

## Bibliography

- [1] Milton Abramowitz and Irene A. Stegun. Handbook of Mathematical Functions. Dover Publications, 1965.
- [2] R.R. Alfano and S.L. Shapiro. Emission in the region 4000 to 7000 Å via four-photon coupling in glass. Physical Review Letters, 24(11):584–7, 1970.
- [3] L. Allen and J. H. Eberly. Optical Resonance and Two-Level Atoms. Dover, 1987.
- [4] Y. Ben-Aryeh. Cooperative effects in cone emission from laser-pumped two-level atoms. Physical Review A, 56(1):854–8, 1997.
- [5] R.W. Boyd, M.G. Raymer, P. Narum, and D.J. Harter. Four-wave parametric interactions in a strongly driven two-level system. Physical Review A, 24(1):411–23, 1981.
- [6] G. Brechignac, P. Cahuzac, and A. Debarre. Anomalous off-axis emissions on the resonance strontium line, illuminated by a quasi-resonant pulsed laser light. Optics Communications, 35(1):87–91, 1980.
- [7] W. Chalupczak, W. Gawlik, B. Łobodziński, T. Pałasz, G. Wąsik, J. Zachorowski, and B. Samson. The role of quantum interference and incoherent pumping in amplification without inversion and nonlinear phenomena in dense media. In Inter. Symp. on Atomic Coherence and Inversionless Optical Amplification, 1995.
- [8] W. Chalupczak, W. Gawlik, and J. Zachorowski. Conical emission in barium vapour. Optics Communications, 99(1-2):49–54, 1993.
- [9] W. Chalupczak, W. Gawlik, and J. Zachorowski. Four-wave mixing in strongly driven two-level systems. Physical Review A, 49(6):4895–901, 1994.
- [10] E.A. Chauchard and Y.H. Meyer. On the origin of the so called conical emission in laser pulse propagation in atomic vapor. Optics Communications, 52(2):141–4, 1984.
- [11] D.I. Chekhov, D.V. Gaidarenko, A.G. Leonov, A.A. Panteleev, and A.N. Starostin. Conical emission and spectral behavior of strong near resonant laser wave at low-frequency detuning. Optics Communications, 105(3-4):209–13, 1994.
- [12] Y. Chen. Self-trapped beams with cylindrical symmetry. Optics Communications, 82(3-4):255–9, 1991.
- [13] R. Y. Chiao, E. Garmire, and C. H. Townes. Self-Trapping of Optical Beams. Physical Review Letters, 13(15):479–482, 1964.
- [14] G. De Filippo, S. Guldborg-Kjaer, S. Milosevic, and J.O.P. Pedersen. Population of metastable barium associated with conical emission. Optics Communications, 144(4-6):315–21, 1997.
- [15] M.L. Dowell, R.C. Hart, A. Gallagher, and J. Cooper. Self-focused light propagation in a fully saturable medium: experiment. Physical Review A, 53(3):1775–85, 1996.

- [16] M.L. Dowell, B.D. Paul, A. Gallagher, and J. Cooper. Self-focused light propagation in a fully saturable medium: theory. Physical Review A, 52(4):3244–53, 1995.
- [17] A. Dreischuh, V. Kamenov, S. Dinev, U. Reiter-Domiaty, D. Gruber, and L. Windholz. Spectral and spatial evolution of a conical emission in Na vapor. Journal of the Optical Society of America B, 15(1):34–40, 1998.
- [18] J.H. Eberly and K. Wodkiewicz. The time-dependent physical spectrum of light. Journal of the Optical Society of America, 67(9):1252–61, 1977.
- [19] M. Fernandez-Guasti, J.L. Hernandez-Pozos, E. Haro-Poniatowski, and L.A. Julio-Sanchez. Anomalous conical emission in calcium vapour. Optics Communications, 108(4-6):367–76, 1994.
- [20] A. Gerrard and J. M. Burch. Introduction to Matrix Methods in Optics. Dover Publications, 1994.
- [21] I. Golub, G. Erez, and R. Shuker. Cherenkov emission due to laser-induced moving polarisation in sodium. Journal of Physics B, 19(4):L115–20, 1986.
- [22] I. Golub, G. Erez, and R. Shuker. Off resonant laser induced ring emission. Optics Communications, 57(2):143–5, 1986.
- [23] Joseph W. Goodman. Introduction to Fourier Optics. The McGraw-Hill Companies, INC., 1996.
- [24] D. Grischkowsky. Self-defocusing of light by potassium vapor. Physical Review Letters, 24(16):866–9, 1970.
- [25] J. Guo, J. Cooper, and A. Gallagher. Generation of transient Rabi sidebands in pulse propagation: a possible source for cone emission. Physical Review A, 52(5):R3440–3, 1995.
- [26] R.C. Hart, Li You, A. Gallagher, and J. Cooper. Failures of the four-wave mixing model for cone emission. Optics Communications, 111(3-4):331–7, 1994.
- [27] D.J. Harter and R.W. Boyd. Four-wave mixing resonantly enhanced by AC-Stark-split levels in self-trapped filaments of light. Physical Review A, 29(2):739–48, 1984.
- [28] D.J. Harter, P. Narum, M.G. Raymer, and R.W. Boyd. Four-wave parametric amplification of Rabi sidebands in sodium. Physical Review Letters, 46(18):1192–5, 1981.
- [29] J. D. Jackson. Classical Electrodynamics. John Wiley & Sons, second edition, 1975.
- [30] M. Karlsson. Optical beams in saturable self-focusing media. Physical Review A, 46(5):2726–34, 1992.
- [31] H. Kogelnik and T. Li. Laser Beams and Resonators. Applied Optics, 5(10):1550–67, 1966.
- [32] M. Le Berre, E. Ressayre, A. Tallet, and F.P. Matter. Quasi-trapping of Gaussian beams in two-level systems. Journal of the Optical Society of America B, 2(6):956–67, 1985.
- [33] M. LeBerre-Rousseau, E. Ressayre, and A. Tallet. Self-induced generation of an off-axis frequency shifted radiation from atoms. Optics Communications, 36(1):31–4, 1981.
- [34] M.G. Littman. Single-mode operation of grazing-incidence pulsed dye laser. Optics Letters, 3(4):138–40, 1978.
- [35] K. Liu and M.G. Littman. Novel geometry for single-mode scanning of tunable lasers. Optics Letters, 6(3):117–18, 1981.
- [36] P. McNicholl and H.J. Metcalf. Synchronous cavity mode and feedback wavelength scanning in dye laser oscillators with gratings. Applied Optics, 24(17):2757–61, 1985.

