

Publications of Tatyana Shaposhnikova

Books

1. Maz'ya V., Shaposhnikova T. *Theory of Multipliers in Spaces of Differentiable Functions*, Pitman, 1985 (Russian version: Leningrad University Press, 1986).
2. Shaposhnikova T., Polyshchuk E. *Jacques Hadamard*, Nauka, Leningrad, 1990.
3. Maz'ya V., Shaposhnikova T., *Jacques Hadamard, a Universal Mathematician*, American Mathematical Society and London Mathematical Society, 1998.
4. Maz'ya V., Shaposhnikova T., *Jacques Hadamard, un Mathématicien Universel*. EDP Sciences, Paris, 2005 (revised and extended translation from English).
5. *Sharp Real-Part Theorems. A Unified Approach* by G. Kresin and V. Maz'ya. Translated from Russian and edited by T. Shaposhnikova, Lecture Notes in Mathematics, N. 1903, Springer, 2007.
6. Maz'ya V., Shaposhnikova T., *Jacques Hadamard, Legend of Mathematics*. MCNMO Publishers, Moscow, 2008 (revised, extended, and authorized translation from English to Russian).
7. Maz'ya V., Shaposhnikova T., *Theory of Sobolev Multipliers with Applications to Differential and Integral Operators*, Grundlehren der Mathematischen Wissenschaften, vol. 337, Springer, 2009.
8. *Boundary Integral Equations on Contours with Peaks* by V. Maz'ya and A. Soloviev. Translated from Russian and edited by T. Shaposhnikova, Operator Theory Advances and Applications, Vol.196, Birkhäuser, 2010.

Papers

1. Shaposhnikova T., *Some a priori estimates for variational methods*, Vestnik Leningrad Univ. **19** (1971), 64–69.
2. Shaposhnikova T., *Asymptotic estimates for convergence of the Ritz method in eigenvalue problems*, Izvestia Vys. Uch. Zav. Math. **6** (1972), 86–91.
3. Shaposhnikova T., *A priori estimates for the Ritz method in eigenvalue problems to degenerate elliptic high order operators*, Izvestia Vys. Uch. Zav. Math. **5** (1973), 99–108.
4. Shaposhnikova T., *Asymptotic error estimates for the Ritz method in eigenvalue problems to a degenerate elliptic operator*, Diff. Uravnen. **9:4** (1973), 709–716.

