for Josh Soneson and Tomas Dohnal (summer graduate students), Summer Graduate Research Associate Program, Los Alamos National Laboratory, Los Alamos, NM, summers of 2003 and 2004.

Conferences/workshops organized

1. Member of the organizing committee, Advances in Raman-Based, High-Speed Photonics: Raman Amplifiers, Data Transmission, and Signal Processing, Los Alamos, NM, USA, February 3-5, 2003.
2. Organizer (with Y. Chung) of a mini-symposium on Recent Progress in Fiber Optics, in the SIAM Conference on Applications of Dynamical Systems, Snowbird, UT, USA, May 27-31, 2003.
3. Organizer (with Y. Chung) of a mini-symposium on Nonlinearities and Randomness in High-speed Optical Fiber Communication Systems, in the SIAM Conference on Nonlinear Waves and Coherent Structures, Philadelphia, PA, USA, August 16-19, 2010.
4. Main organizer (with J.-H. Jung), The Second New York Conference on Applied Mathematics, University at Buffalo, Buffalo, NY, USA, April 30, 2011.

Presentations in conferences

1. Gordon Research Conference on Fractals, Il Ciocco - Barga, Italy, May 10 - 15, 1998 [Title of poster presented: "Hausdorff-Besicovitch Dimension of a continuous fractal set generated from two-scale objects"].
2. The 21st CNLS Annual Conference: Principles of Soft Matter, Santa Fe, NM, USA, May 21-25, 2001 [Title of poster presented: "Normal scaling in globally conserved phase ordering of fractal clusters"].
3. Boulder School for Condensed Matter and Materials Physics: Nonequilibrium Statistical Physics, Boulder, CO, USA, July 2-27, 2001 [A one hour seminar on "Normal scaling in globally conserved interface-controlled coarsening of fractal clusters" was given, and a poster with the same title was presented].
4. Arizona Days 2002, CNLS/LANL, Los Alamos, NM, USA, February 1-2, 2002 [Title of talk given: "Globally conserved interface-controlled relaxation of fractal clusters"].

5. The Annual APS March Meeting 2003, Austin, TX, USA, March 3-7, 2003 [Title of poster presented: “Inelastic collisions between non-ideal solitons in optical fibers”].
6. SIAM Conference on Applications of Dynamical Systems, Snowbird, UT, USA, May 27-31, 2003 [Title of talk given: “Inter-channel interactions between non-ideal solitons”].
7. Gordon Research Conference (GRC) on Nonlinear Optics and Lasers, Colby-Sawyer College, New London, NH, USA, Jul 27-Aug 1, 2003 [Title of poster presented: “Effects of perturbations on collisions between short pulses in optical fibers”].
8. Frontiers in Optics, The 87th OSA Annual Meeting, Tucson, AZ, USA, October 5-9, 2003 [Title of talk given: “Inelastic collisions of solitons in optical fibers”.]
9. The AMS 2003 Southeastern Section Meeting, Chapel Hill, NC, USA, October 24-25, 2003 [Title of **invited** talk: “Effects of perturbations on collisions between optical solitons”.]
10. The Argonne Theory Institute Workshop: Fundamentals of Self-Assembly in Complex Materials: Self-Organization and Continuum Models, Argonne National Laboratory, Argonne, IL, USA, August 26-27, 2004 [Title of **invited** talk: "Ostwald ripening and coalescence in globally conserved interface-controlled coarsening".]
11. Frontiers in Optics, The 88th OSA Annual Meeting, Rochester, NY, USA, October 10-14, 2004 [Title of talk: “Emergence of lognormal distribution for pulse amplitudes due to Raman cross talk in WDM soliton transmission”.]
12. The Annual APS March Meeting 2005, Los Angeles, CA, USA, March 21-25, 2005 [Title of talk: “Effect of weak dissipative disorder on front formation in pattern forming systems”.]
13. The Annual APS March Meeting 2005, Los Angeles, CA, USA, March 21-25, 2005 [Title of talk: “Strongly non-Gaussian statistics of optical soliton parameters in multichannel transmission due to delayed Raman response”.]
14. The Binational Spring School on Nonlinear Optics and Multiscale Photonics, Tucson, AZ, USA, April 1-3, 2005 [Title of **invited** talk: “Effects of dissipative disorder on nonlinear coherent patterns: from soliton collisions in optical fibers to diverging distributions in pattern formation”.]
15. The 2005 AFOSR Workshop on Nonlinear Optics, Tucson, AZ, USA, October 4-5, 2005 [Title of poster: “Propagation of multiple Gaussian beams with different wavelengths through atmospheric turbulence”.]

