Roger Nussbaum

List of Mathematical Publications

Journals:

1. The topological degree for noncompact nonlinear mappings in Banach spaces (Felix E. Browder and Roger D. Nussbaum), Bull. of the AMS, **74** (1968), 671-676.
2. The fixed point index and asymptotic fixed point theorems for $k - set$-contractions, (Roger D. Nussbaum), Bull of the AMS, **75** (1969), 490-495.
3. Spectral mapping theorems and perturbation theorems for Browder's essential spectrum (Roger D. Nussbaum), Trans. of the AMS, **150** (1970), 445-455.
4. A generalization of the Ascoli theorem and an application to functional differential equations (Roger D. Nussbaum), Jour. of Math. Analysis and Appl., **35** (1971), 600-611.
5. The radius of the essential spectrum (Roger D. Nussbaum), Duke Jour. of Math., **38** (1970), 473-478.
6. Degree theory for local condensing maps (Roger D. Nussbaum), Jour. of Math. Analysis and Appl., **37** (1972), 741-766.
7. The fixed point index for local condensing maps (Roger D. Nussbaum), Annali di Matematica, **89** (1971), 217-258.
8. Asymptotic fixed point theorems for local condensing maps (Roger D. Nussbaum), Mathematische Annalen, **191** (1971), 181-195.
9. Estimates for the number of solutions of operator equations (Roger D. Nussbaum), Applicable Analysis, **1** (1971), 183-200.
10. A geometric approach to the fixed point index (Roger D. Nussbaum), Pac. Jour. of Math., **39** (1971), 751-766.
11. Some fixed point theorems (Roger D. Nussbaum), Bull. of the AMS, **77**, #3 (1971), 360-365.
12. The ball intersection property for Banach spaces (R. D. Nussbaum), Bull of the Polish Acad. of Sci., **19**, #10 (1971), 931-936.
13. Existence and uniqueness theorems for some functional differential equations of neutral type (Roger D. Nussbaum), Jour. of Diff. Equations, **2** (1972), 607-623.
14. Some asymptotic fixed point theorems (Roger D. Nussbaum), Trans.AMS, **171** (1972), 349-375.
15. Periodic solutions of some nonlinear autonomous functional differential equations (Roger D. Nussbaum), Annali di Matematica, **CI** (1974), 263-306.
16. Periodic solutions of analytic functional differential equations are analytic (Roger D. Nussbaum), Mich. Math. Jour. **20** (1973), 249-255.

17. Periodic solutions of autonomous functional differential equations (Roger D. Nussbaum), Bull. of the AMS, **79** (1973), 811-814.
18. Periodic solutions of some nonlinear autonomous functional differential equations, II, J. Diff. Equations, **14** (1973), 360-394.
19. Positive solutions of nonlinear elliptic boundary value problems (Roger D. Nussbaum), J. Math. Anal. & Appl., **51** (1975), 461-483.
20. A global bifurcation theorem with applications to functional differential equations (Roger D. Nussbaum), J. Funct. Anal., **19** (1975), 319-339.
21. On the uniqueness of the topological degree for $k - set$ contractions (Roger D. Nussbaum), Math. Zeit., **137** (1974), 1-6.
22. Global bifurcation of periodic solutions of some autonomous functional differential equations (Roger D. Nussbaum), J. Math. Anal. Appl., **55** (1976), 699-725.
23. A singular bifurcation problem (Roger D. Nussbaum and Charles.A.Stuart), J.London Math. Soc., **14** (1976), 31-38.
24. The range of periods of periodic solutions of $x'(t) = \alpha f(x(t-1)$ (Roger D. Nussbaum), J. Math. Anal. & Appl., **58** (1977), 280-292.
25. Some generalizations of the Borsuk-Ulam theorem (Roger D. Nussbaum), Proc. of London Math. Soc., **35** (1977), 136-158.
26. A periodicity threshold theorem for some nonlinear integral equations (Roger D. Nussbaum), SIAM Jour. Math. Anal., **9** (1978), 356-376.
27. A Hopf global bifurcation theorem for retarded functional differential equations (Roger D. Nussbaum), Trans. AMS, **238** (1978), 139-164.
28. Generalizing the fixed point index (Roger D. Nussbaum), Math. Ann., **228** (1977), 259-278.
29. Periodic solutions of special differential-delay equations: an example in nonlinear functional analysis (Roger D. Nussbaum), *Proc. Royal Soc. Edinburgh*, **81** (1978), 131-151.
30. Differential delay equations with two time lags (Roger D. Nussbaum), Memoirs of AMS, No. **205** (September, 1978).
31. Uniqueness and nonuniqueness for periodic solutions of $x'(t) = g(x(t-1)$ (Roger D. Nussbaum), Jour. Diff. Equations, **34** (1979), 25-54.
32. A quadratic integral equations (Roger D. Nussbaum), Annali Scuola Norm. Sup. — Pisa, **7** (1980), 375-480.
33. A quadratic integral equation, II (Roger D. Nussbaum), Indiana Univ. Math. Jour., **30** (1981), 871-905.
34. A nonlinear integral equation (Nancy Baxter and Roger D. Nussbaum), Nonlinear Analysis, Theory, Methods & Appl., **5** (1981), 1285-1307.
35. Degree theory (Roger D. Nussbaum), by N.G.Lloyd; Bull. AMS, July, 1979, 632-636.