5. Shaposhnikova T., *On a modification of the method of intermediate problems*, Izvestia Vys. Uch. Zav. Math. **3**:3 (1974), 89–92.
6. Shaposhnikova T., *Net approximation for solutions of degenerate equations in weighted norms*, Diff. Uravnenia **11**:11 (1975), 2261–2268.
7. Shaposhnikova T., *A priori estimates for some variational methods in Sobolev spaces*, Trudy Seminara "Variational difference methods in Mathematics Physics", Novosibirsk, 1976, 182-194.
8. Shaposhnikova T., *A priori estimates for variational methods in Banach spaces*, J. Vychisl. Math. and Math. Phys. **17**:5 (1977), 1144–1152.
9. Shaposhnikova T., *Net approximation of solutions of degenerate ordinary differential equations of the second order*, Matem. Zametki **24**:1 (1978), 95–101.
10. Maz'ya V.G., Shaposhnikova T., *On multipliers in spaces of functions with fractional derivatives*, Dokl. Acad. Nauk USSR **244**:5 (1979), 1065–1067.
11. Maz'ya V.G., Shaposhnikova T., *Traces and extensions of multipliers in the space W_p* , Uspehi Math. Nauk **34**:2 (1979), 205–206.
12. Maz'ya V.G., Shaposhnikova T., *On multipliers in Sobolev spaces*, Vestnik Leningrad Univ. **7** (1979), 33–40.
13. Maz'ya V.G., Shaposhnikova T., *Theory of multipliers in spaces of differentiable functions and its applications*, Uspehi Math. Nauk **34**:4 (1979), 144–145.
14. Maz'ya V.G., Shaposhnikova T., *Coercive estimates for solutions of elliptic equations in spaces of multipliers*, Vestnik Leningrad Univ. **1** (1980), 41–47.
15. Maz'ya V.G., Shaposhnikova T., *On conditions to the boundary in L_p -theory of elliptic boundary value problems*, Dokl. Acad. Nauk **251**:5 (1980), 1055-1059.
16. Maz'ya V.G., Shaposhnikova T., *Multipliers in spaces of differentiable functions*, Trudy Seminara S.L. Soboleva **1** (1979), 37–90.
17. Shaposhnikova T., *On conditions on the boundary in L_p -theory of elliptic boundary value problems*, Uspehi Math. Nauk **35**:4 (1980), 774.
18. Shaposhnikova T., *Equivalent norms in spaces of functions with fractional or functional smoothness*, Sibir. Math. J. **21**:3 (1980), 184–196.
19. Maz'ya V.G., Shaposhnikova T., *Multipliers in pairs of potential spaces*, Math. Nachr. **99** (1980), 363–379.
20. Maz'ya V.G., Shaposhnikova T., *Multipliers in Sobolev spaces in a domain*, Math. Nachr. **99** (1980), 165–183.
21. Maz'ya V.G., Shaposhnikova T., *Multipliers in pairs of spaces of differentiable functions*, Trudy Moscow Math. Soc. **43** (1981), 37–80.
22. Maz'ya V.G., Shaposhnikova T., *On regularity of the boundary in L_p -theory of elliptic boundary value problems*, Trudy Seminara S.L. Sobolev, Novosibirsk **1** (1981), 57-102.
23. Maz'ya V.G., Shaposhnikova T., *On sufficient conditions to belong to classes of multipliers*, Math. Nachr. **100** (1981), 151–162.

24. Maz'ya V.G., Shaposhnikova T., *Multipliers in spaces W_p^m and their applications*, Vestnik Leningrad Univ. **1**(1981), 42–47.
25. Shaposhnikova T., *Multipliers in pairs of spaces of differentiable functions*, Boundary Value Problems in Math. Phys., Donetsk (1981), 142–145.
26. Maz'ya V.G., Shaposhnikova T., *The change of variables as an operator in a pair of Sobolev spaces*, Vestnik Leningrad Univ. **1** (1982), 43–48.
27. Maz'ya V.G., Shaposhnikova T., *Multipliers in spaces of differentiable functions*, Uspehi Math. Nauk **38**:3 (1983), 23–86.
28. Shaposhnikova T., *On continuity of differential operators in pairs of Sobolev spaces*, VIII School on Operator Theory in functional Spaces, Riga (1983), 122–123.
29. Shaposhnikova T., *Positive homogeneous multipliers in Riesz and Bessel potential spaces*, Preprint P-Math-07185: Akad. Wissenschaften DDR, Inst. Math. Berlin, 1985, 1–16.
30. Shaposhnikova T., *On the spectrum of multipliers in Bessel potential spaces*, Casopis pro pestovani mat. **110** (1985), 197–206.
31. Shaposhnikova T., *On continuity of differential operators in Sobolev spaces*, Uspehi Math. Nauk **40**:5 (1985), 189.
32. Shaposhnikova T., *Bounded solutions of elliptic equations as multipliers in spaces of differentiable functions*, Zapiski Nauchn. Semin. LOMI **149** (1986), 165–176.
33. Shaposhnikova T., *Multiplicative properties of solutions of elliptic equations*, Uspehi Math. Nauk **41**:4 (1986), 209.
34. Shaposhnikova T., *Implicit mapping theorem for multipliers in Bessel potential spaces*, Izvestia Azerb. SSR **1** (1987), 14–18.
35. Shaposhnikova T., *On solvability of quasilinear elliptic equations in spaces of multipliers*, Izvestia Vis. Uch. Zav. Math. **8** (1987), 74–81.
36. Shaposhnikova T., *Multipliers in L_p -theory of elliptic boundary value problems*, Nonlinear problems in Math. Phys.: VI Republic Conference, Donetsk, 1987, 160.
37. Shaposhnikova T., *On the superposition operator in classes of multipliers in Sobolev spaces*, Seminar Analysis: Inst. Math. Berlin (1987), 181–190.
38. Shaposhnikova T., *On nonlinear differential operators in spaces of multipliers*, Uspehi Math. Nauk **42**:4 (1987), 158.
39. Shaposhnikova T., *On coercivity in L_p of the Neumann problem in a domain with nonsmooth boundary*, Uspehi Math. Nauk **43**:4 (1988), 181.
40. Shaposhnikova T., *Implicit mapping theorem for multipliers in spaces W_p^l* , Functional and Numerical Methods in Math. Phys.: Kiev, 1988, 241–245.
41. Shaposhnikova T., *Multipliers in Bessel potential spaces as traces of multipliers in weighted classes*, Trudy Math. Inst. Georgian Acad. Nauk **88** (1989), 59–63.
42. Shaposhnikova T., *Traces of multipliers in Bessel potential spaces*, Math. Zametki **46**:3 (1989), 100–109.

