

## Mark Bashkansky

Optical Physics Branch  
Optical Sciences Division  
Naval Research Laboratory  
Washington DC 20375

Phone: (202) 767-2512 Email: [bashkansky@nrl.navy.mil](mailto:bashkansky@nrl.navy.mil) [markbash@yahoo.com](mailto:markbash@yahoo.com)

### Education:

DEGREE: Ph.D., May, 1988 MAJOR: Physics  
PROGRAM: Columbia University Graduate School of Arts and Sciences, New York, NY, 10027  
DEGREE: MS, May, 1984 MAJOR: Physics  
PROGRAM: Columbia University Graduate School of Arts and Sciences, New York, NY, 10027  
DEGREE: BA, May, 1983 MAJOR: Physics  
PROGRAM: Columbia University, Columbia College, New York, NY, 10027

Present Position: Research Physicist, Optical Physics Branch, Naval Research Laboratory

### Experience:

Sept, 1983 - May, 1988 Graduate research under tutelage of Dr. Philip Bucksbaum, Bell Labs  
May, 1988 - Sept, 1988 Contractor, University of Virginia  
1988 - Present Research Physicist, Optical Physics Branch, Naval Research Laboratory

### Professional Societies:

American Physical Society  
Optical Society of America

### Specialization:

Research Physicist: Laser Physics/Technology. Basic research in theory and experiment in nonlinear and quantum optics; Stimulated Raman Scattering; Coherent Anti Stokes Raman Scattering; Four Wave Mixing; Coherent Effects in Resonant Atomic Systems; Ultrafast Optical Gating Techniques, Light Propagation and Imaging Through Strongly Scattering Media; Three Dimensional Imaging, Slow and Fast light in atomic vapors and optical fibers, Optical trapping of cold atoms, Quantum Memory, Free-Space quantum key distribution (QKD).

Significant technical accomplishments: Above threshold ionization / Kapitza-Dirac, NDE of subsurface cracks in ceramics, First demonstration of 2-D synthetic aperture lidar, Passive stabilization of slow light delay in fibers, Optical control of cold atoms, demonstration of quantum memory in warm and cold atoms, study of the heralded  $g_2$  in spontaneous parametric down conversion (SPDC), SPDC in waveguides.

Chaired and served as an organizer of the symposium entitled: Smart Structures - Imaging methods for structural diagnostics at the Annual Meeting of the Optical Society of America, Sept 26 - Oct 1, 1999, Santa Clara, CA

Chaired NDE techniques session of the Seventh Annual International Conference on Composites Engineering ICCE/7, July 2-8, 2000, Denver, CO.

Served as a program committee member of SPIE conference, "Testing, Reliability, and Application of Micro and Nano-Material Systems".

Participated in 3 DARPA programs: "SALTI", "PINS" and "Slow Light".

Currently PI in ONR Quantum Imaging Program.

Currently PI in ARAP-office Quantum Science and Engineering Program (QSEP)

Proposal evaluator for the DARPA program: Optical Arbitrary Waveform Generation BAA.

Proposal evaluator for National Science Foundation program: the Faculty Early Career Development (CAREER)

Served as a reviewer of technical proposal for Advanced Technology Program (NIST).

Served as a technical program review committee member for DARPA SALTI program.

Served on the NRL patent evaluation board.

Mark Bashkansky is a full-time government employee, employed as a civilian scientist in the Naval Research Laboratory for the Department of Defense. His duties include performing basic and applied research in the fields of laser physics, quantum optics, nonlinear optics and optical techniques for the nondestructive evaluation of materials.

Over 60 publications, over 30 presentations, 8 patents.

#### **BOOKS/BOOK CHAPTERS:**

1. "Stimulated Raman and Brillouin Scattering", John Reintjes and Mark Bashkansky, OSA Handbook of Optics vol. IV Chapter 18, 2001.
2. "Stimulated Scattering", Mark Bashkansky and John Reintjes, chapter in Encyclopedia of Modern Optics, Academic Press, December 2004.
3. NRL Review: "Optical Detection of Defects Below the Surface of Nontransparent Materials", Mark Bashkansky, Michael D. Duncan, and John Reintjes.
4. Mark Bashkansky, Zachary Dutton, Michael Steiner, "Application of slow light to phased array radar beam steering", in "Slow Light: Science and Applications" Taylor and Francis Group LLC, Edited by Rod Tucker and Jacob Khurgin, 2009.
5. M. Bashkansky, A. Black, T. Akin, M. Piotrowicz, A. Kuzmich, and J. Reintjes, "Quantum Memories Based on Optically Trapped Neutral Atoms", NRL Review Featured Article, 2017.

#### **PATENTS:**

1. Mar 29, 2011, US Patent No: 7,915,577 "Single-shot spatially-resolved imaging magnetometry using ultracold atoms", Bashkansky M; Fatemi F K; Terraciano M L.
2. Jan 25, 2005, US Patent No: 6,847,449 "Method and apparatus for reducing speckle in optical coherence tomography", M. Bashkansky, M. Duncan and J. Reintjes.
3. Mar 7, 2000, US Patent No: 6,034,804 "Rapid, high-resolution scanning of flat and curved regions for gated optical imaging", M. Bashkansky, M. Duncan and J. Reintjes.
4. May 23, 1995, US Patent No: 5,418,797 "Time gated imaging through scattering material using polarization and stimulated Raman amplification", M. Bashkansky, J. Reintjes.
5. Apr 19, 1994, US Patent No: 5,303,710 "Apparatus for imaging an object in or through a scattering medium using coherent anti-Stokes Raman scattering", M. Bashkansky, J. Reintjes.
6. Mar 8, 1994, US Patent No: 5,293,403 "Pulse discharge laser with passive arc protection", M. Bashkansky and B. Wexler.
7. Jan 4, 1994, US Patent No: 5,275,168 "Time-gated imaging through dense-scattering materials using stimulated Raman amplification", J. Reintjes, M. Duncan, R. Mahon, L. L. Tankersley, R. W. Waynant, M. Bashkansky.

8. Dec 14, 1993, US Patent No: 5,270,853 "Method and apparatus for imaging an object in or through a scattering medium by using multiple-wave mixing", M. Bashkansky, J. Reintjes.

