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EDUCATION

Ph.D., Chemical Physics, University of Colorado, Boulder, 1979.
B.A., Chemistry and Physics, University of California, Santa Cruz, 1974.

PROFESSIONAL EXPERIENCE

Knight Professor of Liberal Arts and Sciences, University of Oregon; 2006 –
Visiting Fellow, JILA, NIST and Univ. of Colorado, 1998 - 1999.
Director, Oregon Center for Optics, University of Oregon, Eugene, Oregon; 1997 – 1998; 2002-03.
Visiting Scientist, Norwegian Defense Research Establishment, Kjeller, Norway, 1996.
Professor of Physics, Department of Physics, University of Oregon; 1990 -
Associate Professor of Physics, Department of Physics, University of Oregon, Eugene, Oregon;
1988 - 1990.
Associate Professor of Optics, The Institute of Optics, University of Rochester, Rochester,
New York; 1983 - 1988.
Assistant Professor of Optics, The Institute of Optics, University of Rochester, Rochester,
New York; 1979 - 1983.
Research Assistant, Joint Institute for Laboratory Astrophysics, University of Colorado and National
Bureau of Standards; 1975 - 1979.

RESEARCH INTERESTS

Quantum optics and optical physics: quantum statistics in nonlinear optical processes, lasers, and
semiconductors; quantum measurement, quantum information; light coherence and propagation.

HONORS AND ACTIVITIES

Fellow, American Physical Society (APS), 1993.
Fellow, Optical Society of America (OSA), 1990.
Knight Professor of Liberal Arts and Sciences, University of Oregon; 2006 –
Visiting Fellow of JILA, University of Colorado, 1998-1999.
CAMOS–Committee on Atomic, Molecular and Optical Science – National Research Council (2001-04)
Joint Council on Quantum Electronics, Chair, 2008 -
Steering Committee Member, CLEO/QELS Conference, 2007- .
Executive Committee, Division of Laser Science, APS (1995- 1998).
Chair, Distinguished Traveling Lecturers Committee, DLS, APS, 1996-1999.
Co-General Chair, Quantum Electronics & Laser Sciences (QELS) Conference, 2006.
Chair, Frederick Ives Medal Selection Committee, OSA, 2005.
Member, Frederick Ives Medal Selection Committee, OSA 2004.
Charles Townes Award Committee (OSA) 1992
Advanced LIGO NSF Annual Review and Site Visit at CalTech, 2004.
Co-Chair, Program Committee, International Quantum Electronics Conference, 2004.
Program Sub-Committee Chair, Quantum Optics, QELS Conference, 2002.
Program Committee, Quantum Information Sciences, CLEO/QELS Conference, 2001.

Program Committee, Ultrafast Dynamics, CLEO/QELS Conference, 2000.
Symposium Organizer, "Ultrafast Quantum Optics," Interdisciplinary Laser Science Conference, 1999.
Program Advisory Committee, International Quantum Electronics Conference, Sydney, Australia, 1996.
Quantum Optics Program Committee for Quantum Electronics & Laser Sciences Conference (QELS), Baltimore, 1995.
Program Advisory Committee, International Meeting on Nonlinear Dynamics in Optical Systems, 1990.
Publications Committee, Division of AMO Physics, APS, 1987-1988.
Program Committee Member, International Laser Science Conference, 1985-1986.
Program Committee Member, 1985, OSA Annual Meeting
Co-Chairman of Program Committee for 1985 OSA/NATO Meeting on "Instabilities and Dynamics of Lasers and Nonlinear Optical Systems."
Program Committee Member, Division of AMO Physics, APS, 1983-1985.

EDITORSHIPS

Associate Divisional Editor, Physical Review Letters, 2006 – present.
Board of Editors, J. Modern Optics, 1998 – present.
Topical Editor (Quantum Optics), J. Optical Society of America B , 1989-1995.
Co-Editor, Special Feature Issue of the J. of Modern Optics on "Preparation and Measurement of Quantum States," 1997.

