

Publications:

1. “Quantum theory of a lossless beamsplitter”, H. Fearn and R. Loudon, *Opt. Commun.* **64**, 485 (1987).
2. “Representation of squeezed states with thermal noise”, H. Fearn and M. J. Collett, *J. Mod. Opt.* **35**, 553 (1988).
3. “Theory of two-photon interference”, H. Fearn and R. Loudon, *J. Opt. Soc. Am.* **B6**, 917 (1989).
4. “Theory of two-photon correlations and Bell’s inequality”, H. Fearn, *J. Opt. Soc. Am.* **B6**, 2420 (1989).
5. “Two-photon interference”, H. Fearn, *NATO Advanced workshop on QED and quantum optics*, Istanbul, Turkey (1989).
7. “Coherence and correlations in quantum optics: I Theory”, M. O. Scully, H. Fearn and B. W. Atherton, *NATO Advanced workshop on QED and quantum optics*, Istanbul, Turkey (1989). Invited paper.
8. “Coherence and correlations in quantum optics: II Applications”, M. O. Scully, H. Fearn and B. W. Atherton, *NATO Advanced workshop on QED and quantum optics*, Istanbul, Turkey (1989). Invited paper.
9. “Lasing without inversion”, H. Fearn, *Proceedings of the 9th international workshop on laser interaction and related plasma phenomena*, Monterey, California, 6-10 Nov. (1989). Invited paper.
10. “Linear amplifiers and attenuators”, H. Fearn, *Quantum Optics*, **2**, 103 (1990).
11. “Correction to the golden rule”, H. Fearn and W. E. Lamb Jr., *Phys. Rev.* **A43**, 2124 (1991).
12. “Comment on the theory of lasers without inversion”, S. Y. Zhu, J. Cresser and H. Fearn, *Phys. Rev.*, **A43**, 5170 (1991).
13. “The effect of atomic decay on micromasers”, S. Y. Zhu, L. Z. Wang and H. Fearn, *Phys. Rev.*, **A44**, 737 (1991).
14. “Opportunity knocks for atomic interferometers”, H. Fearn and M. O. Scully, *Physics World*, **4**, 23 (1991). Invited paper.
15. “Theory of noise minimization in direct and phase-sensitive photodetection”, H. Fearn, R. Loudon and T. J. Shepherd, *J. Opt. Soc. Am.* **B8**, 2218 (1991).
16. “Lasing without inversion: I. Initial atomic coherence”, M. O. Scully, S. Y. Zhu and H.

Fearn, *Zeit. fur Physik* **D22**, 471, (1992).

17. “Lasing without inversion: II. Raman process created atomic coherence”, S. Y. Zhu, M. O. Scully, H. Fearn and L. Narducci, *Zeit. fur Physik* **D22**, 483, (1992).

18. “Lasing without inversion: III. Nonlinear theory of a three-level laser with microwave coupling”, H. Fearn, M. O. Scully and S. Y. Zhu, *Zeit. fur Physik* **D22**, 495 (1992).

19. “Lasing without inversion in a simple model of a three-level laser with microwave coupling”, *Optics Commun.* **87**, 323, (1992).

20. “Gain and threshold in noninversion lasers”, *Optics Commun.* **88**, 240, (1992).

21. “Computational approach to the quantum Zeno effect: Position measurements”, *Phys. Rev.* **A46**, 1199 (1992).

22. “Reply to the Comment by Home and Whitaker on the quantum Zeno effect”, *Phys. Rev.* **A48**, 2505 (1993).

23. “The micromaser welcher-weg detector revisited”, invited paper at the Trieste conference on Quantum Interferometry, (Eds. F. De Martini, G. Denardo and A. Zeilinger) (World Scientific, Singapore 1994).

24. “Comments on the Quantum Zeno Effect”, invited paper Nathiagali Summer School, Pakistan July 9-14 1994, published in, *Quantum Semiclass. Opt.* **7**, 211 (1995).

25. “The Aharanov-Bohm Effect Revisited”, invited paper Nathiagali Summer School, Pakistan 9-14 1994, published in, *Quantum Semiclass. Opt.* **7**, 205 (1995).

26. “Fizeau’s Experiment and the Aharanov-Bohm Effect”, published in the *Amer. Jour. of Phys.*, **63**, 705 (1995).

27. “Sudden Replacement of a Mirror by a Detector in Cavity QED: Are Photons Counted Immediately?”, *Phys. Rev. Letts.*, **74**, 1327, (1995).

28. “Photodetection and Causality in QED”, in collaboration with P. W. Milonni and D. James, *Phys. Rev.* **A52**, 1525 (1995).

29. “Theory of Two-Photon Down-Conversion in the Presence of Mirrors” in collaboration with P. W. Milonni Los Alamos, A. Zeilinger, *Phys. Rev.* **A53**, 4556, (1996).

30. “Complementarity, Uncertainty and Decoherence”, *Rev. Mod. Physics*, in progress with BG. Englert, M.O. Scully and H. Walther, (1995–6).

31. “Classical Theory of Measurement: Towards a quantum theory”, with W. E. Lamb, published in “Amazing Light: A Volume Dedicated to Charles Hard Townes on his 80th Birthday”, edited by R. Y. Chiao, (Springer Verlag, New York, 1996).

32. “Comment on Superluminality, Porelectricity and Earnshaw’s theorem in Media with Inverted Populations”, by R. Y. Chiao & J. Boyce”, by P. W. Milonni, D. F. V. James and H. Fearn, Phys. Rev. Letts. **75**, 3194 (1995).
33. “Microscopic Approach to Reflection, Transmission, and the Ewald–Oseen Extinction theorem”, with P. W. Milonni and D. F. V. James, Am. J. of Phys. **64**, 986 (1996).
34. “Dispersion Relations and Causality: Does Relativistic Causality require $n(\omega) \rightarrow 1$ as $\omega \rightarrow \infty$.” Journal of Modern Optics, **53**, Nos. 16-17, pp2569–2581,(2006).
35. Russian Conference proceedings paper CCFP’06 “Can signals travel faster-than-c in non-trivial vacua in flat space-time? Relativistic Causality II.” Laser Physics **17**, No. 5 pp 1–5 (2007).

In progress:

1. “On the flight of the American football” submitted to AJP 4th June 2007. With student Mr. Curtis Horn.
2. “The Gyro–ring”, to be submitted to The Physics Teacher June 2007. In progress. With student Ms. Graciela Flores.

Articles in Books:

1. Invited article on “Pauli’s Exclusion Principle”, with P. W. Milonni, for Macmillan Encyclopedia of Physics, to be published (1996).
2. Invited article on “Surface Tension”, for Macmillan Encyclopedia of Physics, to be published (1996).
3. Invited article on “Eddy Currents”, for Macmillan Encyclopedia of Physics, to be published (1996).
4. Invited article on “Levitation: Electromagnetic”, for Macmillan Encyclopedia of Physics, to be published (1996).

All papers were refereed unless otherwise stated.