## **PUBLICATIONS**

### **INVITED:**

1. "SBS-based Radar True Time Delay", Bashkansky, Mark; Walker, David; Gulian, Armen; et al., ADVANCES IN SLOW AND FAST LIGHT IV, Proceedings of SPIE 7949 Article Number: 794918, 2011
2. "Optical Ramsey Interference and its Performance in D1 Line Excitation in Rubidium Vapor for Implementation of a Vapor Cell Clock", Pati, Gour S.; Fatemi, Fredrik K.; Bashkansky, Mark; et al., ADVANCES IN SLOW AND FAST LIGHT IV, Proceedings of SPIE 7949 Article Number: 794910, 2011
3. Pati, Gour S.; Fatemi, Fredrik K.; Bashkansky, Mark; et al., "Prospect for development of a pulsed CPT Raman Ramsey clock using atomic vapor", ADVANCES IN SLOW AND FAST LIGHT III, Proceedings of SPIE 7612 Article Number: 76120D, 2010
4. Bashkansky, Mark; Dutton, Zachary; Gulian, Armen; et al., "True-Time Delay Steering of Phased Array Radars Using Slow Light", ADVANCES IN SLOW AND FAST LIGHT II, Proceedings of SPIE-The International Society for Optical Engineering 7226 Article Number: 72260A, 2009
5. "Signal Processing for Improving Field Cross-Correlation Function in Optical Coherence tomography", M. Bashkansky, M. Duncan, P. R. Battle, and J. Reintjes, Engineering & Laboratory News, 9 (5), 1998.
6. Focus issue: Optical methods for material inspection - Introduction, MD Duncan, M Bashkansky, OPT EXPRESS 2: (13) 515-515, Jun 1998.
7. "Subsurface Defect Detection in Materials Using Optical Coherence Tomography", M. Duncan, M. Bashkansky, and J. Reintjes, Optics Express, 2, 540, Jun 1998.
8. "Assessment of Techniques for Characterizing the Surface Quality of Ground Silicon Nitride", E. S. Zanoria, T. R. Watkins, K. Breder, L. Riester, M. Bashkansky, J. Reintjes, J. G. Sun, W. A. Ellingson, and P. J. Blau, Journal of Materials Engineering and Performance (publisher: ASM International (American Society for Materials)), Vol. 7., No. 4, pp. 533-547 (Aug. 1998).
9. "Time-gated imaging with nonlinear optical Raman Interactions", J. Reintjes, M. Bashkansky, M. D. Duncan, R. Mahon, L. L. Tankersley, J. A. Moon, and J. M. S. Prewitt, Opt. & Phot. News, 4, 28, (1993).

### **CONTRIBUTED:**

1. William S. Rabinovich, Rita Mahon, Mike S. Ferraro, Peter G. Goetz, Mark Bashkansky, Rachel E. Freeman, John Reintjes, James I. Murphy, "Free space quantum key distribution using modulating retro-reflectors", submitted to Optics Express, August 2017
2. Reintjes, J. and Bashkansky, Mark, "Considerations on an optical test of Popper's experiment", JOURNAL OF MODERN OPTICS 63, 1 SI Pages: 2-16, 2016
3. Bashkansky, Mark; Vurgaftman, Igor; Pipino, Andrew C. R.; et al., "Significance of heralding in spontaneous parametric down-conversion", PHYSICAL REVIEW A 90, 5 Article Number: 053825 Published: NOV 12 2014
4. Reintjes, J.; Bashkansky, Mark, "Does transmission of a weak optical pulse in a dense absorption medium require quantization of the optical field?", AMERICAN JOURNAL OF PHYSICS, 81/8, 610-617 2013
5. Vurgaftman, Igor; Bashkansky, Mark, "Suppressing four-wave mixing in warm-atomic-vapor quantum memory," PHYSICAL REVIEW A Volume: 87 Issue: 6 Article Number: 063836 Published: JUN 21 2013
6. Bashkansky, Mark; Fatemi, Fredrik K.; Vurgaftman, Igor, "Quantum memory in warm rubidium vapor with buffer gas," OPTICS LETTERS Volume: 37 Issue: 2 Pages: 142-144 Published: JAN 15 2012

