

List of Publications—Ugur G. Abdulla

1. The well-posed nature of the problem of determining an unknown boundary of a domain in a similarity regime. *USSR Computational Mathematics and Mathematical Physics*, 1988, **28**, 100-101 (transl. by Pergamon Press).
2. Finite propagation velocity and local perturbations in nonlinear relaxation filtration. *Journal of Applied Mechanics and Technical Physics*, 1991, **5**, 750-754 (transl. by Plenum Publ. Corp., New York).
3. Peak regimes in problems for quasilinear heat equation with convection. *Computational Mathematics and Mathematical Physics*, 1991, **31**, 462-466 (transl. by Pergamon Press).
4. Unbounded solutions of the nonlinear equation of heat conduction with a sink. *Computational Mathematics and Mathematical Physics*, 1992, **32**, 1109-1120 (transl. by Pergamon Press).
5. On the existence of unbounded solutions of the nonlinear heat-conduction equation with a sink. *Computational Mathematics and Mathematical Physics*, 1993, **33**, 205-216 (transl. by Pergamon Press).
6. Unbounded solutions of the Kolmogorov-Petrovskii-Piskunov equation. *Computational Mathematics and Mathematical Physics*, 1993, **33**, 603-614 (transl. by Pergamon Press).
7. Numerical method of solving inverse problems for nonlinear differential equations. *Computational Mathematics and Mathematical Physics*, 1993, **33**, 1043-1057 (transl. by Pergamon Press).
8. On localization of unbounded solutions of the nonlinear heat equation with transfer. *Russian Acad. Sci. Dokl. Math.*, 1993, **47**, 298-301 (transl. by American Mathematical Society).
9. Unbounded solutions of the nonlinear parabolic equations. *Russian Mathematical Surveys*, 1993, **48**, (Materials of Joint Session of the Petrovsky Seminar on Differential Equations & Mathematical Problems of Physics and of the Moscow Mathematical Society, 15th Session, 18-21 January 1993).
10. On exact local bounds for the support of the solutions in problems for nonlinear parabolic equations. *Russian Mathematical Surveys*, 1994, **40**, **4**, (Materials of Joint Session of the Petrovsky Seminar on Differential Equations & Mathematical Problems of Physics and of the Moscow Mathematical Society, 16th Session, 18-21 January 1994).
11. Stability of symmetric travelling waves in the Cauchy problem for the Kolmogorov-Petrovsky-Piskunov equation. *Differential Equations*, 1994, **30**, 377-386 (transl. by Plenum Publ. Corp., New York).
12. On the space localization of unbounded perturbations in nonlinear heat conduction with transfer. *Applied Mathematics Letters*, 1994, **7**, 91-95.

13. Large time behaviour of the nonlinear infiltration equation. *Nonlinear Analysis: Theory, Methods and Applications*, 1994, **23**, 1353-1364.
14. Quasilinearization and inverse problems of nonlinear dynamics. *Journal of Optimization Theory and Applications*, 1995, **85**, 509-526.
15. Quasilinearization and inverse problems for nonlinear control systems. *Journal of Optimization Theory and Applications*, 1995, **85**, 527-543.
16. Exact local estimations of support of solutions for nonlinear parabolic equations. *Math. Sbornik*, 1995, **186**, 1085-1106 (transl. by American Mathematical Society).
17. On asymptotically exact local estimates for compactly supported solutions to a nonlinear parabolic equation with absorption. *Siberian Mathematical Journal*, 1995, **36**, 837-852 (transl. by Plenum Publ. Corp., New York).
18. On the unbounded solutions of the nonlinear heat equation with transfer. *Differential Equations*, 1995, **31**, 686-694 (transl. by Plenum Publ. Corp., New York).
19. Local structure of solutions of the reaction-diffusion equations. *Nonlinear Analysis: Theory, Methods and Applications*, 1997, **30**, 3153-3163.
20. Instantaneous shrinking of the support in problems for nonlinear degenerate parabolic equations. *Mathematical Notes*, 1998, **63**, 285-292. (Translated from *Matematicheskie Zametki*, 1998, **63**, 323-331).
21. Instantaneous shrinking and exact local estimations of interface in nonlinear diffusion absorption. *Advances in Math. Sciences and Appl.*, 1998, **8**, 483-503.
22. Reaction-Diffusion in Irregular Domains. Advanced Textbook, Baku State University, Baku, 1998, 75p.
23. Local structure of solutions of the Dirichlet problem for N-dimensional reaction-diffusion equations in bounded domains. *Advances in Differential Equations*, 1999, **4**, 197-224.
24. Reaction-diffusion in irregular domains. *Journal of Differential Equations*, 2000, **164**, 321-354.
25. Interface development and local solutions to reaction-diffusion equations. *SIAM Journal of Math. Anal.*, 2000, **32**, No. 2, 235-260, (together with J.R.King).
26. Reaction-Diffusion in a closed domain formed by irregular curves. *Journal of Math. Anal. and Applications*, 2000, **246**, 480-492.
27. Nonlinear diffusion in irregular domains with cusps. *Zeitschrift fuer Angewandte Mathematik und Mechanik*, 2000, **80**, Supplement. 3, 759-760. Issues devoted to the materials of the conference GAMM-99, 12-16 April, 1999, Metz, France.
28. On the Dirichlet problem for the nonlinear parabolic equations in non-smooth domains, Proceedings of the EQUADIFF-99, 1-8 August 1999, Berlin, Germany. Edited by B.Fiedler, K.Groeger and J.Sprekels, World Scientific, 2000, pp. 729-731.

