

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

88. The Dichotomy Theorem and ill-posed equations, preprint (with A. Pogan)
87. Center manifolds and dynamics near equilibria of quasilinear parabolic systems with fully nonlinear boundary conditions, preprint (with J. Pruss and R. Schnaubelt)
86. Scattering in a forked-shaped waveguide, preprint (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 Ration. Mech. Anal.*, to appear (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*, to appear (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^∞ 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.

Papers, available through Mathematical Review

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.*).