Ph.D. STUDENTS GRADUATED TO DATE

L.A. Westling, I.A. Walmsley, T. Sizer, Z.W. Li, I. McMackin, S.J. Kuo, D.T. Smithey, S. E. Hodges, M. Munroe, D. McAlister, M. E. Anderson, C.-C. Cheng, A. Funk, E. L. Blansett, Brian Smith. Wenhai Ji, Guoqiang Cui.

REFEREED PUBLICATIONS

1. "Collisional Redistribution and Saturation of Near-Resonant Scattered Light," J.L. Carlsten, A. Szoke and M.G. Raymer, Phys. Rev. **A15**, 1029 (1976).
2. "Simultaneous Observations of Stimulated Raman Scattering and Stimulated Collision-Induced Fluorescence," M.G. Raymer and J.L. Carlsten, Phys. Rev. Letters **39**, 1326 (1977).
3. "Comparison of Collisional Redistribution and Emission Line Shapes," M.G. Raymer, J.L. Carlsten and G. Pichler, J. Phys. **B12**, L119 (1979).
4. "Theory of Stimulated Raman Scattering with Broadband Lasers," M.G. Raymer, J. Mostowski and J. L. Carlsten, Phys. Rev. **A19**, 2304 (1979).
5. "Resonance Fluorescence in a Weak Radiation Field with Arbitrary Spectral Distribution," M.G. Raymer and J. Cooper, Phys. Rev. **A20**, 2238 (1979).
6. "The Buildup of Stimulated Raman Scattering from Spontaneous Raman Scattering," J. Mostowski and M.G. Raymer, Opt. Commun. **36**, 237 (1981).
7. "Four-Wave Parametric Interactions in a Strongly Driven Two-Level System," R.W. Boyd, M.G. Raymer, P. Narum, and D. Harter, Phys. Rev. **A24**, 411 (1981).

8. "Four-Wave Parametric Amplification of Rabi Sidebands in Sodium," D.J. Harter, P. Narum, M.G. Raymer, and R. W. Boyd, *Phys. Rev. Letters* **46**, 1192 (1981).
9. "Stimulated Raman Scattering: Unified Treatment of Spontaneous Initiation and Spatial Propagation," M.G. Raymer and J. Mostowski, *Phys. Rev.* **A24**, 1980 (1981).
10. "Pulse Energy Statistics in Stimulated Raman Scattering," M.G. Raymer, K. Rzazewski, and J. Mostowski, *Optics Letters* **7**, 71 (1982).
11. "Steady-State Quantum Interference in Resonance Fluorescence," D.A. Cardimona, M.G. Raymer, and C.R. Stroud, Jr., *J. Phys.* **B15**, 55 (1982).
12. "Statistics of Stimulated Stokes Pulse Energies in the Steady-State Regime," K. Rzazewski, M. Lewenstein, and M. G. Raymer, *Opt. Commun.* **43**, 451 (1982).
13. "On the Theory of Time-Dependent Intense-Field Collisional Resonance Fluorescence," P.D. Kleiber, J. Cooper, K. Burnett, C. Kunasz, and M.G. Raymer, *Phys. Rev.* **A27**, 291 (1983).
14. "Time-Dependences of Two-, Three-, and Four-Photon Ionization of Atomic Hydrogen in the Ground 12S and Metastable 22S States," C.R. Holt, M.G. Raymer, and W.P. Reinhardt, *Phys. Rev.* **A27**, 2971 (1983).
15. "Observation of Macroscopic Quantum Fluctuations in Stimulated Raman Scattering," I.A. Walmsley and M.G. Raymer, *Phys. Rev. Lett.* **50**, 962 (1983).
16. "Observation of Intensity Fluctuations and Mode Correlations in a Broad-Band CW Dye Laser," L.A. Westling, M.G. Raymer, M.G. Sceats, and D. F. Coker, *Opt. Commun.* **47**, 212 (1983).
17. "Stimulated Raman Scattering of Colored Chaotic Laser Light," M. Trippenbach, K. Rzazewski, and M.G. Raymer, *JOSA* **B1**, 671 (1984).
18. "Single-Shot Spectral Measurements and Mode Correlations in a Pulsed Multimode Dye Laser," L.A. Westling, M.G. Raymer, and J.J. Snyder, *JOSA* **B1**, 150 (1984).
19. "Time-Dependent Semiclassical Theory of Gain-Coupled Distributed Feedback Lasers," I.N. Duling and M.G. Raymer, *IEEE-JQE* **10**, 1202 (1984).
20. "Stabilization of Stokes Pulse Energies in the Nonlinear Regime of Stimulated Raman Scattering," I.A. Walmsley, M.G. Raymer, T. Sizer, I. Duling, and J. Kafka, *Opt. Commun.* **53**, 137 (1985).
21. "Quantum Theory of Stokes Generation with a Multimode Laser," M.G. Raymer and L. A. Westling, *JOSA* **B2**, 1417 (1985).
22. "Quantum Theory of Spatial and Temporal Coherence Properties of Stimulated Raman Scattering," M.G. Raymer, I.A. Walmsley, J. Mostowski, and B. Sobolewska, *Phys. Rev.* **A32**, 332 (1985).
23. "Experimental Study of the Macroscopic Quantum Fluctuations of Partially Coherent Stimulated Raman Scattering," I.A. Walmsley and M.G. Raymer, *Phys. Rev.* **A33**, 382 (1986).
24. "Modification of Atomic Collision Dynamics by Intense Ultrashort Laser Pulses," T. Sizer II and M.G. Raymer, *Phys. Rev. Lett.* **56**, 123 (1986).

