

Barnabas M. Garay: List of Publications February, 2008

BOOK CHAPTERS

1. (with Á.Elbert) Differential equations: Hungary, the extended first half of the 20th century, In: *A Panorama of Hungarian Mathematics in the Twentieth Century I.*, Springer, Berlin, 2005, pp. 245-294.

JOURNAL PAPERS

62. (with G.Colombo, M.Fečkan) Multivalued perturbations of a saddle dynamics, *Diff. Eq. Dyn. Syst.* (in print)
61. (with L.O.Chua) Isles of Eden and the ZUK Theorem in \mathbf{R}^d , *Int. J. Bifurc. Chaos* 18(2008), 2951-2963.
60. (with B.Bánhelyi, T.Csendes, L.Hatvani) A computer-assisted proof for Σ_3 -chaos in the forced damped pendulum equation, *SIAM J. on Appl. Dyn. Syst.* 7(2008), 843-867.
59. (with P.L.Simon) Bifurcation analysis of an oscillatory CNN model with two cells, *J. Appl. Math. Computing* 27(2008), 199-210.
58. (with L.Lóczy) Discretizing the fold bifurcation — A conjugacy result, *Per. Math. Hungar.* 56(2008), 37-53.
57. (with B.Bánhelyi, T.Csendes) Optimization and the Miranda approach in detecting horseshoe-type chaos by computer, *Int. J. Bifurc. Chaos* 17(2007), 735-748.
56. (with B.Bánhelyi, T.Csendes, L.Hatvani) Computer assisted proof of chaotic behaviour of the forced damped pendulum, *Folia FSN Universitatis Brunensis* 16(2006), 9-20.
55. (with B.Bánhelyi, T.Csendes) A verified optimization technique to locate chaotic regions of a Hénon system, *J. Global Optimiz.* 35(2006), 145-160.
54. (with L.Hatvani, J.Kolumbán) The centenary of L. Fejér's Kolozsvár University habilitation in stability theory, *Alk. Mat. Lapok* 23(2006), 163-189. (in Hungarian)
53. (with K.H.Lee) Attractors and invariant manifolds under discretization with variable stepsize, *Discrete Contin. Dyn. Syst.* 13(2005), 827-841.
52. A brief survey on the numerical dynamics of functional differential equations — Gyula Farkas (1972-2002) in Memoriam, *Int. J. Bifurc. Chaos*, 15(2005), 729-742.
51. A functional equation characterizing monomial functions used in permanence theory for ecological differential equations, *Acta Math. Univ. Jagiellonicae* 42(2004), 69-76.
50. (with L.Lóczy) Monotone delay equations and Runge-Kutta discretization, *Funct. Differ. Equ.* 11(2004), 59-67.
49. (with J.Hofbauer) Robust permanence for ecological equations, minimax, and discretization, *SIAM. J. Math. Anal.* 34(2003), 1007-1039.
48. (with J.Garay) Total separation and asymptotic stability, *Acta Math. Univ. Jagiellonicae* 40(2002), 125-136.
47. (with W.-J.Beyn) Estimates of variable stepsize Runge-Kutta methods for sectorial evolution equations with nonsmooth data, *Appl. Numer. Math.* 41(2002), 369-400.
46. (with S.Hilger) Embeddability of time scale dynamics in ODE dynamics, *Nonlin. Anal.* 47(2001), 1357-1371.
45. (with P.L.Simon) Numerical flow-box theorems under structural assumptions, *IMA J. Numer. Anal.* 21(2001), 1-17.
44. (with P.L.Simon) The local flow-box theorem for discretizations. The analytic case, *J. Difference Eq. Appl.* 7(2001), 345-381.
43. Estimates in discretizing normally hyperbolic compact invariant manifolds of ordinary differential equations, *Computers Math. Applic.* 42(2001), 1103-1122.
42. (with G.Farkas) The operator of inversion as an everywhere continuous nowhere differentiable function, *Results in Math.* 38(2000), 235-260.
41. (with G.Farkas) A nondifferentiability result for the inversion operator between Sobolev spaces, *J. Anal. Appl.* 19(2000), 639-654.
40. (with J.Garay) Genetical reachability: When does a sexual population realize all phenotypic states? *J. Math. Biol.* 37(1998), 146-154.
39. Some remarks on Wazewski's retract principle, *Acta Math. Univ. Jagiellonicae* 36(1998), 97-105.
38. The discretized flow on domains of attraction: a structural stability result, *IMA J. Numer. Anal.* 18(1998), 77-90.
37. (with P.Kloeden) Discretization near compact invariant sets, *Random Comput. Dyn.* 5(1997), 93-123.
36. (with J.Hofbauer) Chain recurrence and discretization, *Bull. Austral. Math. Soc.* 55(1997), 63-71.