7. Fatemi, Fredrik K.; Bashkansky, Mark, "Spatially resolved magnetometry using cold atoms in dark optical tweezers," OPTICS EXPRESS Volume: 18 Issue: 3 Pages: 2190-2196 Published: FEB 1 2010
8. Fatemi, Fredrik K.; Bashkansky, Mark; Oh, Eunkeu; et al., "Efficient excitation of the TE<sub>01</sub> hollow metal waveguide mode for atom guiding," OPTICS EXPRESS Volume: 18 Issue: 1 Pages: 323-332, 2010
9. Bashkansky, Mark; Park, Doewon; Fatemi, Fredrik K., "Azimuthally and radially polarized light with a nematic SLM," OPTICS EXPRESS Volume: 18 Issue: 1 Pages: 212-217, 2010
10. Florea, C.; Bashkansky, M.; Sanghera, J.; et al., "Slow-light generation through Brillouin scattering in As<sub>2</sub>S<sub>3</sub> fibers," OPTICAL MATERIALS Volume: 32 Issue: 2 Pages: 358-361, 2009
11. Fatemi, Fredrik K.; Terraciano, Matthew L.; Bashkansky, Mark; et al., "Cold atom Raman spectrography using velocity-selective resonances," OPTICS EXPRESS Volume: 17 Issue: 15 Pages: 12971-12980, 2009
12. Fatemi, Fredrik K.; Terraciano, Matthew L.; Dutton, Zachary; et al., "Imaging velocity selective resonances in a magnetic field," JOURNAL OF MODERN OPTICS, 56/18-19 Special Issue: SI Pages: 2022-2028, 2009
13. Kim, Danny; Economou, Sophia E.; Badescu, Stefan C.; et al., "Optical Spin Initialization and Nondestructive Measurement in a Quantum Dot Molecule," PHYSICAL REVIEW LETTERS, 101/23 236804, 2008
14. Walker, D. R.; Bashkansky, M.; Gulian, A.; et al., "Stabilizing slow light delay in stimulated Brillouin scattering using a Faraday rotator mirror," JOURNAL OF THE OPTICAL SOCIETY OF AMERICA B-OPTICAL PHYSICS Volume: 25 Issue: 12 Pages: C61-C64, 2008
15. Terraciano, Matthew L.; Bashkansky, Mark; Fatemi, Fredrik K., "A single-shot imaging magnetometer using cold atoms," OPTICS EXPRESS Volume: 16 Issue: 17 Pages: 13062-13069, 2008
16. Terraciano, Matthew L.; Bashkansky, Mark; Fatemi, Fredrik K., "Faraday spectroscopy of atoms confined in a dark optical trap," PHYSICAL REVIEW A Volume: 77 Issue: 6 Article Number: 063417, 2008
17. Sanghera, J. S.; Florea, C. M.; Shaw, L. B.; et al., "Non-linear properties of chalcogenide glasses and fibers," JOURNAL OF NON-CRYSTALLINE SOLIDS Volume: 354 Issue: 2-9 Pages: 462-467 Published: JAN 15 2008
18. Olson, Spencer E.; Terraciano, Matthew L.; Bashkansky, Mark; et al., "Cold-atom confinement in an all-optical dark ring trap," PHYSICAL REVIEW A Volume: 76 Issue: 6 Article Number: 061404, 2007
19. Terraciano, Matthew L.; Olson, Spencer E.; Bashkansky, Mark; et al., "Magnetically controlled velocity selection in a cold-atom sample using stimulated Raman transitions," PHYSICAL REVIEW A 76/5 053421, 2007
20. Fatemi, Fredrik K.; Bashkansky, Mark, "Focusing properties of high charge number vortex laser beams," APPLIED OPTICS Volume: 46 Issue: 30 Pages: 7573-7578, 2007
21. Fatemi, F. K.; Bashkansky, M.; Dutton, Z., "Dynamic high-speed spatial manipulation of cold atoms using acousto-optic and spatial light modulation," OPTICS EXPRESS Volume: 15 Issue: 6 Pages: 3589-3596 (2007)
22. M. Bashkansky, Z. Dutton, F. Fatemi, J. Reintjes, and M. Steiner, "Demonstration on Bi-color Slow Light Channelization in Rubidium Vapor," PHYSICAL REVIEW A 75, 021401R (2007)
23. Florea C, Bashkansky M, Dutton Z, et al., "Stimulated Brillouin scattering in single-mode As<sub>2</sub>S<sub>3</sub> and As<sub>2</sub>Se<sub>3</sub> chalcogenide fibers," OPTICS EXPRESS 14 (25): 12063-12070 DEC 11 (2006)
24. F. K. Fatemi, M. Bashkansky "Cold atom guidance using a binary spatial light modulator OPTICS EXPRESS 14 (4): 1368-1375 FEB 20 2006
25. F. K. Fatemi, M. Bashkansky "Generation of hollow beams by using a binary spatial light modulator", OPTICS LETTERS 31 (7): 864-866 APR 1 2006
26. Z. Dutton, M. Bashkansky, M. Steiner and J. Reintjes "Analysis and optimization of channelization architecture for wideband slow light in atomic vapors", OPTICS EXPRESS 14 (12): 4978-4991 JUN 12 2006
27. "Slow light dynamics of large bandwidth pulses in warm Rubidium vapor", Mark Bashkansky, Guy Beadie, Zachary Dutton, Fredrik Fatemi, John Reintjes, and Michael Steiner, Phys Rev A. 72, 033819, Sept 2005.
28. "Side-illuminated hollow-core optical fiber for atom guiding," F. K. Fatemi, M. Bashkansky, and S. Moore, OPTICS EXPRESS (13): 4890-4895 JUN 27 2005.
29. "Towards a FAST-CARS anthrax detector: analysis of cars generation from DPA," Beadie G, Bashkansky M, Reintjes J, et al. JOURNAL OF MODERN OPTICS 51 (16-18): 2627-2635 Sp. Iss. SI NOV-DEC 2004
30. "RF Phase-Coded Random-Modulation Lidar," Bashkansky, M., Burris, H. R., Funk, E. E., Mahon, R., and Moore, C. I., Optics Communications, 231(1-6), 93-98 (2004).
31. "Towards a FAST-CARS Anthrax Detector: CARS Generation in a DPA Surrogate Molecule," Beadie, G., Reintjes, J., Bashkansky, M., Opatrny, T., and Scully, M. O., Journal of Modern Optics, 50(15-17), 2361-2368 (2003).
32. "Microwave Photonic Direct-Sequence Transmitter and Heterodyne Correlation Receiver," Journal of Lightwave Technology, 21(12), 2962-2967 (2003).