16. SIAM Conference on Nonlinear Waves and Coherent Structures, Seattle, WA, USA, September 9-12, 2006 [Title of **invited** talk: "Intermittent dynamics in massive multichannel optical fiber communication systems".]
17. The 2006 AFOSR Workshop on Nonlinear Optics, Tucson, AZ, USA, October 17-18, 2006 [Title of poster: "Using optical beams with controlled degree of spatial coherence for communicating through turbulent atmosphere: theory and experiment".]
18. Photonics West 2007 - SPIE conference on Lasers and Applications in Science and Engineering, San Jose, CA, USA, January 20–25 2007 [Title of talk given: "Scintillation index for N Gaussian laser beams with different wavelengths in weak atmospheric turbulence".]
19. The AMS 2008 Spring Eastern Section Meeting, Courant Institute, New York University, New York, NY, USA, March 15-16, 2008 [Title of talk given: "Raman-induced energy exchange between optical solitons as a random cascade model"].
20. SIAM Conference on Applications of Dynamical Systems, Snowbird, UT, USA, May 17-21, 2009 [Title of talk: "Diverging probability density functions in stochastic nonlinear wave equations"].
21. 2009 SIAM Annual Meeting, Denver, CO, USA, July 6-10, 2009 [Title of **invited** talk: "The effects of stimulated Raman scattering on pulse propagation in massive multichannel fiber optics communication systems"].
22. 2009 SIAM Annual Meeting, Denver, CO, USA, July 6-10, 2009 [Title of **invited** talk (presented by Quan M. Nguyen): "Dynamics of average Raman crosstalk effects in multichannel optical fiber communication systems"].
23. New York Conference on Applied Mathematics, Rochester Institute of Technology, Rochester, NY, USA, October 17, 2009 [Title of talk: "Dynamics of pulse parameters in multichannel optical fiber communication systems"].
24. New York Conference on Applied Mathematics, Rochester Institute of Technology, Rochester, NY, USA, October 17, 2009 [Title of poster (presented by Quan M. Nguyen): "A model of Raman crosstalk effects in massive amplified WDM transmission"].
25. The 2010 Optical Fiber Communications Conference (OFC), San Diego, CA, USA, March 21-25, 2010 [Title of talk: "Stability of amplified DPSK WDM transmission against Raman crosstalk effects"].

26. SIAM Conference on Nonlinear Waves and Coherent Structures, Philadelphia, PA, USA, August 16-19, 2010 [Title of talk: “Impact of Raman crosstalk on OOK and DPSK massive multichannel transmission systems”].
27. SIAM Conference on Nonlinear Waves and Coherent Structures, Philadelphia, PA, USA, August 16-19, 2010 [Title of talk (presented by Quan M. Nguyen): “Resolving the Raman-induced cross-frequency shift in soliton collisions”].
28. The 2011 Joint Mathematics Meetings, New Orleans, LA, USA, January 6-9, 2011 [Title of **invited** talk: “Population dynamics models for pulse dynamics in broadband fiber optics communication systems”].
29. SIAM Conference on Uncertainty Quantification, Raleigh, NC, USA, April 2-5, 2012 [Title of **invited** talk: “Analysis and simulations of a perturbed stochastic nonlinear Schrödinger equation for pulse propagation in broadband optical fiber lines”].
30. SIAM Conference on Nonlinear Waves and Coherent Structures, Seattle, WA, USA, June 13-16, 2012 [Title of talk: “Crosstalk dynamics of optical solitons in broadband optical waveguide systems”.]
31. SIAM Conference on Nonlinear Waves and Coherent Structures, Seattle, WA, USA, June 13-16, 2012 [Title of poster (presented by Paul Glenn): “Many-body interaction in fast collisions of NLS solitons”.]
32. Frontiers in Optics, The 96th OSA Annual Meeting, Rochester, NY, USA, October 14-18, 2012 [Title of talk: “Stable energy equalization of solitons in WDM waveguide systems with cubic loss”.]
33. SIAM Conference on Analysis of Partial Differential Equations, Lake Buena Vista, FL, USA, December 7-10, 2013 [Title of talk: “Relating collision-induced dynamics of soliton sequences of coupled-NLS equations and dynamics in Lotka-Volterra models”.]
34. The 2014 Joint Mathematics Meetings, Baltimore, MD, USA, January 15-18, 2014 [Title of talk: “Large-scale particle dynamics simulations for pulse propagation in broadband optical fiber communication networks”.]