35. On C^j -closeness between the solution flow and its numerical approximations, *J. Difference Eq. Appl.* 2(1996), 67-86.
34. On various closeness concepts in numerical ODE's, *Computers Math. Applic.* 31(1996), 113-119.
33. On structural stability of ordinary differential equations with respect to numerical methods, *Numer. Math.* 72(1996), 449-479.
32. (with B.Aulbach) Discretization of semilinear differential equations with an exponential dichotomy, *Computers Math. Applic.* 28(1994), 23-35.
31. Discretization and Morse-Smale dynamical systems on planar discs, *Acta. Math. Univ. Comenianae* 63(1994), 25-38. Erratum, *ibid.* 64(1995), 153-153.
30. Discretization and normal hyperbolicity, *Z. angew. Math. Mech.* 74(1994), T662-T663.
29. (with B.Aulbach) Partial linearization for noninvertible mappings, *Z. angew. Math. Phys.* 45(1994), 505-542.
28. (with G.Colombo) Existence results for infinite dimensional differential equations without compactness, *Rend. Sem. Math. Univ. Padova* 92(1994), 127-133.
27. Discretization and some qualitative properties of ordinary differential equations about equilibria, *Acta Math. Univ. Comenianae* 62(1993), 249-275.
26. (with B.Aulbach) Linearizing the expanding part of noninvertible mappings, *Z. angew. Math. Phys.* 44(1993), 469-494.
25. Parallelizability, mild mixing and topological conjugacy for strongly continuous real-parameter groups of unitary operators, *J. London Math. Soc.* 47(1993), 533-541.
24. (with A.Capietto) Saturated invariant sets and the boundary behaviour of differential systems, *J. Math. Anal. Appl.* 176(1993), 166-181.
23. Chain-recurrent subsets of ∂R_+^p as ω -limit sets, *Comm. Math. Univ. Sanctii Pauli* 41(1992), 23-34.
22. Deleting homeomorphisms and the failure of Peano's existence theorem in infinite-dimensional Banach spaces, *Funkc. Ekvac.* 34(1991), 85-93.
21. Strong cellularity and global asymptotic stability, *Fundam. Math.* 138(1991), 147-154.
20. Cross-sections of solution funnels in Banach spaces, *Studia Math.* 97(1990), 13-26.
19. An interpretation of Cellina's example: negligibility via the failure of Peano's theorem, *Acta Math. Szeged.* 54(1990), 115-127.
18. Uniform persistence and chain recurrence, *J. Math. Anal. Appl.* 139(1989), 372-381.
17. Parallelizability in Banach spaces: applications of negligibility theory, *Acta Math. Hungar.* 53(1989), 3-22.
16. Parallelizability in Banach spaces: a parallelizable dynamical system with uniformly bounded trajectories, *Proc. Royal Soc. Edinburgh* 108A(1988), 371-378.
15. (with A.P.Bosznay) On a geometric problem concerning discs, *Acta Math. Szeged.* 52(1988), 325-329. Erratum, *ibid.* 54(1990), 209-210.
14. (with M.Farkas, I.V.Nagy, G.Szabo, L.Szepkuti) Modelling of depth filtration, *Ann. Univ. Budapest Sect. Comput.* 7(1987), 67-73.
13. Metrization and Liapunov functions V, *Acta Math. Hungar.* 50(1987), 111-115.
12. (with A.P.Bosznay) Remetrization and a new type of recurrence, *Funkc. Ekvac.* 30(1987), 57-68.
11. (with J.J.Schaeffer) More on uniqueness without continuous dependence in infinite dimension, *J. Diff. Eq.* 64(1986), 48-50.
10. (with A.P.Bosznay) On norms of projections, *Acta Math. Szeged.* 50(1986), 87-92.
9. On a theorem of Halkin, *Ann. Univ. Budapest Sect. Math.* 28(1985), 129-131.
8. Auslander recurrence and metrization via Liapunov functions, *Funkc. Ekvac.* 28(1985), 299-308.
7. A metric characterization of compact plane retracts and applications, *Ann. Mat. pura appl.* 139(1985), 329-340.
6. (with V.Kertesz) Estimates by Lozinsky's functional improved in the linear autonomous case, *Z. Anal. Anw.* 3(1984), 87-95.
5. On dynamical systems in metric spaces: metrics as Liapunov functions, *Nonlin. Anal.* 8(1984), 1033-1042.
4. Metrization and Liapunov functions III, *Acta Math. Hungar.* 44(1984), 379-387.
3. Metrization and Liapunov functions II, *Acta Math. Hungar.* 44(1984), 157-167.
2. Metrization and Liapunov functions I, *Acta Math. Hungar.* 42(1983), 337-348.
1. On controllably periodic perturbations of autonomous functional differential equations, *Acta Math. Hungar.* 34(1979), 317-320.

