

Colin Sparrow - Publications

1. Chaotic behaviour in single-loop feedback systems and in the Lorenz equations. Ph.D. thesis, Cambridge, 1980.
2. Bifurcations and chaotic behaviour in simple feedback systems. *J.Theo. Biol.* **83**, (1980), 93-105.
3. Chaos in a three-dimensional single-loop feedback system with a piecewise linear feedback function. *J. Math. Anal. and Applic.* **83(1)**, (1981), 275-291.
4. Frequency encoded biochemical regulation is more accurate than amplitude dependent control (with A.I. Mees and P. Rapp). *J.Theo. Biol.* **90**, (1981), 531-544.
5. Chaos (with A.I. Mees). *IEE Proc.* **128(D5)**, (1981), 201-205. [This paper won the Mather Premium Prize.]
6. *The Lorenz Equations: Bifurcations, Chaos and Strange Attractors*. Appl. Math. Sci. **41**, Springer-Verlag, (1982).
7. An introduction to the Lorenz equations. *IEE Trans. C.A.S.* **30**, (1983), 533-542.
8. Local and global behaviour near homoclinic orbits (with P. Glendinning). *J. Stat. Phys.* **35**, (1984), 645-696.
9. Homoclinic bifurcations in finite dimensional flows. *Proceedings of the 1984 Workshop on Instabilities in Continuous Media, International Union of Geodesy and Geophysics*, 178-184, (1985).
10. The Lorenz equations. Chapter 6 (pages 111-134), in *Chaos* (ed. A. Holden), Nonlinear Science: Theory and Applications series, Manchester University Press, (1986).
11. The Lorenz model. In *Optical Instabilities* (eds. R.W. Boyd, M.G. Raymer, L.M. Narducci), Cambridge Studies in Modern Optics **4**: 72-84, Cambridge University Press, ISBN 0-521-32239-1, (1986).
12. T-points: A codimension two heteroclinic bifurcation (with P. Glendinning). *J. Stat. Phys.* **43**, (1986), 479-488.
13. Some tools for analysing chaos (with A.I. Mees). *IEEE Trans. C.A.S.* **75** (8), (1987), 1058-1070.
14. Dynamics of unimodal maps. Lecture notes for the Trieste Summer School on Dynamical Systems. Unpublished, (1989), Cambridge.
15. The classification of topologically expansive Lorenz maps (with J. Hubbard). *Comms. Pure Appl. Math.* **43**, (1990), 431-443.
16. Bifocal homoclinic orbits (with A. Fowler). *Nonlinearity* **4** (4), (1991), 1159-1182.
17. Prime and renormalisable kneading invariants and the dynamics of expanding Lorenz maps (with P. Glendinning). *Physica D* (Special Issue on Homoclinic Chaos) **62**, (1993), 22-50.

18. Global bifurcations in finite dimensional flows. In *Nonlinear Dynamics and Spatial Complexity in Optical Systems* (R.G. Harrison and J.S. Uppal, eds.), 41-63. SUSSP Proceedings, IOP, 1993. (NATO summer school lectures.)
19. Dynamics of ordinary differential equations. In *Real and Complex Dynamical Systems* (B. Branner and P. Hjorth, eds.), 185-210, Series C: **464**, Kluwer, 1995. (NATO summer school lectures.)
20. The Falkner-Skan Equation I: The creation of strange invariant sets (with H.P.F. Swinnerton-Dyer) (1995). *J. Diff. Eqns* **199:2** 336-394.
21. Shilnikov's Saddle-Node Bifurcation (with P. Glendinning). *Int. J. of Bifurcation & Chaos*, **6** (1996) 1153-1160.
22. Existence of cycle-time vectors for minmax functions in dimension $n \leq 3$. HP-technical report. 1996.
23. Bifurcations in the Falkner-Skan Equation. In *Control and Chaos* (K Judd, A Mees, L Teo, T Vincent, eds.). Birkhauser Boston, 1997.
24. Continuous extension of order-preserving homogeneous maps (with A.D. Burbanks and R.D. Nussbaum). *Procs of IFAC Symposium, August 2001, Prague, Workshop on Max-Plus Algebras*.
25. The Falkner-Skan Equation II: Dynamics and the Bifurcations of P - and Q -orbits (with H.P.F. Swinnerton-Dyer). *J. Diff. Eqns* **183**, 1-55, 2002.
26. Continuous extension of order-preserving homogeneous maps (with A.D. Burbanks and R.D. Nussbaum). *Kybernetika* **39**(2), 205-215, 2003. (Revised version of 24.)
27. Extension of order-preserving maps on a cone (with A.D. Burbanks and R.D. Nussbaum). *Proc. Roy. Soc. Edinburgh* **133A**, 35-59, 2003.
28. *The Lorenz Equations: Bifurcations, Chaos and Strange Attractors*, Dover Publications, ISBN 0-486-44225-X, 2005. (A reprint of the 1982 book, item 6 above.)
29. A note on periodic points of order preserving subhomogeneous maps (with B. Lemmens), *Proc. Amer. Math. Soc.* **134**(5), 1513-1517, 2006.
30. Transitive actions of finite abelian groups of sup-norm isometries, (with B. Lemmens and M. Scheutzwow, *European Journal of Combinatorics*), **28**, 1163-1179, 2007.
31. Fictitious Play in 3×3 Games: The transition between periodic and chaotic behaviour, (with S. van Strien and C. Harris), *Games and Economic Behaviour*, **63**, 259-291, 2008.
32. Fictitious Play in 3×3 Games: Chaos and Dithering Behaviour, (with S. van Strien), *Games and Economic Behaviour*, **73**(1), 262-286, 2011.
33. Dynamics associated to games (fictitious play) with chaotic behavior, (with S. van Strien). In *Dynamics, Games and Science I*, eds M.M.Peixoto et al, Springer Proceedings in Mathematics 1, Chapter 48, 747-760, Springer-Verlag, 2011.