25. "Intensity Autocorrelation Measurements and Spontaneous FM Phase Locking in a Multimode Pulsed Dye Laser," L.A. Westling and M.G. Raymer, *JOSA B* **3**, 911 (1986).
26. "Atomic Collisions in the Presence of Intense, Ultrashort Laser Pulses," T. Sizer II and M.G. Raymer, *Phys. Rev.* **A36**, 2643 (1987).
27. "Temporal Smoothing of Multimode Dye-Laser Pulses," Z.W. Li, C. Radzewicz, and M.G. Raymer, *Opt. Lett.* **12**, 416 (1987).
28. "Intensity Correlation Measurements in Stimulated Raman Generation with a Multimode Laser," L.A. Westling and M.G. Raymer, *Phys. Rev.* **A36**, 4835 (1987).
29. "Amplitude-Stabilized Chaotic Light," C. Radzewicz, Z.W. Li, and M.G. Raymer, *Phys. Rev.* **A37**, 2039 (1988).
30. "Phase Cross Correlation in the Coherent Raman Process," Z.W. Li, C. Radzewicz, and M.G. Raymer, *Opt. Lett.* **13**, 491 (1988).
31. "Strong-Field Theory of a Multimode, Standing-Wave Dye Laser," M.G. Raymer, Z. Deng, and M. Beck, *JOSA B* **5**, 1588 (1988).
32. "Instabilities and Chaos in a Multimode, Standing-Wave, CW Dye Laser," I. McMackin, C. Radzewicz, M. Beck, and M.G. Raymer, *Phys. Rev.* **A38**, 820 (1988).
33. "Cancellation of Laser Phase Fluctuations in Stokes, Anti-Stokes Generation," Z.W. Li, C. Radzewicz, and M.G. Raymer, *JOSA B* **5**, 2340 (1988).
34. "Coherent Propagation of Stokes Light in a Collisionally Broadened Three-Level Amplifier," B.J. Herman, J.H. Eberly, M.G. Raymer, *Phys. Rev.* **A39**, 3447 (1989).
35. "Temporal Quantum Fluctuations in Stimulated Raman Scattering: Coherent-Modes Description," M.G. Raymer, Z.W. Li, and I.A. Walmsley, *Phys. Rev. Lett.* **63**, 1586 (1989).
36. "Transition from Quantum-Noise-Driven to Deterministic Dynamics in a Multimode Laser," M. Beck, I. McMackin, and M.G. Raymer, *Phys. Rev.* **A40**, 2410 (1989).
37. "The Influence of Collisional Dephasing on Superfluorescence," J.J. Maki, M.S. Malcuit, M.G. Raymer, R.W. Boyd, and P.D. Drummond, *Phys. Rev.* **A40**, 5135 (1989).
38. "Delay-Time Statistics of Cooperative Emission in the Presence of Homogeneous Line Broadening," K. Rzazewski, M.G. Raymer, and R.W. Boyd, *Phys. Rev.* **A39**, 5785 (1989).
39. "Spatial Interference of Macroscopic Light Fields from Independent Raman Sources," S.J. Kuo, D.T. Smithey, and M.G. Raymer, *Phys. Rev. A (Rap. Commun.)* **43**, 4083 (1990).
40. "Beam-Pointing Fluctuations in Gain-Guided Amplifiers," S.J. Kuo, D.T. Smithey, and M.G. Raymer, *Phys. Rev. Lett.* **66**, 2605 (1991).
41. "Quantum Theory of Propagation of Non-Classical Radiation in a Near-Resonant Medium," P.D. Drummond and M.G. Raymer, *Phys. Rev.* **A44**, 2072 (1991).
42. "Near Quantum Limited Phase Memory in a Raman Amplifier," D.T. Smithey, M. Belsley, K. Wedding, and M.G. Raymer, *Phys. Rev. Lett.* **67**, 2446 (1991).