43. Shaposhnikova T., *Applications of multipliers in Sobolev spaces to L_p -coercivity of the Neumann problem*, Dokl. Acad. Nauk USSR, **305**:4 (1989), 786–789.
44. Shaposhnikova T., *Applications of multipliers to the problem of coercivity of the Neumann problem in W_p^ℓ* , Problemy Math. Anal. **11** (1990), 237–248.
45. Shaposhnikova T., *On continuity of singular integral operators in Sobolev spaces*, Mathematica Scandinavica, **76** (1995), 85–97.
46. Shaposhnikova T., *On continuity of singular integral operators in Sobolev spaces*, IABEM Symposium on boundary integral methods for nonlinear problems, Kluwer Academic Publishers, 1997, 191–195.
47. Eidus D., Khvoles A., Kresin G., Merzbach E., Prösdorf S., Shaposhnikova T., Sobolevskii P., Solomiak M., *Mathematical work of Vladimir Maz'ya*, Functional Differential Equations **4**:1 (1997), 3–11.
48. Shaposhnikova T., *Sobolev multipliers in a non-smooth L_p elliptic theory*, Analysis, Numerics and Applications of Differential and Integral Equations, Pitman Research Notes in Mathematical Series, **379**, 1998, 205–208.
49. Maz'ya V., Shaposhnikova, T. *On pointwise interpolation inequalities for derivatives*, Mathematica Bohemica, **124**, 1999, 131–148.
50. Shaposhnikova T., *Multipliers of differentiable functions and their traces*, Proceedings of the Coinference on Honour of Vladimir Maz'ya “Functional Analysis, Partial Differential Equations and Applications”, v.1, Birkhäuser, Basel, 1999, 155–169.
51. Shaposhnikova T., *Sobolev multipliers in the theory of integral convolution operators*, Mathematical Aspects of Boundary Integral Methods, Chapman and Hall, London, 1999, 285–295.
52. Maz'ya V., Shaposhnikova, T. *Traces and extensions of multipliers in pairs of Sobolev spaces*, Operator Theory, Advances and Applications. Vol. 113: S.A. Vinogradov - In Memoriam, Birkhäuser, 2000, 221–237.
53. Maz'ya V., Shaposhnikova, T., *Pointwise interpolation inequalities for Riesz and Bessel potentials*, Analytical and Computational Methods in Scattering and Applied Mathematics, Chapman and Hall, London, 2000, 217–229.
54. Shaposhnikova, T. *Sobolev multipliers in the L_p theory of boundary integral equations of elasticity on non-smooth surfaces*, Problemi Attuali dell' Analisi e della Fisica Matematica, Gaetano Fichera memorial volume, Aracne, Rome, 2000, 161–166.
55. Maz'ya V., Shaposhnikova, T., *Maximal algebra of multipliers between fractional Sobolev spaces*, Proceedings of Analysis and Geometry, Sobolev Institute Press, Novosibirsk, 2000, pp. 387–400.
56. Maz'ya V., Shaposhnikova, T., *Maximal Banach algebra in spaces of multipliers between Bessel potential spaces*, Problems and Methods in Mathematical Physics, The Siegfried Prösdorf Memorial Volume, J. Elschner, I. Gohberg, B. Silbermann (Eds.), Operator Theory: Advances and Applications, Vol. 121, Birkhäuser, Basel, 2001, pp. 352–365.