- [37] Y.H. Meyer. Multiple conical emissions from near resonant laser propagation in dense sodium vapor. Optics Communications, 34(3):439–44, 1980.
- [38] P. Meystre and M. Sargent III. Elements of Quantum Optics. Springer-Verlag, 2nd edition, 1991.
- [39] B.R. Mollow. Power spectrum of light scattered by two-level systems. Physical Review, 188(5):1969–75, 1969.
- [40] B.D. Paul, M.L. Dowell, A. Gallagher, and J. Cooper. Observation of conical emission from a single self-trapped beam. Physical Review A, 59(6):4784–96, 1999.
- [41] A.I. Plekhanov, S.G. Rautian, V.P. Safonov, and B.M. Chernobrod. The nature of frequency-angular diffusion of powerful quasisresonant radiation. Sov. Phys. JETP, 61(2):249–54, 1985.
- [42] C.A. Sacchi, C.H. Townes, and J.R. Lifshitz. Anti-Stokes generation in trapped filaments of light. Physical Review, 174(2):439–47, 1968.
- [43] T. Shevy and M. Rosenbluh. Multiple conical emissions from a strongly driven atomic system. Journal of the Optical Society of America B, 5(1):116–22, 1988.
- [44] C.H. Skinner and P.D. Kleiber. Observation of anomalous conical emission from laser-excited barium vapor. Physical Review A, 21(1):151–6, 1980.
- [45] J.M. Soto-Crespo, E.M. Wright, and N.N. Akhmediev. Recurrence and azimuthal-symmetry breaking of a cylindrical Gaussian beam in a saturable self-focusing medium. Physical Review A, 45(5):3168–75, 1992.
- [46] A.N. Starostin, A.A. Pantelev, V.I. Lebedev, S.V. Rotin, A.G. Leonov, and D.I. Chekhov. Evolution of the frequency-spatial structure of an intense laser pulse propagating in a resonant medium. JETP, 81(4):660–70, 1995.
- [47] A.C. Tam. Strong amplification of sidebands in self-focused laser beams in an atomic vapor. Physical Review A, 19(5):1971–7, 1979.
- [48] M.L. Ter-Mikaelian, G.A. Torossian, and G.G. Grigoryan. Conical emission in the quasisresonant media as a result of self-phase modulation. Optics Communications, 119(1-2):56–60, 1995.
- [49] V. I. Vaichaitis, M. V. Ignatavichyus, V. A. Kudryashov, and Yu. N. Pimenov. Observation of a Cerenkov-type radiation during the propagation of picosecond light pulses in sodium vapor. JETP Lett., 45(7):p 414–6, 1987.
- [50] J.F. Valley, G. Khitrova, H.M. Gibbs, J.W. Grantham, and Xu Jiabin. CW conical emission: first comparison and agreement between theory and experiment. Physical Review Letters, 64(20):2362–5, 1990.
- [51] John Francis Valley. Nonlinear Optical Experiments in Sodium Vapor and Comparison with Doppler Broadened Two-Level-Atom Theory. PhD thesis, University of Arizona, 1989.
- [52] F. Vidal and T.W. Johnston. Electromagnetic beam breakup: multiple filaments, single beam equilibria, and radiation. Physical Review Letters, 77(7):1282–5, 1996.
- [53] D. H. Whiffen. Spectroscopy. Longmans Green and CO LTD, 1966.
- [54] L. You, J. Cooper, and M. Trippenbach. Alternative treatment for the initiation of superfluorescence. Journal of the Optical Society of America B, 8(5):1139–48, 1991.
- [55] L. You, J. Mostowski, J. Cooper, and R. Shuker. Cone emission from laser-pumped two-level atoms. Physical Review A, 44(11):R6998–7001, 1991.
- [56] Li You. Quantum Theory of the Propagation of Nonclassical Light in a Near-Resonant Medium and its Application to Cone Emission. PhD thesis, University of Colorado, 1993.