43. "Limits to Wide-Band, Pulsed Squeezing in a Traveling-Wave, Parametric Amplifier with Group-Velocity Dispersion," M.G. Raymer, P.D. Drummond and S.J. Carter, *Opt. Lett.* **16**, 1189 (1991).
44. "Beam Pointing Fluctuations in a Gain-Guided Raman Generator, S.J. Kuo, D.T. Smithey, and M.G. Raymer, *Phys. Rev. A***45**, 2031 (1992).
45. "Information and Complementarity in a Proposed Which-Path Experiment Using Photons, M.G. Raymer and S. Yang, *J. Mod. Optics*, **39** 1221(1992).
46. "Sub-shot-noise correlation of total photon number using macroscopic twin pulses of light," D. T Smithey, M. Beck, M. Belsley, and M. G. Raymer, *Phys. Rev. Lett.* **69**, 2650 (1992).
47. "Turn-on transient statistics and dynamics in a multimode, short-cavity laser," S. E. Hodges, M. Munroe, D. Adkison, W. Gadomski, and M. G. Raymer, *Opt. Lett.* **17**, 931 (1992).
48. "Twin photon beams resulting from interference of independent broadband squeezed vacua," M. Belsley, D. T. Smithey, M. G. Raymer, and J. Mostowski, *Phys. Rev. A*, **46**, 414 (1992).
49. "Measurement of the Wigner distribution and the density matrix of a light mode using optical homodyne tomography: application to squeezed states and the vacuum," D. T Smithey, M. Beck, M. G. Raymer and A. Faridani, *Phys. Rev. Lett.* **70**, 1244 (1993).
50. "Experimental determination of quantum phase distributions using optical homodyne tomography," M. Beck, D. T Smithey, and M. G. Raymer, *Phys. Rev. A* **48**, R890, (1993).
51. "Complete experimental characterization of the quantum state of a light mode via the Wigner function and the density matrix: application to quantum phase distributions of vacuum and squeezed-vacuum states," D. T Smithey, M. Beck, J. Cooper, M. G. Raymer, and A. Faridani, *Physica Scripta*, **T48**, 35 (1993).
52. "Experimental determination of number-phase uncertainty relations," M. Beck, D. T Smithey, J. Cooper, and M. G. Raymer, *Opt. Lett.*, **18**, 1259 (1993).
53. "Compound-cavity laser modes for arbitrary interface reflectivity," S. E. Hodges, M. Munroe, J. Cooper, and M. G. Raymer, *Opt. Lett.* **18**, 1481 (1993).
54. "Observation of extreme sensitivity to induced molecular coherence in stimulated Raman scattering," M. Belsley, D.T. Smithey, K. Wedding, and M.G. Raymer, *Phys. Rev. A* **48**, 1514 (1993).
55. "Measurement of number-phase uncertainty relations of optical fields," D. T Smithey, M. Beck, J. Cooper, and M. G. Raymer, *Phys. Rev. A*, **48**, 3159 (1993).
56. "Many-port homodyne detection of optical phase," M. G. Raymer, J. Cooper, and M. Beck, *Phys. Rev. A*, **48**, 4617 (1993).
57. "Chronocyclic tomography for measuring amplitude and phase structure of optical pulses," M. Beck, M. G. Raymer, I. A. Walmsley and V. Wong, *Opt. Lett.* **18**, 2041 (1993).
58. "Total intensity modulation and mode hopping in a coupled-cavity laser as a result of external-cavity length variations," M. Munroe, S. E. Hodges, J. Cooper, and M. G. Raymer, *Opt. Lett.* **19**, 105 (1993).

