

**LIST OF PUBLICATIONS**  
(in reverse chronological order)

*Book*

- Evolution Semigroups in Dynamical Systems and Differential Equations, Math. Surv. Monogr. **70** AMS, Providence, RI, 361 pp., 1999 (with C. Chicone).

*Papers, available in English*

93. Stability of traveling waves for degenerate systems of reaction diffusion equations, preprint (with A. Ghazaryn and S. Shechter).
92. Stability of gasless combustion fronts in one-dimensional solids, preprint (with A. Ghazaryn, S. Shechter, A. de Suoza).
91. Perturbations of strongly continuous operator semigroups, and matrix Muckenhoupt weights, *Functional Analysis and Its Applications*, **42** (2008) 234-238 (with G. Gubreev).
90. Derivatives of (modified) Fredholm determinants and stability of standing and traveling waves, *J. Math. Pures Appl.*, **90** (2008) 160-200 (with F. Gesztesy and K. Zumbrun).
89. The spectral mapping property of delay semigroups, *Complex Anal. Oper. Theory*, **2** (2008) 273-283 (with A. Bátkai and T. Eisner).
88. The Dichotomy Theorem for evolution bi-families, *J. Differential Equations*, **245** (2008) 2267-2306. (with A. Pogan)
87. Center manifolds and dynamics near equilibria of quasilinear parabolic systems with fully nonlinear boundary conditions, *Discr. Cont. Dynam. Syst. Ser. B*, **9** (2008) 595-633 (with J. Pruss and R. Schnaubelt).
86. Scattering in a forked-shaped waveguide, *Integral Eqns. Operator Theory*, **61** (2008) 365-399 (with V. Pivovarchik).
85. Stable and unstable manifolds for quasilinear parabolic systems with fully nonlinear boundary conditions, *J. Evolution Equations*, **6** (2006) 535 – 576 (with J. Pruss and R. Schnaubelt)
84. Evans functions, Jost functions, and Fredholm determinants, *Archive Rational Mech. Anal.*, **182** (2007) 361-421 (with F. Gesztesy and K. A. Makarov)
83. Non-self-adjoint operators, infinite determinants, and some applications, *Russian J. Math. Phys.* **12**, No 4 (2005) 443-471 (with F. Gesztesy, M. Mitrea, and M. Zinchenko).

82. Dichotomy and Fredholm properties of evolution equations, *Journal Operator Theory*, **58** (2007) 387-414 (with A. Pogan and R. Schnaubelt)
81. Fredholm determinants and the Evans function for difference equations, *Banach Center Publications*, **75** (2007) 111-135 (with D. Cramer).
80. Fredholm properties of evolution semigroups, *Illinois J. Math.*, **48** (2004) 999-1020 (with Y. Tomilov).
79. Regularization and frequency domain stability of well posed systems, *Mathematics of Control, Signals, and Systems*, **17** (2005) 128-151 (with R. Schnaubelt and T. Randolph).
78. Fredholm differential operators with unbounded coefficients, *J. Diff. Eqns.*, **208** (2005) 388-429 (with Y. Tomilov).
77. Spectral analysis of Darboux transformations for the focusing NLS hierarchy, *J. d'Anal. Math.*, **93** (2004) 139-197 (with F. Gesztesy, R. Cascaval, and H. Holden).
76. Essential spectrum of the linearized 2D Euler equation and Lyapunov-Oseledets exponents. *J. Math. Fluid Mech.*, **7** (2005) 164–178 (with R. Shvidkoy).
75. Operator valued Fourier multipliers and stability of strongly continuous semigroups. *Integral Eqns. Oper. Theory* **51** (2005) 375-394 (with F. Rübiger).
74. The essential spectrum of the linearized 2D Euler operator is a vertical band. *Contemp. Math.* **327** (2003) 299–304. (with R. Shvidkoy).
73. Gearhart-Prüss Theorem in stability for wave equations: a survey. *Lect. Notes Pure Appl. Math.*, **234** (2003) 105–120 (with D. Cramer).
72. Linear stability in an ideal incompressible fluid. *Comm. Math. Phys.*, **233** (2003), 439–461 (with M. Vishik).
71. A sharp formula for the essential spectral radius of the Ruelle transfer operator on smooth and Hölder spaces. *Ergodic Theory & Dynamical Systems*, **23** (2003) 175–191 (with V. M. Gundlach)
70. Hyperbolicity of semigroups and Fourier multipliers, In: *Systems, Approximation, Singular Integral Operators, and Related Topics*, International Workshop on Operator Theory and Applications, IWOTA 2000, eds. Alexander A. Borichev and Nikolai K. Nikolski, *Oper. Theory Adv. Appl.* **129** (2001) 341–364 (with R. Shvydkoy).
69. A spectral mapping theorem and invariant manifolds for nonlinear Schrödinger equations, *Indiana University Math. Journal*, **49** (2000) 221–243. (with F. Gesztesy, C. Jones, and M. Stanislavova).