57. Maz'ya V., Shaposhnikova, T., *Sharp pointwise interpolation inequalities for derivatives*, Journal of Functional Analysis and its Applications , **36**:1 (2002), 36-58.
58. Maz'ya V., Shaposhnikova, T., *An elementary proof of the Brezis and Mironescu theorem on the composition operator in fractional Sobolev spaces*, The Journal of Evolution Equations, **2**, 2002, 113-125 .
59. Maz'ya V., Shaposhnikova, T., *On the Bourgain, Brezis, and Mironescu theorem concerning limiting embeddings of fractional Sobolev spaces*, The Journal of Functional Analysis, **195** (2002), 230-238.
60. Maz'ya V., Shaposhnikova, T., *On the Brezis and Mironescu conjecture concerning a Gagliardo-Nirenberg inequality for fractional Sobolev norms*, Journal des Mathématiques Pures et Appliqués, **81** (2002), 877-884.
61. Maz'ya V., Shaposhnikova, T., *A survey of pointwise interpolation inequalities for integer and fractional derivatives*, Acoustics, Mechanics, and Related Topics of Mathematical Analysis, A. Wirgin (Ed.), World Scientific, 2002, 212-221.
62. Maz'ya V., Shaposhnikova, T., *Erratum to: "On the Bourgain, Brezis, and Mironescu theorem concerning limiting embeddings of fractional Sobolev spaces"*, The Journal of Functional Analysis, **201**:1 (2003), 298-300.
63. Maz'ya V., Shaposhnikova, T., *Characterization of multipliers in pairs of Besov spaces*, Operator Theoretical Methods and Applications to Mathematical Physics: The Erhard Meister Memorial Volume, I.Gohberg et al (Eds.), Birkhäuser, 2004, 365-387.
64. Maz'ya V., Shaposhnikova, T., *Traces of multipliers in pairs of weighted Sobolev spaces*, Journal of Function Spaces and Applications, **3** (2005), 91-115.
65. Maz'ya V., Shaposhnikova, T., *Higher regularity in the layer potential theory*, Indiana Univ. Math. J. **54**:1 (2005), 99-142.
66. Shaposhnikova, T., *Three high-stakes math exams*, The Mathematical Intelligencer, **27**:3 (2005), 44-46.
67. Maz'ya V., Shaposhnikova, T., *A Collection of sharp dilation invariant integral inequalities for differentiable functions*, in the book: Sobolev Spaces in Mathematics I. Sobolev Type Inequalities, pp. 223–248, 2008, Springer.
68. Shaposhnikova, T., *Description of pointwise multipliers in pairs of Besov spaces $B_1^k(\mathbf{R}^n)$* , J. for Analysis and its Applications, **28** (2009), 67-85.
69. Maz'ya, V., Mitrea, M., Shaposhnikova, T., *The inhomogeneous Dirichlet problem for the Stokes system in Lipschitz domains with unit normal close to VMO*, J. Functional Analysis and its Applications, **43**: 3 (2009), 217-235.
70. Maz'ya, V., Mitrea, M., Shaposhnikova, T., *The Dirichlet problem in Lipschitz domains with boundary data in Besov spaces for higher order elliptic systems with rough coefficients*, Journal d'Analyse Mathématique, **110** (2010), 167-239.
71. Maz'ya, V., Shaposhnikova, T., *Recent progress in elliptic equations and systems of arbitrary order with rough coefficients in Lipschitz domains*, Bulletin of Mathematical Sciences, **1** (2011), 33-77.