Other Oral Presentations

1. “Coarsening with a global conservation law: Ostwald ripening and coalescence”, statistical physics working seminar, CNLS/LANL, Los Alamos, NM, February 26 2002.

2. "Effects of perturbations on soliton collisions in optical fibers", CNLS colloquium, CNLS/LANL, Los Alamos, NM, July 21 2003.
3. "Effects of perturbations on collisions between optical solitons", dynamical systems seminar, Department of Applied Mathematics, University of Colorado, Boulder, CO, October 23 2003.
4. "Inelastic collisions between solitons in optical fibers", a joint seminar for the School of Optics (CREOL) and the Department of Mathematics, University of Central Florida, FL, November 7 2003.
5. "Effect of Raman induced cross talk on soliton transmission in fiber optics communication systems", CNLS seminar, CNLS/LANL, Los Alamos, NM, April 8 2004.
6. "Emergence of lognormal distribution of pulse amplitudes due to Raman cross talk in multi-channel soliton transmission", nonlinearity, randomness and waves seminar, Department of Mathematics, University of Arizona, Tucson, AZ, May 5 2004.
7. "Effects of weak dissipative disorder in certain optical fiber and pattern forming systems", CNLS seminar on statistical problems in nonlinear wave dynamics, CNLS/LANL, Los Alamos, NM, August 12 2004.
8. "Emergence of dissipative disorder due to collisions of optical solitons in the presence of delayed Raman response", colloquium, Department of Mathematics and Statistics, University of New Mexico, Albuquerque, NM, September 16 2004.
9. "Emergence of dissipative disorder due to collisions of optical solitons in the presence of delayed Raman response", nonlinearity, randomness and waves seminar, Department of Mathematics, University of Arizona, Tucson, AZ, October 20 2004.
10. "Effects of dissipative disorder on nonlinear coherent patterns: from soliton collisions in optical fibers to diverging distributions in pattern formation", Optical Fiber Communications Laboratory seminar, Department of Computer Science and Electrical Engineering, University of Maryland Baltimore County, Baltimore, MD, May 2 2005.
11. "Effects of dissipative disorder on nonlinear coherent patterns: from soliton collisions in optical fibers to diverging distributions in pattern formation", AMO physics seminar, Department of Physics, Texas A&M University, College Station, TX, May 10 2005.
12. "Effects of dissipative disorder on nonlinear coherent patterns: from soliton collisions in optical fibers to diverging distributions in pattern formation", Arizona Center for Mathematical Sciences seminar, The University of Arizona, Tucson, AZ, May 13 2005.

13. "Intermittent dynamics in massive multichannel optical fiber communication systems", nonlinearity, randomness and waves seminar, Department of Mathematics, University of Arizona, Tucson, AZ, September 20 2006.
14. "Effects of delayed Raman response on dispersion-managed solitons in multichannel optical fiber communication systems", nonlinearity, randomness and waves seminar, Department of Mathematics, University of Arizona, Tucson, AZ, October 4 2006.
15. "Intermittent dynamics in massive multichannel optical fiber communication systems", Colloquium, Department of Mathematics, Southern Methodist University, Dallas, TX, November 8 2006.
16. "Intermittent dynamics in massive multichannel optical fiber communication systems", Colloquium, Department of Mathematics, University at Buffalo, SUNY, Buffalo, NY, January 30 2007.
17. "Energy exchange in fast soliton collisions as a random cascade model, Part I", applied mathematics seminar, Department of Mathematics, University at Buffalo, SUNY, Buffalo, NY, November 6 2007.
18. "Energy exchange in fast soliton collisions as a random cascade model, Part II", applied mathematics seminar, Department of Mathematics, University at Buffalo, SUNY, Buffalo, NY, April 8 2008.
19. "Pulse dynamics in broadband fiber optics communication systems", Colloquium, Department of Mathematical Sciences, Rensselaer Polytechnic Institute, Troy, NY, May 3 2010.
20. "Pulse dynamics in broadband fiber optics communication systems", Colloquium, Center for Nonlinear Studies (CNLS), Los Alamos National Laboratory, Los Alamos, NM, June 7 2010.
21. "Pulse dynamics in broadband fiber optics communication systems", photonics research group seminar, School of Engineering and Applied Science, Aston University, Aston Triangle, Birmingham, United Kingdom, July 11 2010.
22. "Pulse dynamics in broadband fiber optics communication systems", Colloquium, Department of Mathematics, Southern Methodist University, Dallas, TX, September 22 2010.