17. (with B.Bánhelyi, T.Csendes), A computer-assisted proof of chaotic behaviour of the area-preserving Hénon map, *Proceedings of the Symposium on Nonlinear Theory and its Applications, Budapest, 7 - 10 September*, NOLTA, 2008, 596-599. (electronic)
16. (with R.Csikja, J.Tóth) On some chaotic properties of the β -hysteresis transformation, *Proceedings of the Symposium on Nonlinear Theory and its Applications, Budapest, 7 - 10 September*, NOLTA, 2008, 191-194. (electronic)
15. (with B.Bánhelyi, T.Csendes) Rigorous lower bounds for the topological entropy via a verified optimization technique, *Proceedings of the Symposium on Scientific Computing, Computer Arithmetic and Validated Numerics, Duisburg, 26 - 29 September 2006*, IEEE, 2007, pp. 10. (electronic)
14. (with S.Hilger and P.E.Kloeden) Continuous dependence with respect to time scales, In: *New Progress in Difference Equations (Augsburg, 2001)*, Chapman and Hall/CRC, Boca Raton, 2004, pp. 279-287.
13. Hyperbolic structures in ODE's and their discretization, with an Appendix on Differentiability properties of the inversion operator, In: *Nonlinear Analysis and Boundary Value Problems for Ordinary Differential Equations (Udine,1995)*, Springer, Wien, 1996, pp.149-173.
12. Omega-limit sets in Banach spaces, In: *Qualitative Theory of Differential Equations (Budapest,1991)*, North Holland, Amsterdam, 1992, pp.139-158.
11. (with B.Aulbach) Linearization and decoupling of dynamical and semidynamical systems, In: *Differential and Difference Equations (Plovdiv,1991)*, World Scientific, Singapore, 1992, pp.15-27.
10. Parallelizability in Banach spaces: parallelizable systems with bounded trajectories, *Banach Center Publ.* 23(1989), 25-31.
9. Permanence, within the framework of Conley's theory on isolated invariant sets, *Z. angew. Math. Mech.* 69(1989), T59-T61.
8. Sections of solution funnels and continuous dependence on initial conditions, In: *Qualitative Theory of Differential Equations (Szeged,1988)*, North Holland, Amsterdam, 1989, pp.199-209.
7. On the geometric theory of ODE's in Banach spaces, In: *Nonlinear Oscillations (Budapest,1987)* Hungarian Academy of Sciences, Budapest, 1987, pp.398-401.
6. Metrization and Liapunov functions IV, In: *Qualitative Theory of Differential Equations (Szeged,1984)* North Holland, Amsterdam, 1985, pp.305-328.
5. Metrics of Liapunov type, In: *Nonlinear Oscillations (Varna,1984)*, Bulgarian Academy of Sciences, Sofia, 1984, pp.592-595.
4. On an optimal choice of steps in Euler's method, In: *Differential Equations and Functional Analysis (Moscow,1980)*, UDN Lumumba University, Moscow, 1983, pp.28-33. (in Russian)
3. On metrics of Liapunov type, *Z. angew. Math. Mech.* 63(1983), T47-T48.
2. Metrics and level surfaces of Liapunov functions, *Z. angew. Math. Mech.* 61(1981), T238-T240.
1. Controllably periodic perturbations of autonomous functional differential equations, In: *Qualitative Theory of Differential Equations (Szeged,1979)*, North Holland, Amsterdam, 1980, pp.267-276.