68. Stability radius and internal versus external stability in Banach spaces: an evolution semigroup approach, *SIAM J. Control and Optimization*, **38** (2000) 1757–1793 (with S. Clark, S. Montgomery-Smith, and T. Randolph).
67. The spectral mapping theorem for evolution semigroups on  $L^p$  associated with strongly continuous cocycles. *Semigroup Forum*, **59** (1999) 404–414 (with R. Schnaubelt).
66. Evolution semigroups, translation algebras, and exponential dichotomy of cocycles, *J. Diff. Eqns.*, **159** (1999) 321–369 (with R. Schnaubelt).
65. Optimal gap condition for invariant manifolds, *Continuous and Discrete Dynamical Systems*, **5** (1999) 233–268 (with B. Layton).
64. Exponential dichotomy and mild solutions of nonautonomous equations in Banach spaces, *J. Dynamics Diff. Eqns.*, **10** (1998) 489–510 (with T. Randolph and R. Schnaubelt).
63. Center manifolds for infinite dimensional nonautonomous differential equations. *J. Diff. Eqns.*, **141** (1997) 356–399 (with C. Chicone).
62. The geodesic flow generates a fast dynamo: an elementary proof. *Proc. Amer. Math. Soc.*, **125** (1997) 3391–3396. (with C. Chicone).
61. Evolution semigroups and stability of time-varying systems on Banach spaces. *Proc. 36-th IEEE Conf. on Decision and Control*, San Diego, CA, December 1997, pp. 3932–3937 (with S. Clark and T. Randolph).
60. Essential spectral radius of Ruelle’s operator on smooth and Hölder spaces. *Comp. Rend. Acad. Sci. Paris*, **325**, Serie I (1997) 889–894 (with M. Gundlach).
59. Sharp estimates in Ruelle theorems for matrix transfer operators. *Commun. Math. Phys.*, **185** (1997) 379–396 (with J. Campbell).
58. The annular hull theorems for the kinematic dynamo operator for an ideally conducting fluid. *Indiana Univ. Math. J.* **45** (1996) 361–379 (with C. Chicone and S. Montgomery-Smith).
57. Evolutionary semigroups and dichotomy of linear skew-product flows on locally compact spaces with Banach fibers. *J. Diff. Eqns.*, **125** (1996) 73–116. (with S. Montgomery-Smith and T. Randolph).
56. Spectral properties of weighted composition operators and hyperbolicity of linear skew-Product flows. *Illinois J. Math.*, **40** (1996) 21–29.
55. Chemical reactor dynamics: stability of steady states. *Math. Methods in Appl. Sci.*, **19** (1996) 381–400. (with C. Chicone and D. Retzloff).

54. The spectrum of the kinematic dynamo operator for an ideally conducting fluid. *Commun. Math. Phys.*, **173** (1995) 379–400 (with C. Chicone and S. Montgomery-Smith).
53. Dichotomy of differential equations on Banach Spaces and an algebra of weighted translation operators. *J. Integr. Eqns Oper. Th.*, **23** (1995) 472–500. (with T. Randolph).
52. Dichotomy and  $H^\infty$  functional calculi. *Electr. J. Diff. Eqns.*, **13** (1995) 1–20 (with R. deLaubenfels).
51. Evolutionary semigroups and Lyapunov theorems in Banach spaces. *J. of Funct. Anal.* **127**, no. 1 (1995) 173 – 197 (with S. Montgomery-Smith).
50. Quadratic Lyapunov functions for linear skew-product flows and weighted composition operators. *Diff. and Integr. Eqns.*, **8**, no. 2 (1995) 289–307 (with C. Chicone).
49. Hyperbolicity and dissipativity. *In: Evolution Equations, Lect. Notes in Pure and Appl. Math.* **168** (1994) 95–106 (with C. Chicone).
48. Lyapunov theorems for Banach spaces. *Bulletin of AMS*, **31**, no. 1 (1994) 44–49 (with S. Montgomery-Smith).
47. Green’s function, continual weighted composition operators along trajectories, and hyperbolicity of linear extensions for dynamical systems. *J. Dynamics and Diff. Eqns.*, **6**, no 1 (1994) 1–21.
46. Boundary value problems for functions analytic on multiply connected domains on spaces with a general weight. *In: Oper. Theor. Adv. Appl.* (1993) 350–360 (with D. Kurtz and I. Spitkovsky).
45. Exact Lyapunov exponents and exponentially separated cocycles. *In: Partial Differential Equations.* Editors: J. Hale and J. Wiener, Longman Publ. **273** (1992) 91–95.
44. Weighted composition operators and linear extensions of dynamical systems. *Uspekhi Mat. Nauk*, **46**, no. 2 (1991) 85–143. English translation: *Russian Math. Surveys*, **46**, no. 2 (1991) 95–165 (with Stepin A.M.)
43. Linear skew-product flows and semigroups of weighted composition operators. *Lecture Notes Math.*, **1486** (1991) 98–111 (with A. M. Stepin).
42. Weighted shift operators, spectral theory of linear extensions, and the multiplicative ergodic theorem. *Matem. Sbornik*, **181**, no. 6 (1990) 723–742. English translation: *Math. USSR Sbornik*, **70**, no. 1 (1991) 143– 163 (with A. M. Stepin).