23. “Lotka-Volterra models for pulse dynamics in broadband optical waveguide systems”, applied analysis and computation seminar, Department of Mathematics and Statistics, University of Massachusetts Amherst, Amherst, MA, September 30 2011.
24. “Interplay between bit-pattern randomness and pulse collisions in broadband fiber optics transmission lines”, probability seminar, Department of Mathematics, Cornell University, Ithaca, NY, March 12 2012.
25. “Particle simulations for propagation of multiple pulse sequences in broadband optical waveguide systems”, applied mathematics seminar, Department of Mathematics, University at Buffalo, SUNY, Buffalo, NY, February 11 2014.

Service

- (1) Editorial board member, JSM Mathematics and Statistics, 2014-present.
- (2) Referee for the following journals: Physical Review Letters, Physical Review A, Physical Review E, Physica D, Journal of Physics A: Mathematical and Theoretical, Optics Letters, Optics Express, Journal of the Optical Society of America B, Journal of Optics, Optics Communications, IEEE Photonics Technology Letters, Physica Scripta, Optical Fiber Technology, Journal of Mathematical Physics.
- (3) Referee of grant proposals for United States-Israel Binational Science Foundation.
- (4) Referee on a review panel for Elsevier for evaluating the need to publish a new edition for the book “An Introduction to Stochastic Modeling” (third edition) by H.M. Taylor and S. Karlin (summer 2009).
- (5) Member of the following departmental committees, Department of Mathematics, SUNY Buffalo: Colloquium Committee (2007-present), Applied Mathematics Committee (2007-present), First Qualifying Exam Committee (2008-2011), ODE/PDE Second Qualifying Exam Committee (2011-present), Undergraduate Studies Committee (2009-present), Proctors Committee (2007-2008).
- (6) Chair of Ph.D. Committee for Quan M. Nguyen (2009-2011), Department of Mathematics, SUNY Buffalo.
- (7) Member of Ph.D. committees for the following graduate students, Department of Mathematics, SUNY Buffalo: Danhua Wang (2008-2011), Tuan Le (2009-2013).
- (8) Member of an ad hoc committee for reviewing the textbook in the undergraduate differential equations course (winter 2009).

Membership in professional organizations

- (1) Society of Industrial and Applied Mathematics (SIAM), member, 2009-present.
- (2) The Optical Society of America (OSA), member, 2003-2004, 2010-present.

Research work featured in the media

- (1) UB Reporter (SUNY Buffalo): Formulating the future of broadband, 02/14/2008:
<http://www.buffalo.edu/ubreporter/archives/vol39/vol39n21/articles/PelegFeature.html>.
- (2) Los Alamos National Laboratory Daily News Bulletin, Los Alamos, NM, USA,
09/15/2004: <http://www.lanl.gov/orgs/pa/newsbulletin/2004/09/15/text04.shtml>.
- (3) The Monthly Publication of SPIE: The International Society for Optical Engineering,
Amherst, NH, USA, 09/16/2004:
http://oemagazine.com/newscast/2004/091604_newscast01.html.
- (4) PhysOrg.com, 09/15/2004: <http://www.physorg.com/news1168.html>.

References

1. Prof. Ildar Gabitov, Department of Mathematics, The University of Arizona, Tucson, AZ 85721, USA.
E-mail: gabitov@math.arizona.edu Phone: 520-6268853
Alternative e-mail: ildar.gabitov@gmail.com
2. Prof. Alejandro B. Aceves, Department of Mathematics, Southern Methodist University, Dallas, TX 75275, USA.
E-mail: aaceves@smu.edu Phone: 214-768-4907
3. Prof. Sergei K. Turitsyn, Director, Photonics Research Group, School of Engineering and Applied Science, Aston University, Aston Triangle, B4 7ET, UK.
E-mail: s.k.turitsyn@aston.ac.uk Phone: +44-121-359-3611
4. Dr. Michael (Misha) Chertkov, T-4, Theoretical Division, Los Alamos National Laboratory, Los Alamos, NM 87545, USA.
E-mail: chertkov@lanl.gov Phone: 505-6658119
5. Prof. Baruch Meerson, The Racah Institute of Physics, The Hebrew University of Jerusalem, Jerusalem, 91904, Israel.
E-mail: meerson@cc.huji.ac.il Phone: 972-2-6584470

6. Prof. Brian Spencer, Department of Mathematics, University at Buffalo, SUNY,
Buffalo, NY 14260, USA.

E-mail: spencerb@buffalo.edu Phone: 716- 645-8805

Note: this reference letter concerns both research and teaching.

7. Prof. Stefan Wabnitz, Department of Information Engineering, Università di Brescia,
Brescia 25123, Italy.

E-mail: stefano.wabnitz@ing.unibs.it Phone: +39 0303715846