59. "Observation of Kastler ring emission from a short-cavity laser," S. E. Hodges, W. Gadomski, and M. G. Raymer, *Appl. Opt.* **32**, 5930 (1993).
60. "Complex wave-field reconstruction using phase-space tomography," M. G. Raymer, M. Beck and D. McAlister, *Phys. Rev. Lett.* **72**, 1137 (1994).
61. "Uncertainty principle for joint measurement of noncommuting variables," M. G. Raymer, *Am. J. Phys.* **62**, 986 (1994).
62. "Demonstration of Boundary Conditions on Sound Impulse Reflections in Pipes," M. G. Raymer and S. Micklavzina, *The Physics Teacher*, **33**, 183 (1995).
63. "Quadrature Squeezing with Ultrashort Pulses in Nonlinear Optical Waveguides," M. E. Anderson, M. Beck, M. G. Raymer, and J. D. Bierlein, *Opt. Lett.* **20**, 620 (1995).
64. "Optical phase retrieval by phase-space tomography and fractional-order Fourier transforms," D. McAlister, M. Beck, L. Clarke, A. Mayer and M. G. Raymer, *Opt. Lett.* **20**, 1181 (1995).
65. "Quantum superpositions of classically distinguishable states of a molecule," I. A. Walmsley and M. G. Raymer, *Phys. Rev. A* **52**, 681 (1995).
66. "Photon number statistics from phase-averaged quadrature field distribution: theory and ultrafast measurement," M. Munroe, D. Boggavarapu, M. E. Anderson and M. G. Raymer, *Phys. Rev. A, Rapid Commun.* **52**, R924 (1995).
67. "Ultrashort pulsed squeezing by optical parametric amplification," M. J. Werner, M. G. Raymer, M. Beck and P. D. Drummond, *Phys. Rev. A* **52**, 4202 (1995).
68. "Ultrafast measurement of optical-field statistics by dc-balanced homodyne detection," M. G. Raymer, J. Cooper, H. J. Carmichael, M. Beck, and D. T. Smithey, *JOSA B* **12**, 1801 (1995).
69. "Sampling of photon statistics and density matrix using homodyne detection," U. Leonhardt, M. Munroe, T. Kiss, Th. Richter, and M. G. Raymer, *Opt. Commun.*, **127**, 144, (1996); erratum: **137**, 445, (1997).
70. "Observation of moving wave packets reveals their quantum state," U. Leonhardt and M. G. Raymer, *Phys. Rev. Lett.*, **76**, 1985, (1996).
71. "Two-mode quantum-optical state measurement: Sampling the joint density matrix," M. G. Raymer, D. F. McAlister and U. Leonhardt, *Phys. Rev. A*, **54**, 2397, (1996).
72. "Turn-on transient dynamics in a multimode, compound-cavity laser," S. E. Hodges, M. Munroe, W. Gadomski, J. Cooper, and M. G. Raymer, *J. Opt. Soc. Am.* **B 14**, 180 (1997).
73. "Multimode laser model with coupled cavities and quantum noise," S. E. Hodges, M. Munroe, J. Cooper, and M. G. Raymer, *J. Opt. Soc. Am.* **B 14**, 191 (1997).
74. "Ultrafast photon-number correlations from dual-pulse, phase-averaged homodyne detection," D. F. McAlister and M. G. Raymer, *Phys. Rev. A*, **55**, R1609, (1997).
75. "Correlation and joint density matrix of two spatial-temporal modes from balanced-homodyne sampling," D. F. McAlister and M. G. Raymer, *J. Mod. Opt.* **44**, 2359, (1997).