36. A priori estimates for positive solutions of semilinear elliptic equations (with P.L.Lions & D.DeFigueiredo, Roger D. Nussbaum), Journal de Mathematiques Pures et Appliquee, **61** (1982), 41-63.
37. Asymptotic analysis of functional differential equations and solutions of long period, Archive of Rational Mech. & Anal. (Roger D. Nussbaum), **81** (1983), 373-397.
38. Cyclic differential equations and period three solutions of differential-delay equations (R. D. Nussbaum and A.J.B.Potter), Jour. of Diff. Equations, **46** (1982), 379-408.
39. Special and spurious solutions of $x'(t) = -\alpha f(x(t-1))$ (with H.-O. Peitgen) (Roger D. Nussbaum), Memoirs of the AMS, **310**, September, 1984.
40. Quasinormal cones in Banach spaces (with E. Norman Dancer & C.Stuart, R. Nussbaum), Nonlinear Analysis, Theory, Method & Appl., **7** (1983), 539-553.
41. A folk theorem in the spectral theory of C_o-semigroups (Roger D. Nussbaum), Pac. Jour. of Math., **113**, (1984), 433-449.
42. Positive operators and elliptic eigenvalue problems (Roger D. Nussbaum), Mathematische Zeitschrift, **186** (1984), 247-264.
43. Global continuation and asymptotic behavior for periodic solutions of a differential-delay equation (R. Nussbaum and J.Mallet-Paret), Annali di Matematica Pura ed Applicata, **145** (1986), 33-128.
44. Uniqueness and nonuniqueness for positive radial solutions of $\Delta u + f(u, r) = 0$ (Roger D. Nussbaum and Wei-Ming Ni), Comm. on Pure & Appl. Math., **38** (1985), 67-108.
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46. Some remarks on a conjecture in parameter adaptive control (Roger D.Nussbaum), Systems & Control Letters, **3** (1983), 243-246.
47. Circulant matrices and differential-delay equations (Roger D. Nussbaum), J. of Diff. Equations, **60** (1985), 201-217.
48. Convexity and log convexity for the spectral radius (Roger D. Nussbaum), Linear Algebra and Applications, **73** (1986), 59-122.
49. The Fixed Point Index and Some Applications (Roger D. Nussbaum), Lecture Notes, Seminaire de Mathematiques Superieures at the Univ. of Montreal (1983), Les Presses de l'Universite de Montreal, **94** (1985), 1-145.
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59. Some remarks on differential equations of quadratic type (Shiro Ishikawa and Roger D. Nussbaum), in *Journal of Dynamics and Differential Equations*, **3** (1991), 457-490.
60. Convexity properties of generalizations of the arithmetic-geometric mean (Joel E. Cohen and Roger D. Nussbaum), *Numer. Funct. Anal. and Optimiz.*, **11** (1990), 33-44
61. Convergence of iterates of a nonlinear operator arising in statistical mechanics (Roger D. Nussbaum), *Nonlinearity*, **4** (1991), 1223-1240.
62. Estimates of the periods of periodic points for nonexpansive operators (Roger D. Nussbaum), Israel J. of Mathematics, **76** (1991), 345-370.
63. On variational principles for the generalized principal eigenvalue of second order elliptic operators and their applications (Roger D. Nussbaum and Yehuda Pinchover), *Journal D′Analyse Mathematique*, **59** (1992), 161-177.
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66. Lattice isomorphisms and iterates of nonexpansive maps (Roger D. Nussbaum), *Nonlinear Analysis, T.M. and A.*, **22** (1994) 945-970.
67. Entropy minimization, Hilbert's projective metric, and scaling integral kernels, *Journal of Functional Analysis*, **115** (1993), 45-100.
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70. An elementary proof of the Birkhoff-Hopf theorem (Simon P. Eveson and Roger D. Nussbaum), *Math. Proc. Cambridge Phil. Society*, **117** (1995), 31-55.
71. Applications of the Birkhoff-Hopf theorem to the spectral theory of positive linear operators, (Simon P. Eveson and Roger D. Nussbaum), *Math. Proc. Cambridge Phil. Society*, **117** (1995), 491-512.
72. Periodic solutions for functional differential equations with multiple state dependent time lags (J. Mallet-Paret, R.D. Nussbaum and P. Paraskevopoulos), *Topological Methods in Nonlinear Analysis*, **3** (1994), 101-162.
73. Finsler structures for the part metric and Hilbert's projective metric and applications to ordinary differential equations (Roger D. Nussbaum), *Differential and Integral Equations*, **7** (1994), 1649-1707.
74. Approximation by polynomials with nonnegative coefficients and the spectral theory of positive operators (Roger D. Nussbaum and Bertram Walsh), *Transactions of the American Math. Society*, **350** (1998), 2367-2391.
75. Admissible arrays and periodic points of nonexpansive maps (Roger D.Nussbaum and Michael Scheutzow), *Journal of the London Math. Soc.*, **58** (1998), 526-544.
76. Eigenvectors of order-preserving linear operators (Roger D. Nussbaum), *Journal of the London Math. Soc.*, **58** (1998), 480-496.
77. Generalizations of the Perron-Frobenius theorem for nonlinear maps (Roger D. Nussbaum and Sjoerd Verduyn Lunel), *Memoirs of the Amer. Math. Soc.*, **138**, #659, March, 1999.
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80. Periodic solutions for a nonlinear convolution equation, (Roger D. Nussbaum and A. Asselah), J. of Integral Equations and Operator Theory, **42** (2002), 385-424.
81. Boundary layer phenomena for differential-delay equations with state-dependent time lags: III, (Roger D. Nussbaum and J. Mallet-Paret), J. of Differential Equations, **189** (2003), 640-692.
82. Periodic points of positive linear operators and Perron-Frobenius operators, (Roger D. Nussbaum), J. of Integral Equations and Operator Theory, **39** (2001), 41-97.
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Stephen Greenfield), J. of Differential Equations, **169** (2001), 57-141.