33. "Two-dimensional synthetic aperture imaging in optical domain", M. Bashkansky, R. L. Lucke, E. Funk, L. J. Rickard, J. Reintjes, *Optics Letters*, 27( 22), Nov 15, 2002.
34. "Depth-gated imaging using lock-in holography", R. Mahon, W. S. Rabinovich, M. Bashkansky, S. R. Bowman, K. Ikossi-Anastasiou, D. S. Katzer, *JOSA B*, 19, no. 7, 1685-1691, July 2002.
35. "Subsurface detection and characterization of Hertzian cracks in Si<sub>3</sub>N<sub>4</sub> balls using optical coherence tomography", Mark Bashkansky, Hsiang Yu, John Reintjes, David Lewis, III, Vimal Pujari, *NDT&E INT* 34: (8) 547-555 DEC 2001, Elsevier Science.
36. "Statistics and reduction of speckle in optical coherence tomography", M. Bashkansky and J. Reintjes, *Opt. Lett.* 25, 8, p. 545, April 15, 2000.
37. "Characteristics of a Yb-doped superfluorescent fiber source for use in optical coherence tomography", M. Bashkansky, M. Duncan, L. Goldberg, J. Koplow and J. Reintjes, *Optics Express* 3/8, pp. 305 (Oct 1998).
38. "Speckle Photography Using Optically Addressed Multiple Quantum Well Spatial Light Modulators", W. Rabinovich, M. Bashkansky, S. Bowman, R. Mahon, and P. Battle, *Optics Express*, 2, 449-453, May 1998.
39. "Signal Processing for Improving Field Cross-Correlation Function in Optical Coherence tomography", M. Bashkansky, M. Duncan, P. R. Battle, and J. Reintjes, *Engineering & Laboratory News*, 9 (5), 1998; *APPL OPTICS* 37: (34) 8137-8138, Dec 1998.
40. "Subsurface defect detection in ceramics by high-speed high-resolution optical coherence tomography", M. Bashkansky M. D. Duncan, M. Kahn, D. Lewis III and J. Reintjes, *Opt. Lett.*, 22, 61 (1997).
41. "Low Cost, High Resolution Optical Technique Detects Microscopic Subsurface Defects in Ceramics", J. Reintjes and M. Bashkansky, *Materials Technology* Vol.12, No.2, pp. 43-46 (March/April1997).
42. "Subsurface Defect Detection in Ceramic Materials Using Low Coherence Optical Scatter Reflectometer", M. Bashkansky, M. D. Duncan, M. Kahn, D. Lewis III, and J. Reintjes, *Technology Showcase Integrated Monitoring, Diagnostics and Failure Prevention*, pp. 673-680, (1996).
43. "Subsurface Defect Detection in Ceramic Materials using Optical Gated Scatter Reflectometer", M. Bashkansky, P. R. Battle, M. D. Duncan, M. Kahn and J. Reintjes, *Jour. Am. Ceramic Soc.* 79, 1397(1996).
44. "Subsurface Defect Detection in Ceramic Materials using Optical Gating Techniques", P. R. Battle, M. Bashkansky, R. Mahon, and J. Reintjes, *Optical Engineering* Vol.35, No.4, pp. 1119 (1996).
45. "Achievable spatial resolution of time-resolved transillumination imaging systems which utilize multiply scattered light", J. A. Moon, P. R. Battle, M. Bashkansky, R. Mahon, M. D. Duncan, and J. Reintjes, *Phys. Rev. E*, 53, pt. B, pp. 1142-55 (1996).
46. "Single pulse fabrication of fiber Bragg gratings using a phase conjugated KrF excimer laser", M. Putnam, C. Askins, G. Williams, E. Friebele, M. Bashkansky, and J. Reintjes, *Electronics Letters* 31/11, May 25 (1995).
47. "New regime of conical emissions in multi-level optically-pumped atomic vapors", M. Bashkansky, P. R. Battle, R. Mahon, and J. Reintjes, *Opt. Commun.* 120, 189 (1995).
48. "Spectral and spatial characteristics of optically pumped cascade emissions in Na vapor", M. Bashkansky, P. R. Battle, R. Mahon, and J. Reintjes, *Laser Phys.*, 5, 474 (1995).
49. "Generation of high-contrast narrow-band subpicosecond correlations from broad-band stochastic fields", J. A. Moon, P. R. Battle, M. Bashkansky and J. Reintjes, *Opt. Lett.*, 20, 831 (1995).
50. "Coherently amplified Raman Polarization gate for imaging through scattering media", M. Bashkansky, C. Adler and J. Reintjes, *Opt.Lett.*, 19, 350 (1994).
51. "Image Upconversion With Coherent Anti-Stokes Raman Scattering", M. Bashkansky and J. Reintjes, *IEEE Journal of Quantum Electronics*, 30, 318 (1994).
52. "Imaging through a strong scattering medium with nonlinear optical field cross-correlation techniques", M. Bashkansky and J. Reintjes, *Opt. Lett.*, 18, 2132,1993.
53. "Nonlinear-optical field cross-correlation techniques for medical imaging with lasers", M. Bashkansky and J. Reintjes, *Appl. Opt.*, 32, 3842 (1993).
54. "Fiber bragg reflectors prepared by a single excimer pulse", C. G. Askins, T. .E. Tsai, G. M. Williams, M. A. Putnam, M. Bashkansky, and E. J. Friebele, *Opt. Lett.*, 17, 833, (1992)
55. "A Simple Technique to Prevent Misfire Arching in Discharge-pumped Excimer Lasers", M. Bashkansky and B. Wexler, *Rev. Sci. Instrum.* 63, 1838 (1992).
56. "Incoherent Multimode Raman Amplification Theory", M. Bashkansky and J. Reintjes, *J. Opt. Soc. Am. B* 8, 1843 (1991).

57. "Correlation effects in pump-depleted broadband stimulated Raman amplification", M. Bashkansky and J. Reintjes, *Opt. Commun.* 83, 103 (1991).
58. "Above-Threshold Ionization in Helium", P. H. Bucksbaum, M. Bashkansky, and D. W. Schumacher, *Phys. Rev. A* 37, 3615 (1988).
59. "Asymmetries in Above-Threshold Ionization", M. Bashkansky, P. H. Bucksbaum, and D. W. Schumacher, *Phys. Rev. Lett.* 60, 2458 (1988).
60. "High-Intensity Kapitza-Dirac Effect", P. H. Bucksbaum, D. W. Schumacher, and M. Bashkansky, *Phys. Rev. Lett.* 61, 1182 (1988).
61. "Role of the Ponderomotive Potential in Above-Threshold Ionization", P. H. Bucksbaum, R. R. Freeman, M. Bashkansky, and T. J. McIlrath, *J. Opt. Soc. Am. B* 4, 760 (1987).
62. "A Study of Above-Threshold Ionization Processes in Xenon and Krypton", T. J. McIlrath, P. H. Bucksbaum, R. R. Freeman and M. Bashkansky, *Phys. Rev. A* 35, 4611 (1987).
63. "Above-Threshold Ionization with Elliptically Polarized Light", M. Bashkansky, P. H. Bucksbaum, and D. W. Schumacher, *Phys. Rev. Lett.* 59, 274 (1987).
64. "Scattering of Electrons by Intense Coherent Light", P. H. Bucksbaum, M. Bashkansky, and T. J. McIlrath, *Phys. Rev. Lett.* 58, 349 (1987).
65. "Ponderomotive Effects on Angular Distributions of Photoelectrons", R. R. Freeman, T. J. McIlrath, P. H. Bucksbaum, and M. Bashkansky, *Phys. Rev. Lett.* 57, 3156 (1986).
66. "Suppression of Multiphoton Ionization with Circularly Polarized Coherent Light", P. H. Bucksbaum, M. Bashkansky, R. R. Freeman, T. J. McIlrath, and L. F. DiMauro, *Phys. Rev. Lett.* 56, 2590 (1986).