76. "Pulsed squeezed light generation in chi-two nonlinear waveguides," M. A. Anderson, D. F. McAlister, M. G. Raymer, and M. C. Gupta, *J. Opt. Soc. Am.* **B 14**, 3180 (1997).
77. "Whittaker-Shannon sampling theorem for experimental reconstruction of free-space wave packets," M. G. Raymer, *J. Mod. Opt.* **44**, 2565 (1997).
78. "Measuring the quantum mechanical wave function," M. G. Raymer, *Contemp. Physics* **38**, 343 (1997).
79. "Spectral broadening of stochastic light intensity-smoothed by a saturated semiconductor optical amplifier," M. J. Munroe, J. Cooper, and M. G. Raymer, *J. Quant. Electron.* **34**, 548 (1998).
80. "Long-range saturation of spatial decoherence in wave-field transport in multiple-scattering media," C.-C. Cheng and M. G. Raymer, *Phys. Rev. Lett.* **82**, 4807 (1999).
81. "Measuring the quantum polarization state of light," M. G. Raymer, D. F. McAlister and A. Funk, in *Quantum Communication, Measurement, and Computing 2*, 1998, ed. P. Kumar (Plenum, 2000) pg. 147-162.
82. "Quantum-state tomography of two-mode light using generalized rotations in phase space," M. G. Raymer and A. Funk, *Phys. Rev. A* **61**, 015801 (1999).
83. "A variable lateral shearing Sagnac interferometer with high numerical aperture for measuring the complex spatial coherence function of light," Chung-Chieh Cheng, M. G. Raymer, and H. Heier, *J. Mod. Opt.*, **47**, 1237 (2000).
84. "Propagation of Transverse Optical Coherence in Random Multiple-Scattering Media," Chung-Chieh Cheng and M. G. Raymer, *Phys. Rev. A*, **62**, 023811 (2000).
85. "Ultrafast Polarization Dynamics and Noise in Pulsed Vertical-Cavity Surface-Emitting Lasers," E. L. Blansett, M. G. Raymer, G. Khitrova, H. M. Gibbs, D. K. Serkland, A. A. Allerman, K. M. Geib *Optics Express*, **9**, 312–318 (2001).
86. "Quantum key distribution using non-classical photon number correlations in macroscopic light pulses," A.C. Funk and M.G. Raymer, *Phys. Rev. A.*, **65**, 042307 (2002).
87. "Quantum cryptography with macroscopic non-classical light," M.G. Raymer and A.C. Funk, *Acta Physica Polonica A*, **101**, 437 (2002).
88. "Theory of optical near-resonant cone emission in atomic vapor," B. D. Paul, J. Cooper, A. Gallagher, and M. G. Raymer, *Phys. Rev. A* **66**, 063816 (2002).
89. "Separability criterion for separate quantum systems," M. G. Raymer, A. Funk, B. C. Sanders, H. de Guise, *Phys. Rev. A* **67**, 052104 (2003).
90. "Linear Optical Sampling," C. Dorrer, D.C. Kilper, H.R. Stuart, G. Raybon and M. G. Raymer (*IEEE Photonics Technology Letters*, **15**, 1746, 2003).
91. "Quantum state entanglement and readout of collective atomic-ensemble modes and optical wave-packets by stimulated Raman scattering," M. G. Raymer, *J. Mod. Optics*, **51**, 1739–1759 (2004).
92. "Quantum noise properties of parametric amplifiers driven by two pump waves," Colin J. McKinstrie, S. Radic, M. G. Raymer," *Optics Express*, **12**, 5037-5066 (2004).