72. Maz'ya, V., Shaposhnikova, T., *Brezis-Gallouet-Wainger type inequality for irregular domains*, Complex Variables and Elliptic Equations, **56**: 10 (2011), 991–1002.
73. Maz'ya, V., Shaposhnikova, T., Tampieri, D., *Solomon Grigoryevich Mikhlin*, MacTutor, March 2011, 1–5.
74. Shaposhnikova, T., *Inequality for entire functions involving their maximum modulus and maximum terms*, Rend. Lincei, Mat. Appl. **23**:3 (2012), 259–265.

Translation of books from Russian to English

1. Zabreyko P.P., Koshelev A.I., Krasnosel'skii M.A., Mikhlin S.G., Rakovshchik L.S., Stet'senko V.Ya. *Integral Equations – A Reference Text*, Noordhoff International Publishing, Leyden, 1975.
2. Mikhlin S.G., *Approximation on a Rectangular Grid*, Sijthov and Noordhoff, 1979.
3. Maz'ya V.G., *Sobolev Spaces*, Springer-Verlag, 1985.
4. Maz'ya V.G., Soloviev A.A. *Boundary Integral Equations on Contours with Peaks*, Birkhäuser, 2010.
5. Kresin, G.; Maz'ya, V., *Maximum Principles and Sharp Constants for Solutions of Elliptic and Parabolic Systems*, Mathematical Surveys and Monographs, 183. American Mathematical Society, Providence, RI, 2012. viii+317 pp.

Translation of books by C.S. Lewis from English to Russian

1. *The Voyage of the Dawn Treader*, Moscow, Variant, 1992; second edition: Moscow, Sovetskii Compositor, 1992; Complete Works of C.S. Lewis, vol. 5, Biblia dlya vseh, 2000.
2. *The Silver Chair*, Moscow, Variant, 1992; second edition: Moscow, Sovetskii Compositor, 1992; Complete Works of C.S. Lewis, vol. 6, Biblia dlya vseh, 2000.
3. *The Screwtape Letters*, Moscow, Gnosis-Progress, 1992; Complete Works of C.S. Lewis, vol. 8, Biblia dlya vseh, 2000; ACT Publishers, Moscow 2004.
4. *The Chronicles of Narnia*, Moscow, Ecsmo, 2002, 2005, 2010, 2011, 2012.

Other translations

1. *Jockey*, a novel by Carson McCullers, St-Petersburg, Amfora, 2000.

Translation from Swedish to Russian

1. *Mathematics, Life and Death*, a play by L. Gårding, Algebra and Analyses, Part 1: **12**:5 (2000), 215-224; Part 2: **13**:3 (2001), 229-239; *Von Neumann with the Devil*, Algebra and Analyses, **21**:3 (2009), 1-5.
2. *Mechanical Santa Claus (Tomtemaskinen)*, a novel by Sven Nordqvist, OM Publishers, Moscow, 2008.

3. *Kerstin and I*, a novel by Astrid Lindgren, Astrel Publishers, Moscow, 2008; Planeta Detstva, Moscow, 2010.
4. *Loranga, Masarin and Dartanjang* a novel by Barbro Lindgren, Samokat Publishers, Moscow, 2009.
5. *A book for great fisherman to be*, a novel by Sven Nordqvist and Casper Verner-Carlsson, Rapol Classic Publishers, Moscow, 2011.
6. *Detektivpojken*, a novel by Ulf Stark, Moscow, Planeta detstva, 2012.
7. *Pusspojken*, a novel by Ulf Stark, Moscow, Planeta detstva, 2012.
8. *Flickan som lekte med elden*, a novel by Stieg Larsson, Moscow, Ecsmo, 2014.

Translation from French to Russian

1. *Huis clos (Behind closed door)*, a play by Jean-Paul Sartr, Blubr.com Publishers, 2010.