#### **PROCEEDINGS:**

1. "A scintillation playback system for quantum links", Rabinovich, William S.; Mahon, Rita; Bashkansky, Mark; et al. *FREE-SPACE LASER COMMUNICATION AND ATMOSPHERIC PROPAGATION XXIX*, Proceedings of SPIE Volume: 10096 Article Number: UNSP 1009604 Published: 2017
2. J. Reintjes and Mark Bashkansky, "A proposed optical test for Popper's challenge to quantum mechanics", *Proceedings. SPIE 9873, Quantum Information and Computation IX*, 987309 (May 19, 2016); doi:10.1117/12.2222307
3. Mark Bashkansky, Marcel W. Pruessner, Igor Vurgaftman, Mijin Kim and J. Reintjes, "Higher-Order Spontaneous Parametric Down-Conversion With Back-Propagating Idler Using Submicron Poled KTP Waveguide", *Proceedings of the SPIE*, 2016.
4. Reintjes, J. and Bashkansky, Mark, "Considerations on collapse of the wavefunction", *SPIE Conference on Quantum Information and Computation XIII*, Baltimore, MD APR 22-24, 2015 *Proceedings of SPIE* Volume: 9500 Article Number: 95000U Published: 2015
5. Bashkansky, Mark; Vurgaftman, Igor; Reintjes, J., "Characterization of photons generated in spontaneous parametric down-conversion", *SPIE Conference on Quantum Information and Computation XII*, Baltimore, MD MAY 08-09, 2014 *QUANTUM INFORMATION AND COMPUTATION XII* Book Series: *Proceedings of SPIE* Volume: 9123 Article Number: 91230G Published: 2014
6. Christensen, C. A.; Zavriyev, A.; Bashkansky, M.; et al., "Compact, fiber-based, fast-light enhanced optical gyroscope," *FIBER OPTIC SENSORS AND APPLICATIONS X*, *Proceedings of SPIE* 8722 Article 87220J, 2013
7. Vurgaftman, I.; Bashkansky, M., "Optimal detuning for writing warm-atomic-vapor quantum memory in the presence of collisional fluorescence and four-wave mixing," *ADVANCES IN PHOTONICS OF QUANTUM COMPUTING, MEMORY, AND COMMUNICATION VI*, *Proceedings of SPIE* 8635 Article 86350Q, 2013
8. Bashkansky, Mark; Fatemi, Fredrik K.; Vurgaftman, Igor, "Generating and storing nonclassical correlations in a warm Rb vapor cell with buffer gas," *QUANTUM INFORMATION AND COMPUTATION X* Book Series: *Proceedings of SPIE* Volume: 8400 Article Number: 840013 Published: 2012
9. Bashkansky, Mark; Fatemi, Fredrik K.; Vurgaftman, Igor, "Quantum Memory in warm Rb vapor with buffer gas," *ADVANCES IN PHOTONICS OF QUANTUM COMPUTING, MEMORY, AND COMMUNICATION V* Book Series: *Proceedings of SPIE* Volume: 8272 Article Number: 827217 Published: 2012

10. Pati, G. S.; Fatemi, F. K.; Bashkansky, M.; et al., "Optical Ramsey Interference and its Performance in D1 Line Excitation in Rubidium Vapor for Implementation of a Vapor Cell Clock," ADVANCES IN SLOW AND FAST LIGHT IV Book Series: Proceedings of SPIE Vol: 7949 Article: 794910, 2011
11. Bashkansky, Mark; Walker, David; Gulian, Armen; et al., "SBS-based Radar True Time Delay," ADVANCES IN SLOW AND FAST LIGHT IV Book Series: Proceedings of SPIE Volume: 7949 Article: 794918, 2011
12. Pati, Gour S.; Fatemi, Fredrik K.; Bashkansky, Mark; et al., "Prospect for development of a pulsed CPT Raman Ramsey clock using atomic vapor," ADVANCES IN SLOW AND FAST LIGHT III Book Series: Proceedings of SPIE Volume: 7612 Article Number: 76120D, 2010
13. Bashkansky, Mark; Dutton, Zachary; Gulian, Armen; et al., "True-Time Delay Steering of Phased Array Radars Using Slow Light," ADVANCES IN SLOW AND FAST LIGHT II Book Series: Proceedings of SPIE-The International Society for Optical Engineering Volume: 7226 Article Number: 72260A, 2009
14. Kim, D.; Economou, S. E.; Badescu, S. C.; et al., "Optical Spin Initialization and Nondestructive Measurement in a Quantum Dot Molecule", Conference On Lasers And Electro-Optics And Quantum Electronics And Laser Science Conference (CLEO/QELS 2009), VOLS 1-5 Pages: 2046-2047, 2009
15. Fatemi, Fredrik K.; Terraciano, Matthew L.; Bashkansky, Mark, "Spatial and Temporal Magnetometry Using Cold Atoms in Dark Optical Tweezers", Conference on Lasers and Electro-Optics/Quantum Electronics and Laser Science Conference VOLS 1-5 Pages: 2675-2676, Baltimore, MD 2009
16. F. Fatemi, M. Bashkansky, Z. Dutton, S. E. Olson, M. Terraciano, "Single-beam, blue-detuned toroidal optical traps for cold atoms," SPIE Photonics West Conference Proceedings. Volume: 6483 Pages: 48307-48307 Article Number: 648307, 2007
17. F. Fatemi, M. Bashkansky, Z. Dutton, "High-speed, dynamic spatial control of cold atoms with combined acousto-optic and spatial light modulation," SPIE Photonics West Conference Proceedings. Proceedings of SPIE Volume: 6483 Article Number: 648305, 2007
18. V. L. Jacobs, Z. Dutton, M. Bashkansky, M. J. Steiner, J. F. Reintjes, "Reduced density matrix descriptions for electromagnetic induced transparency and related pump-probe optical phenomena in atomic systems," SPIE Photonics West Conference Proceedings 6482, Pages: X8020-X8020 Article: 648020X, 2007.
19. Terraciano, M. L.; Olson, S. E.; Bashkansky, M.; et al., "Velocity-Selective Two-Photon Resonances with Blue and Red Detunings in a Cold Atomic Sample", (CLEO/QELS 2007), VOLS 1-5 1820-1821 2007
20. Bashkansky, M.; Dutton, Z.; Fatemi, F.; et al., "Slow light in Zeeman split hyperfine levels of hot Rb vapor", (CLEO/QELS 2006) Pages: 2 pp. Published: 2006
21. Jacobs, V.; Dutton, Z.; Bashkansky, M.; et al. "Liouville-space descriptions for intense-field coherent electromagnetic interactions", Proceedings of SPIE -- Volume 6130, 61300C-1Mar. 21, 2006
22. Bashkansky, M.; Beadie, G.; Dutton, Z.; et al., "Slow light dynamics in warm rubidium vapor", Quantum Electronics and Laser Science Conference (QELS) Pages: 217-19 vol.1 Part: Vol. 1 Published: 2005
23. Fatemi, F.K.; Bashkansky, M.; Busch, H.C.; et al., "Side-pumped hollow-core fiber for atom guiding", Quantum Electronics and Laser Science Conference (QELS) Pages: 1394-6 vol.3 Published: 2005
24. "Channelization architecture for wide-band slow light in atomic vapors," Z. Dutton, M. Bashkansky, M. Steiner, and John Reintjes, Advanced Optical and Quantum Memories and Computing II, eds. H.J. Coufal, Z.U. Hasan, and A.E. Craig, Proceedings of SPIE Vol. 7535, 115 (SPIE, Bellingham, WA 2005).
25. Beadie, G.; Reintjes, J.; Bashkansky, M.; et al., "Detection and analysis of fs-CARS response from bacterial spore marker dipicolinic acid (DPA)", Conference: Conference on Lasers and Electro-Optics (CLEO) Pages: 2 pp. vol.1 Published: 2004
26. Bashkansky, M; Reintjes, J, "Subsurface detection and characterization of Hertzian cracks in advanced ceramic materials using optical coherence tomography", Nondestructive Evaluation And Reliability Of Micro-And Nanomaterial Systems Proceedings of the (SPIE) Vol: 4703 Pages: 46-52, 2002
27. Bashkansky, M.; Funk, E., "Phase-coded LIDAR", Conference on Lasers and Electro-Optics Pages: 648 vol.1 Published: 2002
28. "Synthetic aperture imaging at 1.5  $\mu$ m: laboratory demonstration and potential application to planet surface studies", Bashkansky, M.; Lucke, R. L.; Funk, E. E.; Reintjes, J. F.; Rickard, L. J., SPIE PROCEEDINGS 0277-786X; 2002; VOL 4849