93. "Generation of pure-state single-photon wave packets by conditional preparation based on spontaneous parametric down conversion," A. B. U'Ren, C. Silberhorn, R. Erdmann, K. Banaszek, W. P. Grice, I. A. Walmsley, and M.G. Raymer, *Laser Physics*, **15**, 146 (2005).
94. "Picosecond Polarization Dynamics and Noise in Pulsed Vertical-Cavity Surface-Emitting Lasers," E. L. Blansett, M. G. Raymer, G. Cui, G. Khitrova, H. M. Gibbs, D. K. Serkland, A. A. Allerman, and K. M. Geib, *IEEE J. Quant. Electron.* **41**, 287-301 (2005).
95. "Quantum noise properties of parametric processes," C. J. McKinstrie, M. Yu, M. G. Raymer and S. Radic, *Opt. Express* **13**, 4986-5012 (2005).
96. "Pure-state, single-photon wave-packet generation by parametric down conversion in a distributed microcavity," M. G. Raymer, Jaewoo Noh, K. Banaszek, I.A. Walmsley, *Phys. Rev. A* **72**, 023825 (2005). quant-ph/0504062
97. "Translation of individual and entangled states by four-wave mixing," C. J. McKinstrie, J. D. Harvey, S. Radic and M. G. Raymer, *Opt. Express* **13**, 9131-9142 (2005).
98. "Quantum efficiency of single-photon sources in the cavity-QED strong-coupling regime," Guoqiang Cui and M. G. Raymer, *Opt. Express*, **13**, 9660-9665 (2005). quant-ph/0511049
99. "The Maxwell wave function of the photon," M. G. Raymer and Brian J. Smith, *Proceedings of SPIE Volume 5866: The Nature of Light: What Is a Photon?*, C. Roychoudhuri, K. Creath, Editors, pp. 293-297 (2005).
100. "Measurement of the transverse spatial quantum state of light at the single-photon level," Brian J. Smith, Bryan Killett, M.G. Raymer, K. Banaszek, I.A. Walmsley, *Opt. Lett.* **30**, 3365-3367 (2005). quant-ph/0507142
101. "Quantum mechanics of phase-sensitive amplification in a fiber," C. J. McKinstrie, M. G. Raymer, S. Radic and M. V. Vasilyev, *Opt. Commun.* **257**, 146-163 (2006).
102. "Emission spectra and quantum efficiency of single-photon sources in the cavity-QED strong-coupling regime," Guoqiang Cui and M. G. Raymer, *Phys. Rev. A*, **73**, 053807 (2006).
103. "A hemispherical, high-solid-angle optical micro-cavity for cavity-QED studies," Guoqiang Cui, J. M. Hannigan, R. Loeckenhoff, F. M. Matinaga, M. G. Raymer, S. Bhongale, M. Holland, S. Mosor, S. Chatterjee, H. M. Gibbs, G. Khitrova, *Opt. Express*, **14**, 2289 (2006).
104. "Pairwise entanglement and readout of atomic-ensemble and optical wave-packet modes in traveling-wave Raman interactions," Wojciech Wasilewski and M.G. Raymer, *Phys. Rev. A*, **73**, 063816 (2006). quant-ph/0512157
105. "Four-wave mixing cascades near the zero-dispersion frequency," C. J. McKinstrie and M. G. Raymer, *Opt. Express* **14**, 9600 (2006).
106. "Two-photon wave mechanics," Brian J. Smith and M. G. Raymer, *Phys. Rev. A*, **74**, 062104 (2006). quant-ph/0605149
107. "Efficient picosecond pulse shaping by programmable Bragg gratings," Chunbai Wu and M. G. Raymer, *IEEE Journal of Quantum Electronics*, **42**, 873-884 (2006).