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87. Spectral theory for some Perron-Frobenius operators in L^p spaces, in preparation.
88. Dynamics of a quadratic Fibonacci map, II, (Stephen Greenfield and Roger Nussbaum), in preparation.
89. A basis theorem for a class of max-plus equations, (John Mallet-Paret and Roger D. Nussbaum), J. of Differential Equations, **189** (2003), 616-639.
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93. Uniqueness of the fixed point of nonexpansive semi-differentiable maps (Marianne Akian, Stephane Gaubert and Roger D. Nussbaum), to appear in *Trans. Amer. Math. Soc.*, (in 2014), available at arXiv:1201.1536v2.
94. Iteration of order-preserving, subhomogeneous maps on a cone (M. Akian, S. Gaubert, B. Lemmens and R. Nussbaum), *Math. Proc., Cambridge, Phil. Soc.*, **140** (2006), 157-176.
95. Global stability of fixed points, Two conjectures and Maple (R. Nussbaum), *Nonlinear Analysis, T.M. and A.*, **66** (2007), 1064-1090.
96. Iterated linear maps on a cone and Denjoy-Wolff theorems (Brian Lins and Roger Nussbaum), *Linear Algebra and its Applications*, **416** (2006), 615-626.
97. Fixed point theorems and Denjoy-Wolff theorems for Hilbert's projective metric in infinite dimensions (R. Nussbaum), *Topological Methods in Nonlinear Analysis*, **29** (2007), 199-249.
98. Denjoy-Wolff theorems, Hilbert metric nonexpansive maps and reproduction-decimation operators, (Brian Lins and Roger Nussbaum), *J. Functional Analysis*, **254** (2008), 2365-2386.
99. Inequivalent measures of noncompactness and the radius of the essential spectrum (John Mallet-Paret and Roger Nussbaum), *Proc. Amer. Math. Soc.*, **139** (2011),

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104. Super-stability and rigorous asymptotics in singularly perturbed, state-dependent delay-differential equations, (John Mallet-Paret and Roger Nussbaum), *Journal of Differential Equations*, **250** (2011), 4037-4084.
105. Periodic solutions of differential-delay equations, limiting profiles and Airy functions, (John Mallet-Paret and Roger Nussbaum), in preparation.
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112. Analyticity and Nonanalyticity of Solutions of Differential-Delay Equations, (John Mallet-Paret and Roger D. Nussbaum), *SIAM J. Math Analysis*, **46**, No.4, (2014), 2468-2500, available at arXiv:1305.0579v2.
113. Analytic Solutions of Delay-Differential Equations, (John Mallet-Paret and Roger D. Nussbaum), in preparation.

114. Asymptotic Homogeneity and a Question of Analyticity, (John Mallet-Paret and Roger D. Nussbaum), in preparation.

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1. Bifurcation theory and periodic solutions of some autonomous functional differential equations (Roger D. Nussbaum), Proc. Brown Univ. Conf. on Dynamical Systems, Vol. II (Academic Press) (1976), 99-102. (refereed).
2. Periodic solutions of some nonlinear integral equations, in *Dynamical Systems, Proc. of a Univ. of Florida Int. Symp.*, Ed. by A. Bednarek & L. Cesari, R. Nussbaum, Academic Press, NY (1977), 221-251. (refereed).
3. Periodic solutions of some integral equations from the theory of epidemics, *Nonlinear Systems & Appl., An International Conf.* ed. by V. Lakshmikantham, R. Nussbaum Academic Press, NY (1977), 235-257. (refereed).
4. Eigenvectors of nonlinear positive operators and the linear Krein-Rutman theorem, *Fixed Point Theory* (Roger D. Nussbaum), Springer-Verlag Lecture Notes in Math., **886**, 309-330. (refereed).
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6. Asymptotic analysis of some functional differential equations (Roger D. Nussbaum), *Dynamical Systems II, An International Symposium*; edited by A.Bednarek & L. Cesari, Academic Press, NY, 1982, 41-63. (refereed).
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