29. On the Dirichlet problem for the nonlinear diffusion equation in non-smooth domains. *Journal of Math. Anal. and Applications*, 2001, **260**, 2, 384-403.
30. On the Dirichlet problem for the reaction-diffusion equations in non-smooth domains. *Nonlinear Analysis, Theory, Methods and Applications*, 2001, **47**, 2, 765-776.
31. Nonlinear diffusion in irregular domains, in *Elliptic and Parabolic Problems*, Rolduc and Gaeta 2001, World Scientific, 2002, pp.302-310.
32. Evolution of interfaces and explicit asymptotics at infinity for the fast diffusion equation with absorption, *Nonlinear Analysis, Theory, Methods and Applications*, 2002, **50**, 4, 541-560.
33. First boundary value problem for the diffusion equation. I. Iterated logarithm test for the boundary regularity and solvability, *SIAM Journal of Math. Anal.*, 2003, **34**, No.6, 1422-1434.
34. Well-posedness of the Dirichlet problem for the nonlinear diffusion equation in non-smooth domains, *Transactions of the Amer. Math. Society*, 2005, **357**, No.1, 247-265.
35. Multidimensional Kolmogorov-Petrovsky test for the boundary regularity and irregularity of solutions to the heat equation, *Boundary Value Problems*, 2005, **1**, No.2, 181-199.
36. Kolmogorov problem for the heat equation and its probabilistic counterpart, *Nonlinear Analysis*, 2005, **63**, No.5-7, 712-724.
37. Necessary and sufficient condition for uniqueness of solution to the first boundary value problem for the diffusion equation in unbounded domains, *Nonlinear Analysis*, 2006, **64**, No.5, 1012-1017
38. Wiener's criterion for the unique solvability of the Dirichlet problem in arbitrary open sets with non-compact boundaries, *Nonlinear Analysis*, 2007, **67**, No. 2, 563-578.
39. Reaction-Diffusion in nonsmooth and closed domains, *Boundary Value Problems*, Special issue: *Harnack Estimates, Positivity and Local Behaviour of Degenerate and Singular Parabolic Equations*, Vol. 2007 (2007), pp.28.
40. Wiener's criterion at ∞ for the heat equation and its measure-theoretical counterpart, *Electronic Research Announcements in Mathematical Sciences*, **15**, (2008), 44-51.
41. Wiener's criterion at ∞ for the heat equation, *Advances in Differential Equations*, 2008, **13**, No.5-6, 457-488.
42. Regularity of ∞ for the Heat Equation and the Well-posedness of the Dirichlet Problem, **Chapter 16** in *Advances in Mathematical Problems in Engineering and Aerospace Sciences*, Cambridge Scientific Publishers, Cambridge, 2009, 175-182.
43. Regularity of ∞ for the Elliptic Equations with Measurable Coefficients and Its Consequences, *Discrete and Continuous Dynamical Systems - Series A*, 2012, **32**, No.10, 3379-3397.
44. On the Minimal $2(2k+1)$ -orbits of the Continuous Endomorphisms on the Real Line with Application in Chaos Theory, *Journal of Difference Equations and Applications*, 2013, **19**, No.9, 1395-1416.

45. On the Optimal Control of the Free Boundary Problems for the Second Order Parabolic Equations. I. Well-posedness and Convergence of the Method of Lines, *Inverse Problems and Imaging*, 2013, **7**, No.2, 307-340.
46. On the Optimal Control of the Free Boundary Problems for the Second Order Parabolic Equations. I. Convergence of the Method of Finite Differences, *Inverse Problems and Imaging*, 2016, **10**, No.4, 869-898.
47. Evolution of Interfaces for the Nonlinear Parabolic p-Laplacian type Reaction-Diffusion Equations, *European Journal of Applied Mathematics*, 2017, to appear. (together with R. Jeli).
48. Second Minimal Orbits, Sharkovski Ordering and Universality of Chaos, *International Journal of Bifurcation and Chaos*, 2017, **27**, No. 5. (together with R. Abdulla, M. Abdulla, N. Iqbal).
49. On the Frechet Differentiability in Optimal Control of Coefficients in Parabolic Free Boundary Problems, *Evolution Equations and Control Theory*, 2017, to appear. (together with E. Cosgrove, J. Goldfarb).
50. Frechet Differentiability in Besov Spaces in the Optimal Control of Parabolic Free Boundary Problems, 2016, arxiv#1604.00057, submitted (together with J. Goldfarb).
51. Optimal Control of the Multiphase Stefan Problem, 2016, arxiv#1508.00290, submitted. (together with B. Poggi)
52. Classification of the Second Minimal Odd Periodic Orbits in the Sharkovski Ordering, 2017, arxiv#1701.02695, submitted. (together with R. Abdulla, M. Abdulla, N. Iqbal).
53. The Wiener Test for the Removability of the Logarithmic Singularity for the Elliptic PDEs with Measurable Coefficients and its Consequences, 2016, arxiv#1601.04184, submitted.