108. "Slow light propagation in a linear-response three-level atomic vapor," Wenhai Ji, Chunbai Wu, M. G. Raymer, *JOSAB* 24, 629-635 (2006). quant-ph/ 0603145
109. "Mapping broadband single-photon wavepackets into an atomic memory," J. Nunn, I. A. Walmsley, M. G. Raymer, K. Surmacz, F. C. Waldermann, Z. Wang, and D. Jaksch, *Phys. Rev. A*, 75, 011401R (2007). quant-ph/0605149
110. "Unimpaired phase-sensitive amplification by vector four-wave mixing near the zero-dispersion frequency," C. J. McKinstrie, S. Radic, M. G. Raymer, L. Schenato, *Opt. Express*, 15, 2178-2189 (2007).
111. "Mesoscopic entanglement of atomic ensembles through non-resonant stimulated Raman scattering," Wenhai Ji, Chunbai Wu, S. J. van Enk, M. G. Raymer, *Phys. Rev. A* 75, 052305 (2007); quant-ph/0612057
112. "Photon wave functions, wave-packet quantization of light, and coherence theory," Brian J. Smith and M. G. Raymer, *New J. Phys.* 9, 414 (2007); arXiv: 0708.0831
113. "Generation and novel photonic guidance of multi-octave optical-frequency combs," F. Couny, F. Benabid, P. J. Roberts, P. S. Light and M. G. Raymer, *Science*, 318, 1118-1121 (2007).
114. "Photon pair-state preparation with tailored spectral properties by spontaneous four-wave mixing in photonic-crystal fiber," K. Garay-Palmett, H. J. McGuinness, Offir Cohen, J. S. Lundeen, R. Rangel-Rojo, M. G. Raymer, C. J. McKinstrie, S. Radic, A. B. U'Ren and I. A. Walmsley, *Opt. Express*, 15, 14870-14886 (2007); arXiv:0709.3129
115. "Multicolor multipartite entanglement produced by vector four-wave mixing in a fiber," C. J. McKinstrie, S. J. van Enk, M. G. Raymer, and S. Radic, *Opt. Express* 16, 2720-2739 (2008).
116. "Photon Wave Mechanics and the Wolf Equations of Classical Coherence Theory," M. G. Raymer and Brian J. Smith, *Conference on Coherence and Quantum Optics 9* (2007) [appeared 2008].
117. "Self-spin-controlled rotation of spatial states of a Dirac electron in a cylindrical potential via spin-orbit interaction," C. C. Leary, D. Reeb and M. G. Raymer, *New Journal of Physics*, 10, 103022 (2008).

ACCEPTED FOR PUBLICATION

"Continuous-variable optical quantum state tomography," A.I. Lvovsky and M. G. Raymer, *Rev. Mod. Phys.* (to appear 2008); quant-ph/0511044

SUBMITTED FOR PUBLICATION

"Stable Mode Sorting by Two-Dimensional Parity of Photonic Transverse Spatial States," C.C. Leary, L.A. Baumgardner, and M.G. Raymer, arXiv:0810.2447

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"Multimode and Fluctuation Effects in Stimulated Raman Scattering," International Laser Science Conference, Seattle, Washington; October 1986.

"Statistical Properties of Pulsed Dye Laser Radiation," Department of Physics, Columbia University, New York; February 1987.

"Atomic Collisions in Intense Laser Fields," Departmental Colloquium, Department of Physics, Lehigh University, Allentown, Pennsylvania; March 1987.

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