29. "Detection of near-surface microscopic defects in ceramics and other materials using optical coherence tomography", M. Bashkansky, M. D. Duncan and J. Reintjes, Review of Progress in Quantitative Nondestructive Evaluation, Vol 19B, p.1517, AIP, 1999.
30. "Depth-resolved Subsurface Defect Detection in Ceramics Using Optical Gating Techniques", M. Bashkansky, M. Duncan, M. Kahn, D. Lewis III and J. Reintjes, Proceedings of the 23rd Annual Review of Progress in Quantitative Nondestructive Evaluation, vol. 16, pp.1961 (1997).
31. "Subsurface Defect Detection in Ceramic Materials Using Ultrafast Optical Gating Techniques", M. Bashkansky, P. R. Battle, M. Duncan, R. Mahon and J. Reintjes, Review of Progress in Quantitative Nondestructive Evaluation, Vol.15, pp. 1565-1572 (1996).
32. "Measurement of the Achievable Time-Dependent Point-Spread-Function of Multiply Scattered Light between the Ballistic and Diffuse Limits", J. A. Moon, P. R. Battle, M. Bashkansky, J. Reintjes and J. M. Prewitt, Proc. S.P.I.E., Vol. 2389 (1995).
33. "Nonlinear optical field cross-correlation techniques for imaging through a strong scattering medium", M. Bashkansky, C. L. Adler, P. R. Battle and J. Reintjes, Proc. S.P.I.E., M.A. Fiddy, Editor, Vol. 2241, 228 (1994).
34. "Stimulated Compton Backscattering and the High Intensity Kapitza-Dirac Effect," D.W. Schumacher, P.H. Bucksbaum, and M. Bashkansky, in Optical Society Proceedings on Short Wavelength Coherent Radiation: Generation and Applications, ed. by R.W. Falcone and J. Kirz, Optical Society of America, Washington DC, p.236 (1988).
35. "Symmetries and Asymmetries in Above-Threshold Ionization," P.H. Bucksbaum, M. Bashkansky, and D.W. Schumacher, in Optical Society Proceedings on Short Wavelength Coherent Radiation: Generation and Applications, ed. by R.W. Falcone and J. Kirz, Optical Society of America, Washington DC, 258 (1988).
36. "Polar Angular Distributions of Above-Threshold Ionization in Xenon and Helium", D. W. Schumacher, P. H. Bucksbaum, and M. Bashkansky, Bulletin of the American Physical Society, 33, 1033(1988).
37. "Angle resolved study of ATI in Xe, Kr, and He with elliptically polarized light", M. Bashkansky, P. H. Bucksbaum, and D. W. Schumacher, Bulletin of the American Physical Society, 33, 1032(1988).
38. "Angular distributions from Above-Threshold Ionization by elliptically polarized light", M. Bashkansky, P. H. Bucksbaum, and D. W. Schumacher, Bulletin of the American Physical Society, 32, 1237(1987).
39. "Above-Threshold Ionization by elliptically polarized 1.06mm light", P. H. Bucksbaum, M. Bashkansky, and D. W. Schumacher, Bulletin of the American Physical Society, 32, 1237(1987).
40. "Above-Threshold Ionization and Ponderomotive Forces", P. H. Bucksbaum, R. R. Freeman, T. J. McIlrath, and M. Bashkansky, IQEC 87 Technical Digest, 21, 194 (1987).
41. "Studies of Intensity and Polarization Effects on ATI Electrons from Xe Multiphoton Ionization", P. H. Bucksbaum, R. R. Freeman, T. J. McIlrath, and M. Bashkansky, Proceedings of the Workshop on High Intensity Multiphoton Ionization, Orsay (1986).
42. "Intensity and Polarization Effects on Above Threshold Ionization," T. J. McIlrath, R. R. Freeman, M. Bashkansky, and P. H. Bucksbaum, Bulletin of the American Physical Society 31, 947 (1986).
43. "Electron Angular Distributions in Above-Threshold Ionization of Xenon", M. Bashkansky, P. H. Bucksbaum, R. R. Freeman, T. J. McIlrath, L. F. DiMauro, and J. Custer, Proceedings of the Third Topical Meeting on Short Wavelength Coherent Radiation: Generation and Applications, ed. by J. Bokor D. T. Attwood, AIP Conf. Proc. 147, 174 (1986).
44. "Suppression of Multiphoton Ionization with Circularly Polarized Coherent Light", T. J. McIlrath, P. H. Bucksbaum, M. Bashkansky, R. R. Freeman, and L. F. DiMauro, Proceedings of the Third Topical Meeting on Short Wavelength Coherent Radiation: Generation and Applications, ed. by J. Bokor D. T. Attwood, AIP Conf. Proc. 147, 89 (1986).