41. Spectral mapping theorems for strongly continuous semigroups of weighted composition operators, associated with dynamical systems. *Mathem. Sci. Res. Inst., Berkeley, Preprint Ser.*, **06108-91** (1991) 1–16.
40. The exponentially separated linear skew-product flows and the multiplicative ergodic theorem. *Mathem. Sci. Res. Inst., Berkeley, Preprint Ser.*, **06208-91** (1991) 1–8.
39. A weighted shift operator on the topological Markov chain. *Funct. Anal. Priloz.*, **22**, no. 4 (1988) 86–87. English translation: *Functional Anal. Appl.*, **22**, no. 4 (1988) 330–331 (with A. M. Stepin) MR 90d: 47034.
38. Singular integral operators with a nonunivalent shift without wandering arcs in Hoelder spaces. *Izvestia VUZov. Matem.*, no. 6 (1987) 79–82. English translation: *Soviet Math. (Iz.VUZ)*, **31**, no. 6 (1987) 104–108 (with Sh. Mamatov) MR 89g: 45011.
37. Singular integral operators with noninvertible shift having periodic blocks. *Sibirsk. Mat. Z.*, **26**, no. 4 (1985) 79–90. English translation: *Siberian Mathem. J.*, **26** (1985) 535–549, MR 87b: 45008.
36. How to calculate the defect numbers of the generalized Riemann boundary value problem? *Lecture Notes Math.*, **1043** (1984) 303–305 and **1573** (1994) 346–348 (with Litvinchuk G.S.).
35. On singular integral operators with nonunivalent shift without wandering arcs. *Dokl. Akad. Nauk USSR*, **262**, no. 5 (1982) 1064–1068. English translation: *Soviet Math. Dokl.*, **25**, no. 1 (1982) 182–186, MR 83g: 45005.
34. On integral-functional operators with the shift which is not one-to one. *Izv. Akad. Nauk USSR*, **45**, no. 6 (1981) 1241–1257. English translation: *Math. USSR Izvestia*, **19**, no. 3 (1982) 479–493, MR 83d: 47051.
33. On Noether theory of singular integral operators with nonunivalent shift. *Dokl. Akad. Nauk USSR*, **254**, 4 (1980) 791–795. English translation: *Soviet Math. Dokl.*, **22**, no. 2 (1980) 442–446, MR 81m: 47074.

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32. Matrix operators with shift on a one-sided topological Markov chain. *Function.-diff. Eqns.*, Perm. Politechn. Inst. (1989) 110–115, MR 91m: 47044.
31. Operators with a noninvertible expanding shift in Hoelder space. *Differents. Uravn.*, **23**, no 10 (1987) 1087–1089 (with Sh. Mamatov) MR 89e: 47047.
30. On the theory of Nikolaj Vekua boundary value problem. *Trudy Tbilis. Univ. Mat. Mech. Astron.*, no. 19–20 (1986) 163–188 (with G. S. Litvinchuk, I. M. Spitkovsky) MR 88f: 30068.

29. On spectral radius of the noninvertible weighted expanding composition operator in Hoelder space. *Functional-differential Eqns.*, (1985) 51–54 (with Sh. Mamatov ) MR 88k: 47039.
28. Criteria of  $n(d)$ -normality for the singular integral operator with noncarleman shift. *Functional-differential Eqns.*, (1985) 45–50 (with Yu. Karlovich, R. Mardiev) MR 88m: 45003.
27. The index of singular integral operators with noninvertible shift. *Mat. Fiz. Nelinejn. Mekh.*, **2** (1984) 63–67 MR 86h: 47081.
26. On weighted composition operators. *Boundary value problems* (1982) 148–151, MR 87f: 00015.

