

Curriculum Vitae

Dmitri S. Anikonov

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Research interest:

Integral operators, integral geometry (theory of generalized Radon Transforms), theory of inverse and ill-posed problems, creation and comparison of mathematical models of passing radiation through a substance, classical and non-classical problems of transport equations, radiation tomography, numerical methods for calculation of unstable problems, mathematical solving of a problem of paying off between many mutual debtors.

Biographical information:

Born in Lenisk-Kuznetsky, 652507, Russia (former Soviet Union).

Date of birth: 18 September 1945.

Widower, two sons (1974, 1982)

Education:

1991: Professor of Mathematics, Novosibirsk Institute of Commerce.

1989: Doctor of Mathematics, Sobolev Institute of Mathematics (with major in Differential Equations).

1975: Ph.D in Mathematics, Sobolev Institute of Mathematics (with major in Differential Equations).

1968: M.Sc. in Mathematics, Novosibirsk State University,
Department of Mathematics.

Professional experience:

Sobolev Institute of Mathematics, Siberian Branch of the Russian Academy of Sciences, Novosibirsk, Russia.
December 2003 – present time: head of the laboratory “Ill-posed processes.

Institute of Applied Mathematics, Far Eastern Branch of the Russian Academy of Sciences, Vladivostok, Russia.

May 1991 – November 2003: head of a laboratory and deputy director.

Novosibirsk Institute of Commerce:

February 1977 – May 1991: associated professor and professor.

Sobolev Institute of Mathematics.

September 1968 – February 1977: post graduated student and researcher.

Visiting positions:

Invited lector at conferences and/or seminars: Kyoto University, 1993, (Japan); Osaka Institute of Technology, 1993, (Japan); Moscow State University, 1996, (Russia); Minneapolis State University, 1997, (USA); Kanazawa State University, 1999, (Japan); Kyoto State University, 1999, (Japan); Hong-Kong City University, 2002, (China).

Languages:

Russian, English.

Overview of obtained results at institutes of Russian Academy of Sciences:

- theorems of uniqueness in integral geometry (generalized Radon Transforms), construction of counter-examples in integral geometry;
- theorem of boundedness of singular integral operator;
- optimal algorithm of clearing mutual debts;

-theorems of uniqueness and stability of tomography problems, algorithms of reconstruction in tomography, numerical experiments;
-introduction and justification of the notion: “measure of visibility of a medium under its radiology”;
-classification and optimization in tomography by control of conditions provided the needed quality of reconstruction.

Teaching experience:

Professor D.S. Anikonov has been giving lectures for students in Far Eastern State University and Novosibirsk State University on the following subjects:

- a) general courses: higher mathematics for engineers and economists; ordinary differential equations; integral equations; differential equations in partial derivatives; equations of mathematical physics; mathematical models in economy;
- b) special courses: methods for investigation of inverse and ill-posed problems in mathematical physics, mathematical modeling of passing radiation through a medium, mathematical theory of x-ray tomography.

Selected Publications:

1. D.S. Anikonov, About inverse problems of the transport equation. *Differential Equations* (1974), N.1, pp.7-17, (in Russian).
2. D.S. Anikonov, About uniqueness of determination of a coefficient and the right-hand side of the transport equation. *Differential Equations* (1975), N.1, pp.8-18, (in Russian).
3. D.S. Anikonov, About one problem for the transport equation. *Siberian Mathematical Journal* (1975), v.26, N.3, (in Russian).
4. D.S. Anikonov, About boundedness of singular integrator operator. *Mathematical Reports* (1977), v.104(106), N.4(12), pp.551-534, (in Russian).
5. D.S. Anikonov, To the questions of uniqueness of solving inverse problems for equations of mathematical physics. *Differential equations* (1979), v.15, N.1, pp.3-9, (in Russian).
6. D.S. Anikonov, Solving of 3-D inverse problems for the transport equations. *Dynamics of Continuous Media* (1979), v.50, pp.43-47, (in Russian).
7. D.S. Anikonov, Many-dimensional inverse problems for the transport theory. *Differential Equations* (1984), v.20, N.5, pp.817-824, (in Russian).
8. D.S. Anikonov, Uniqueness of determination of both coefficients of the transport equation. *Dokl. of RAS* (1985), v.284, N.5, pp.1033-1037, (in Russian).
9. D.S. Anikonov, Tomography problem solution by the special type of a source. *Linear and nonlinear problems of computational tomography* (1985), pp.3-10, (in Russian).
10. D.S. Anikonov, Quasi-solution of a problem of numerical differentiation. *News of Kaz. Academy of Sciences, physical and mathematical series* (1987), v.3(136), pp.10-14, (in Russian).
11. D.S. Anikonov, Examples of non-uniqueness of a problem of integral geometry. *Dokl. of RAS*, (1988), v.299, N.1, pp.15-17, (in Russian).
12. D.S. Anikonov, I.Sh. Irkegulov, Determination of integral characteristics for the absorption coefficient in the transport equation. *Dokl. of RAS*, (1989), v.308, N.4, pp.838-841, (in Russian).
13. D.S. Anikonov, I.V. Prokhorov, Determination of the coefficient of the transport equation by using energy and angle singularities of outside radiation. *Dokl. of RAS*, (1992), v.327, N.2, pp.205-207, (in Russian).
14. D.S. Anikonov, I.V. Prokhorov, and A.E. Kovtanyuk, Some numerical experiments in tomography of scattering media. *Proceedings of the conference “Computational Tomography”, Novosibirsk, 1993*, pp.25-31, (in Russian).
15. D.S. Anikonov, I.V. Prokhorov, and A.E. Kovtanyuk, Investigation of scattering and absorbing media by methods of x-ray tomography, *J. of Inverse and Ill-Posed Problems*, (1993), v.1 N.4, pp.259-281, (in Russian).
16. D.S. Anikonov, Using singularities of the transport equation solution in x-ray tomography. *Dokl. of RAS*, (1994), v.335, N.6, pp. 702-704, (in Russian).
17. D.S. Anikonov, Stephan type problem for the transport equation. *Dokl. Of RAS*, (1994), v.338, N.1, pp.25-28, (in Russian).
18. D.S. Anikonov and G.Sh. Tsitsiashvily, Reduction of clearing of debts to the transportation problem. *Dokl. of RAS*, (1997), v.55, N.1, p.20, (in Russian).
19. D.S. Anikonov, V.G. Nazarov, and I.V. Prokhorov, Visible and invisible media in tomography. *Dokl. of RAS*, (1997), v.357, N.5, pp.559-603, (in Russian).
20. D.S. Anikonov, Construction of heterogeneity indicator in medium radiography, *Dokl. of RAS*, (1997), v.357, N.3, pp.324-327, (in Russian).
21. D.S. Anikonov, Comparison of two mathematical models for transport theory. *Dokl. of RAS*, (1998), v.361, N.2, pp.171-173, (in Russian).

22. D.S. Anikonov, A.E. Kovtanyuk, and I.V. Prokhorov, Tomography through the transport equation. Proceedings IMA Volumes in Mathematics and its Applications “Computational Radiology and Imaging: Therapy and Diagnostics”, Springer-Verlag, New York, 1999, v.110, pp.33-44, (in English).
23. D.S. Anikonov, I.V. Prokhorov, The importance of the radiation absorption coefficient for diagnostic of scattering and absorbing media. Doklady Mathematics (1999), v.60, N.2 pp.264-266, (in English).
24. D.S. Anikonov, Integro-differentiation indicator of non-homogeneity in a tomography problem. J. Inverse and Ill-Posed Problems, (1999), v.7, N.1, pp.17-59, (in English).
25. D.S. Anikonov and G.Sh. Tsitsiashvily, Issues of improving the procedure of mutual debts set-off. Economics and Mathematical Methods, (2000), v.36, issue 3, (in Russian).
26. D.S. Anikonov, A.E. Kovtanyuk, and I.V. Prokhorov, Monograph: Using of Transport Equation in Tomography, (2002), Moscow, Logos, pp.3-226, (in Russian).
27. D.S. Anikonov, A.E. Kovtanyuk and I.V. Prokhorov, Monograph: Transport Equation and Tomography, (2002), VSP, The Netherlands, pp.viii+208, (in English).
28. D.S. Anikonov, V.G. Nazarov, and I.V. Prokhorov, Monograph: Poorly Visible Media in X-Ray Tomography, (2002), VSP, The Netherlands, pp.viii+308, (in English).
29. D.S. Anikonov, D.S. Konovalova, V.G. Nazarov, A.E. Kovtanyuk, and I.V. Prokhorov, Investigation of inverse and other non-classical problems in the Russian Far East. Proceedings of international conference on inverse problems, 9-14 January, 2002, Hong-Kong, 2003, pp.13-25, (in English).
30. D.S. Anikonov and D.S. Konovalova, The Compton Effect in the Theory of Radiation Transport. Doklady Mathematics, (2004), v.70, N.2, pp.818-821, (in English).

Notes: 1. Dokl. of RAS (Doklady of Russian Academy of Sciences) is the most important scientific journal in Russia and the English version of the mathematical part is usually titled “Doklady Mathematics”.

2. Information of books [27-28] and their ranks are contained in the website: allbookstores.com, key words: transport, tomography, x-ray, inverse problems, inverse and ill-posed problems).

3. The official address is preferable for contacts.