## **PRESENTATIONS**

### **INVITED:**

1. J. Reintjes and Mark Bashkansky, "Entangled Ghost Imaging: Entangled Ghost Imaging: Spatial Resolution and the Popper Conjecture", TAMU-Princeton-Baylor Summer Symposium on Quantum Science and Engineering, Casper College, Wyoming, July 23-29, 2017



2. J. Reintjes and Mark Bashkansky, "Entangled Ghost Imaging: Resolution, the Gaussian Schell Model and the Popper Conjecture", Princeton-TAMU Symposium on Quantum Physics and Engineering, Princeton University, June 15-17, 2017
3. J. Reintjes, Mark Bashkansky and M. O. Scully, "A Quantum Eraser With Popper's Conjecture", Physics of Quantum Electronics, Snowbird, UT, Jan, 2016
4. J. Reintjes and Mark Bashkansky, "Further Considerations on an Optical Test of the Popper Principal" TAMU summer School on Quantum Science and Engineering, Casper College, WY July, 2015
5. John F. Reintjes, Mark Bashkansky "Considerations on an Optical Test of the Popper Conjecture", Physics of Quantum Electronics PQE-2015, January 4-8, 2015, Snowbird, Utah
6. J. Reintjes and M. Bashkansky, "Consideration On The Nature Of Wavefunction Collapse In Entangled Ghost Imaging", The 2014 TAMU-Casper College Summer School on Quantum Science and Engineering, July 20-26, 2014, Casper College, Casper, WY
7. M. Bashkansky, I. Vurgaftman, and J. Reintjes, "Characterization of Photons Generated in Spontaneous Parametric Down-Conversion", The 2014 TAMU-Casper College Summer School on Quantum Science and Engineering, July 20-26, 2014, Casper College, Casper, WY
8. M. Bashkansky, "Quantum Communication/Optics Review," Invited presentation at ONR, July 2012.
9. Bashkansky, Mark; Walker, David; Gulian, Armen; et al., "SBS-based Radar True Time Delay", Conference on Advances in Slow and Fast Light IV, San Francisco, CA 2011
10. Pati, Gour S.; Fatemi, Fredrik K.; Bashkansky, Mark; et al., "Optical Ramsey Interference and its Performance in D1 Line Excitation in Rubidium Vapor for Implementation of a Vapor Cell Clock", Conference on Advances in Slow and Fast Light IV, San Francisco, CA 2011
11. Pati, Gour S.; Fatemi, Fredrik K.; Bashkansky, Mark; et al., "Prospect for development of a pulsed CPT Raman Ramsey clock using atomic vapor", Conference on Advances in Slow and Fast Light III, San Francisco, CA 2010
12. Bashkansky, Mark; Dutton, Zachary; Gulian, Armen; et al., "True-Time Delay Steering of Phased Array Radars Using Slow Light", Conference on Advances in Slow and Fast Light II, San Jose, CA 2009
13. Sanghera, J. S.; Florea, C. M.; Shaw, L. B.; et al., "Non-linear properties of chalcogenide glasses and fibers", 11th International Conference on the Physics of Non-Crystalline Solids Location: Rhodes Isl, GREECE 2006
14. V. L. Jacobs, Z. Dutton, M. Bashkansky, M. J. Steiner, J. F. Reintjes, "Reduced density matrix descriptions for electromagnetic induced transparency and related pump-probe optical phenomena in atomic systems," SPIE Photonics West – 2007
15. V. L. Jacobs, Z. Dutton, M. Bashkansky, M. Steiner and J. Reintjes, "Liouville-Space Descriptions for Intense-Field Coherent Electromagnetic Interactions", 2006 Photonics West Meeting of SPIE, San Jose, CA, January 21-26, 2006.
16. Z. Dutton, M. Bashkansky, M. Steiner, and John Reintjes, "Channelization architecture for wide-band slow light in atomic vapors," Advanced Optical and Quantum Memories and Computing II, SPIE Photonics West, 22-27 January 2005, San Jose.
17. M. Bashkansky, Robert L. Lucke, Eric Funk, John Reintjes, Lee J Rickard, "Synthetic Aperture Imaging at 1.5 mm: Laboratory Demonstration and Potential Application to Planet Surface Studies", SPIE: Highly Innovative Space Telescope Concepts conference, 22-28 August 2002, Waikoloa, Hawaii, USA.
18. Invited presentation in a DARPA workshop on the Imaging Coherent Optical Radar, Dec 9, 2002.
19. M. Bashkansky, "Advances in application of Optical Coherence Tomography to material studies: preliminary results with composites" ICCE/8 (2001)
20. M. Bashkansky, "Non-destructive detection of near-surface microscopic defects in ceramics and other materials using optical coherence tomography," ICCE/7 (2000)

CONTRIBUTED:

1. Rabinovich, William S.; Mahon, Rita; Bashkansky, Mark; et al., "A scintillation playback system for quantum links", SPIE Conference on Free-Space Laser Communication and Atmospheric Propagation XXIX Location: San Francisco, CA Date: JAN 30-FEB 01, 2017
2. A.T. Black, T. Stievater, M. Pruessner, D. Park, M. Bashkansky, W. Rabinovich, R. Mahon, F. Fatemi. Defense Threat Reduction Agency Quantum Initiative Workshop (30 November – 1 December 2016, Lorton, VA), "Sensing with Cold Atoms: From Free Space to Nanophotonic Traps."
3. J. Reintjes and Mark Bashkansky, "A proposed optical test for Popper's challenge to quantum mechanics", Quantum Information and Computation IX, SPIE, Baltimore, MD April, 2016, Paper 9873-10
4. Mark Bashkansky, Marcel W. Pruessner, Igor Vurgaftman, Mijin Kim and J. Reintjes, "Higher-Order Spontaneous Parametric Down-Conversion With Back-Propagating Idler Using Submicron Poled KTP Waveguide", SPIE Defense + Commercial Sensing, April 17-21, 2016 Baltimore MD
5. John F. Reintjes, Mark Bashkansky "Considerations on Collapse of the Wavefunction", SPIE DSS 2015, Quantum Information and Computation XIII April 20-24, 2015 Baltimore MD
6. Mark Bashkansky, Igor Vurgaftman and John F. Reintjes, "Higher-Order Spontaneous Parametric Down-Conversion With Back-Propagating Idler Using Submicron Poled KTP", The OSA annual meeting (Frontiers in Optics/Laser Science 2015), Oct 18-22, 2015, The Fairmont San Jose, San Jose, CA
7. M. Bashkansky and J. Reintjes, "Considerations on the Collapse of the Wavefunction in Entangled Ghost Imaging," OSA Frontiers in Optics, Laser Science, Oct 19-23, 2014 Tucson, Arizona
8. M. Bashkansky, I. Vurgaftman, and J. Reintjes "Significance of Heralding in Spontaneous Parametric Down-Conversion", OSA Frontiers in Optics, Laser Science, Oct 19-23, 2014 Tucson, Arizona
9. Bashkansky, Mark; Vurgaftman, Igor; Reintjes, J., "Characterization of photons generated in spontaneous parametric down-conversion", SPIE Conference on Quantum Information and Computation XII, Baltimore, MD MAY 08-09, 2014
10. Christensen, Caleb A.; Zavriyev, Anton; Bashkansky, Mark; et al. "Compact, fiber-based, fast-light enhanced optical gyroscope," Conference on Fiber Optic Sensors and Applications X, Baltimore, MD 2013
11. Vurgaftman, Igor; Bashkansky, Mark, "Optimal detuning for writing warm-atomic-vapor quantum memory in the presence of collisional fluorescence and four-wave mixing" Conference on Advances in Photonics of Quantum Computing, Memory, and Communication VI, San Francisco, CA 2013
12. Bashkansky, Mark; Fatemi, Fredrik K.; Vurgaftman, Igor, "Generating and storing nonclassical correlations in a warm Rb vapor cell with buffer gas," Conference on Quantum Information and Computation X, Baltimore, MD 2012
13. Bashkansky, Mark; Fatemi, Fredrik K.; Vurgaftman, Igor, "Quantum Memory in warm Rb vapor with buffer gas," Conference on Advances in Photonics of Quantum Computing, Memory, and Communication V, San Francisco, CA 2012
14. Fatemi, Fredrik K.; Terraciano, Matthew L.; Dutton, Zachary; et al., "Imaging velocity selective resonances in a magnetic field", 39th Winter Colloquium on the Physics of Quantum Electronics, Snowbird, UT 2009
15. Kim, Danny; Economou, Sophia E.; Badescu, S. C.; et al., "Optical Spin Initialization and Nondestructive Measurement in a Quantum Dot Molecule", Conference on Lasers and Electro-Optics/Quantum Electronics and Laser Science Conference (CLEO/QELS 2009), Baltimore, MD JUN 02-04, 2009
16. Fatemi, Fredrik K.; Terraciano, Matthew L.; Bashkansky, Mark, "Spatial and Temporal Magnetometry Using Cold Atoms in Dark Optical Tweezers", Conference: Conference on Lasers and Electro-Optics/Quantum Electronics and Laser Science Conference (CLEO/QELS 2009), Baltimore, MD 2009
17. Fatemi, Fredrik K.; Bashkansky, Mark; Dutton, Zachary, "High-speed, dynamic spatial control of cold atoms with combined acousto-optic and spatial light modulation", Conference on Complex Light and Optical Forces Location: San Jose, CA JAN 24-25, 2007
18. F. Fatemi, M. Bashkansky, Z. Dutton, S. E. Olson, M. Terraciano "Single-beam, blue-detuned toroidal optical traps for cold atoms," SPIE Photonics West – 07
19. Terraciano, M. L.; Olson, S. E.; Bashkansky, M.; et al., "Velocity-Selective Two-Photon Resonances with Blue and Red Detunings in a Cold Atomic Sample" Conference on Lasers and Electro-Optics/Quantum Electronics and Laser Science Conference Location: Baltimore, MD Date: MAY 06-11, 2007

20. Bashkansky, M.; Dutton, Z.; Fatemi, F.; et al., "Slow light in Zeeman split hyperfine levels of hot Rb vapor", (CLEO/QELS 2006) Long Beach, CA 2006
21. Jacobs, V.; Dutton, Z.; Bashkansky, M.; et al. "Liouville-space descriptions for intense-field coherent electromagnetic interactions", Conference on Advanced Optical and Quantum Memories and Computing III, San Jose, CA 2006
22. Bashkansky, M.; Beadie, G.; Dutton, Z.; et al., "Slow light dynamics in warm rubidium vapor", Quantum Electronics and Laser Science Conference (QELS) Location: Baltimore, MD, USA Date: 22-27 May 2005
23. Fatemi, F.K.; Bashkansky, M.; Busch, H.C.; et al., "Side-pumped hollow-core fiber for atom guiding", Quantum Electronics and Laser Science Conference (QELS) Baltimore, MD, USA Date: 22-27 May 2005
24. Dutton, Z; Bashkansky, M; Steiner, M; et al., "Channelization architecture for wide-band slow light in atomic vapors", Conference on Advanced Optical and Quantum Memories and Computing II Location: San Jose, CA Date: JAN 25-26, 2005
25. Beadie, G; Bashkansky, M; Reintjes, J; et al., "Towards a FAST-CARS anthrax detector: analysis of cars generation from DPA", 34th Winter Colloquium on the Physics of Quantum Electronics, Snowbird UT 2004
26. Beadie, G.; Reintjes, J.; Bashkansky, M.; et al., "Detection and analysis of fs-CARS response from bacterial spore marker dipicolinic acid (DPA)", Conference: Conference on Lasers and Electro-Optics (CLEO) Location: San Francisco, CA, USA Date: 16-21 May 2004
27. Bashkansky, M; Reintjes, J, "Subsurface detection and characterization of Hertzian cracks in advanced ceramic materials using optical coherence tomography", 1st Conference on Nondestructive Evaluation and Reliability of Micro- and Nanomaterial Systems SAN DIEGO, CA 2002
28. Bashkansky, M.; Funk, E., "Phase-coded LIDAR", Conference on Lasers and Electro-Optics Long Beach, CA, USA Date: 19-24 May 2002
29. "Synthetic aperture imaging at 1.5  $\mu$ m: laboratory demonstration and potential application to planet surface studies", Bashkansky, M.; Lucke, R. L.; Funk, E. E.; Reintjes, J. F.; Rickard, L. J., Conference on Highly Innovative Space Telescope Concepts Location: WAIKOLOA, HI Date: AUG 22-23, 2002
30. "Electron Angular Distributions in Above-Threshold Ionization of Xenon", M. Bashkansky, P. H. Bucksbaum, R. R. Freeman, T. J. McIlrath, L. F. DiMauro, and J. Custer, Third Topical Meeting on Short Wavelength Coherent Radiation: Generation and Applications (1986).