*Papers, not available in English, abstracts of talks, preprints, etc.*

### Mathematics

25. The spectrum of a class of discrete Schroedinger operators. *In: XIV School on operator theory in functional spaces.* Novgorod (1989) 52.
24. Weighted composition operators, linear skew-product flows spectral theory and the multiplicative ergodic theorem. *Uspekhi Mat. Nauk*, **43**, no. 4 (1988) 183.
23. Anosov and quasi-anosov linear skew-product flows. *In: XIII School on operator theory in functional spaces, Kuibyshev* (1988) 57.
22. Collocation methods and operators with a shift on topological Markov chain. *Function-diff. Eqns.*, Perm (1988) 81–82.
21. The spectral radius of a weighted composition operator and Lyapunov exponents. *In: Differential and integral equations and their applications, Odessa* (1987) 64.
20. Operators with a shift on Markov chain. *In: XII School on operator theory in functional spaces, Tambov* (1987) 61.
19. A weighted composition operator on topological Markov chain. *In: XI School on operator theory in functional spaces, Cheliabinsk* (1986) 74.
18. The spectrum of an operator of weighted composition in Hoelder space. *In: Seminar in complex analysis, Tashkent* (1985) 61 (with Sh. Mamatov).
17. One-sided invertibility of functional operators and  $n(d)$ -normality of singular integral operators with a shift. Moscow, *VINITI Prepr. Ser.*, **8361-84** (1984) 1–25 (with Y. Karlovich, R. Mardiev).
16. To the solvability theory of generalized Carleman boundary value problem. *In: Kuibyshev seminar on functional analysis, Kuibyshev* (1984) 67–68 (with G. S. Litvinchuk, I. M. Spitkovsky).

15. Singular integral operators with noninvertible shift. *In: Nonlinear problems of mathematical physics, Donetsk (1983)* 81 (with G. S. Litvinchuk).
14. On integral-functional operators with a shift. *In: All-union school on operator theory in functional spaces, Minsk. (1982)* 221–222.
13. Noether theory of a class of singular integral operators with nonunivalent shift. *In: Third Ukrainian symposium on differential and integral equations, Odessa (1982)* 181.
12. Noether theory of singular integral operators with nonunivalent shift. Moscow, *VINITI Prepr. Ser.*, **3903-81** (1981) 1–40.
11. On operators with nonunivalent shift. Moscow, *VINITI Prepr. Ser.*, **3904-81** (1981) 1–25.
10. On singular integral operators with the shift which is not one-to-one. *In: Second Ukrainian symposium on differential and integral equations, Odessa (1978)* 87–88.

### Applied Mathematics

9. On the definition of priority directions of science and technical progress in the region. *Vestnic of Ukrainian Academy of Sciences*, no. 3 (1988) 57–61 (with E. Lazareva).
8. Mathematical modeling of the economical and ecological processes. *VINITI Monographs Ser.* **5506-86** (1986) 1–92 (with Bulitko V. *et. al.*).
7. On methodical approach to the industry connections analysis in a region (on the example of the purveying base of the machine-building complex). *In: "Perfection of the theory and practice of economical analysis in industry"*, Donetsk (1985) 19–22 (with G. Litvinchuk, V. Osipov).
6. To a question of rational organization of the economic connections (on the example of founding industry). *In: "Forming and development of the territorial-industry structures"*, Kiev (1984) 46–53 (with Burkinsky B.V. *et. al.*).
5. To the question on the process of specialization of production. *In: Perfection of the economics mechanism in the industry branches*, Kiev (1984) 70–75 (with Zacharov A.V. *et.al.*).
4. On applications of some classes of integral-functional equations in modeling of economical and ecological systems. *In: Applications of mathematical methods in economical and ecological research*, Kiev, Acad. Sci. Ukrainian SSR (1983) 118–119 (with Bulitko V.K. *et. al.*).
3. On a model of the biological community, structurable by the parameter. *In: Applications of mathematical methods in economical-ecological research*, Kiev, Acad. Sci. Ukrainian SSR (1983) 18–23 (with I. M. Spitkovsky).

2. A model of predator-prey type of the community, structurable by a parameter. *In: Theory and practice of imitational modeling*, Odessa (1983) 21–22 (with I. M. Spitkovsky).
1. An application of the integral and functional equations to the problems of economical and ecological modeling. *In: Integral equations in applied modeling*, Kiev (1983) 13–17 (with V. K. Bulitko *et al.*).