

CURRICULUM VITAE

Duduchava Roland



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Biographical data:

12.11.1945 Born in Tbilisi, Georgia (USSR)

1970 Married Efrosinia Khomenko

1970 Born daughter Maya

1973 Born son Alexander

Spoken languages: Georgian (native), Russian (fluent), English (fluent), German (fluent)

Education & academic degrees:

1962 Graduated from a school in Sukhumi, Georgia

1968 B.Sc. in Mathematics from the Tbilisi State University

1968–1971 Post graduate study in Kishinev, Moldova, at the Institute of Mathematics and Computing Center of the Academy of Sciences of Moldova

1971 PhD degree (Kandidat Fisiko–Matematicheskikh Nauk) from A.Razmadze Tbilisi Mathematical Institute of the Academy of Sciences of Georgia, supervisor Prof. I.Gohberg

1983 Doctor of Science Rer. Nat. degree (Habilitation) from the Moscow State University

1989 Academic title of Professor from the Supreme Attestation Commission of USSR, Moscow

WORK, TEACHING & SUPERVISING EXPERIENCE

Teaching experience:

1973–1987 Docent (associate professor) at the Tbilisi State University. Courses in:

- *Integral equations*
- *Functional Analysis and Operator Theory*

1987–2004 Professor at the Tbilisi State University. Courses in:

- *Functional Analysis and Operator Theory*
- *Integral Equations*
- *Pseudodifferential Equations*
- *Equations of Mathematical Physics*
- *Theory of Distributions*

1993-1994 Invited professor at the Humboldt University, Berlin (Fall semester). Course in: *Pseudodifferential Equations*.

2001-2002 Invited professor at the University of Stuttgart (Fall semester). Course in: *Pseudodifferential Operators with Applications to Some Problems of Mathematical Physics*.

2002-2003 Professor Merkatior (German Research Council-DFG) at the University of Saarland, Saarbrücken (Fall and summer semesters). Course in: *Pseudodifferential Operators with Applications to Some Problems of Mathematical Physics*.

2004-2007 Professor at the University of Saarland, Saarbrücken (Chair of Differential Geometry).

Fall semester: Basic course “*Elementare Differenzialgeometrie*”

Summer semester: Course “*Partielle Differentialgleichungen*” and “*Geometrische Analysis*”

2007–2009 Full Professor at IB German-Georgian University, Tbilisi, Georgia. Courses in:

- *Mathematics for business*
- *Applied Mathematics*
- *Partial Differential Equations*

2009–pres. Invited Full Professor at Iv. Javakhishvili State University, Tbilisi. Courses in:

- *Partial Differential Equations* (Basic course; Fall semester 2009, Spring semester 2012);
- *Differential Equations on Hypersurfaces and Shell Theory* (Spring semester 2010,
- *Differential Equations on Hypersurfaces and Shell Theory* (Fall semester 2010);
- *Fredholm Operators and Operator Algebras* (Fall semester 2011);
- *Method of Potentials* (Spring semester 2011).

Publications and index of citation:

- Number of publications: 103 (including 4 monographs and 44 publications in Journals with the impact-factor).
- Index of citation: (Harzig's Publish or Perish, as for 20.04.2012):
854 citations under Duduchava,
35 citations under Duducava,
104 citations in 25 books,
993 citations in total,
h-index 16,
G-index 25
- Index of citation: (Thomson-Reuter, as for 20.04.2012):
267 citations (181 without self-citing),
104 citations in 25 books,
361 citations in total,
h-index 10

Research positions:

- 1971–1973 Junior research fellow at A. Razmadze Tbilisi Mathematical Institute of the Academy of Sciences of Georgia
- 1973–1987 Senior research fellow at A. Razmadze Tbilisi Mathematical Institute of the Academy of Sciences of Georgia
- 1987–1996 Leading research fellow at A. Razmadze Tbilisi Mathematical Institute, Academy of Sciences of Georgia
- 1996–pres. Principal research fellow, Head of the Department of Mathematical Physics at A. Razmadze Mathematical Institute, Tbilisi, Georgia

Supervising experience:

- 1981 A. Saginashvili, PhD thesis:
Integral equations with semi-almost-periodic symbols
- 1983 T. Latsabidze, PhD thesis:
Integral equations with complex conjugation
- 1990 E. Shargorodsky, PhD thesis:
Boundary value problems for pseudodifferential operators in Besov and Bessel potential spaces
- 1999 L.Sigua, PhD thesis (joint supervising with Prof. D.Natroshvili, Tbilisi, Georgia):
Boundary value problems for a vector Helmholtz equations
- 1999 V.Kirvalidze, PhD thesis (joint supervising with Prof. D.Natroshvili, Tbilisi, Georgia):
Linearized Stokes equations for domains outer to open surfaces

- 2000 O.Chkadua, Habilitation thesis:
Asymptotics of solutions to crack-type and contact problems of elasticity
- 2002 A.Gachechiladze, PhD thesis (joint supervising with Prof. D.Natroskhvili, Tbilisi):
Some problems of mathematical physics with unilateral restrictions
- 2003 D.Kapanadze (PhD thesis; joint supervising with Prof. B.W.Schulze, Potsdam):
Boundary value problems in crack configurations and asymptotics of solutions
- 2005 R.Kirsch (PhD thesis; joint supervising with Prof. S. Rjasanov, Saarbrücken:
Boltzmann kinetic equations

International grants & Invited positions:

- 1979 Fellow of the Alexander von Humboldt Foundation; two years (in 1979–1981, 1985, 1989) at TH Darmstadt. Hosted by Prof. E.Meister & Prof. W.Wendland
- 1995 Invited Senior research fellow at the University of Tasmania, Australia
- 1993–1998 group cooperation programme *Randasymptotik* with prof. W.Wendland (Stuttgart, Germany); supported by the German Research Council (DFG). Research Director of the Georgian team.
- 1993 Individual grant of the American Mathematical Society.
- 1994 Grant of the International Science Foundation (G.Soros Foundation). Research Director.
- 1995 Invited Senior research fellow at the University of Tasmania, Australia.
- 1998–2001. INTAS-grant, coordinator Prof. W.Wendland (Stuttgart University). Research Director of the Georgian team.
- 2000–2002. Contract with Dornier–DaimlerChrysler. Research Director.
- 2002 Milnor Scholarship, visit to University of Missouri, Columbia, Missouri, USA.
- 2003-2004 EPSRC grant for 3 month. King’s College, London, UK (Fall semester 2003).
- 2006 grant of the Georgian National Science Foundation GNSF/ST06/3-001. Research Director.
- 2007-2010 grant of the Georgian National Science Foundation GNSF/ST07/3-175. Research Director.
- 2007-2010 grant of the Georgian National Science Foundation GNSF/ST07/3-170. Principal Researcher.
- Other invited positions for joint research or talks: Denmark 1994; England 1992, 1994; France 1999,2001; Germany 1975, 1992-2002; Italy 1983; Kuwait 1997; The Netherlands 1986, 1989; Portugal 1992, 2001, 2002, 2005.

International workshops, conferences, symposia etc.:

- before 2001 Germany 1985, 1986, 1988-2001 every year; International Congress of mathematics, Berlin, Germany, 1998; IWOTA, Canada, Calgary 1988; Rotterdam, Netherlands, 1989; IWOTA, Canada, Vinnipeg, 1994; IWOTA, the Netherlands 1989; Töplitz Conference, Tel Aviv, Israel 1993; Conference on Complex Analysis, Mexico 1994; National Congress of Mathematicians, Iran 1996; ICIAM congress, Paris, France 1996; Turkey 1997; England 1997; Portugal IWOTA 2000.
- 2001 – International Conference "3D-Singularities in Elasticity" University of Karlsruhe, Germany, 22-24 November 2000.
- International Conference "Toeplitz Matrices". Pobershau, Germany, 8-11 April, 2001.
- Congress of Georgian Mathematicians, Tbilisi, Georgia, 11-13 October 2001
- 2002 – International Workshop "The treatment of Corners in Layered Structures". University of Karlsruhe, Germany, 18.12.2001.
- International Conference: "Factorization, Singular Operators and related Problems (FSORP)" (in honour of Georgui Litvinchuk on his 70-th anniversary), University of Madeira, Portugal, 28.01.02-01.02.02, 2002.
- International seminar on "Contact and Fracture Problems". Physikzentrum Bad Honnef, Germany, May 27-29, 2002.
- World congress of Mathematicians, Beijing, August, 2002 (supported by the Chinese Mathematical Union & the World Mathematical Union)
- Conference "New Trends in Boundary Elements", Oberwolfach, Germany, December 1-7, 2002.
- 2003 – Spring School 'Operator Algebras on manifolds with Singularities". Potsdam, Germany, 17.03.2003 - 21.03.2003.
- Memorial Workshop of E. Meister "Operator Theory in Analysis and Engineering". Technical University of Darmstadt, Germany, 17.06.03-18.06.03
- IWOTA-03 International Workshop on "Operator Theory and Applications". Cagliari, Sardinia, 23.06.03-27.06.03.
- Workshop devoted to I. Gohberg's 75-th Birthday Anniversary "Operator Theory and Applications". University of Amsterdam, Netherlands, 19.08.03 - 23.08.03
- Workshop devoted to 100-th birthday anniversary of V. Kupradze "Potential Theory: Applications in Solid Mechanics and Acoustic And Electromagnetic Scattering Theory". Tbilisi, Georgia, 24.10.03-27.10.03
- 2004 – Workshop "Numerical and Asymptotic Methods for Kinetic Equations". University of Saarland, Saarbrücken, Germany, February 23-25, 2004.
- III International Conference on Boundary Integral Methods: Theory and Applications. University of Reading, England, September 14-18, 2004.

- Stuttgart, Workshop devoted to Prof. Emeritus W. L. Wendland. University of Stuttgart, Germany, 22.10.2004
- Workshop devoted to 60-th birthday of Prof. E. Albrecht. University of Saarbrücken, Germany, October 29-30, 2004.
- Workshop "Composite Forschung in der Mechanik", University of Paderborn, Germany December 14-15, 2004.
- 2005 – International conference "Operator Theory, Function Spaces and Applications". University of Aveiro, Portugal, 07.07.2005–09.07.2005. Plenary Lecture.
- 2006 – International Conference "Analysis and Partial Differential Equations" Banach Center, Bedlewo, Poland, 18.06.2006-24.06.2006. Invited Lecture.
- International Conference "Operator Theory and Applications" Lisboa, Portugal, 01.09.2006-05.09.2006. Plenary talk.
- International Conference "Research in Mechanics of Composites", Bad Herrenalb, Germany, Invited Lecture. 26.11.2006-29.11.2006.
- 2007 – IUTAM-ISAAC International conference dedicated to the Centennial of I. Vekua "Complex Analysis, Partial Differential Equations and Mechanics Of Continua" Tbilisi, Georgia, 23.04.2007-27.04.2007. Plenary Lecture.
- International conference dedicated to the Centennial of I. Vekua "Differential Equations, Theory of Functions & Applications". Novosibirsk, Russia 28.05.2007-02.2007. Plenary Lecture.
- 2008 – "Analyses of boundary element methods". Oberwolfach, Germany April 13-19. Invited Lecture.
- "Operator Theory and Applications"-IWOTA 2008. July 13-19, Williamsburg USA, Invited speaker.
- "Toeplitz-Like Operators And Related Topics" Mexico city, Mexico, November 18-21, Plenary speaker.
- 2009 – "Operator Theory and Applications"-IWOTA 2009, September 21-25, Guanajuato, Mexico, Plenary speaker.
- V Congress of Mathematicians of Georgia, Batumi-Kutaisi, October 5-12. Chairmen of the Congress.
- ASME International 2009, Mechanical Engineering Congress & Exposition IMECE, November 14-21, 2009, Orlando, Florida, USA.
- 2010 – "Operator Theory and Applications"-IWOTA 2010, July 12-16, Berlin, Germany, Invited Lecture.
- General Assembly of the International Mathematical Union, August 17-18, Delegate of Georgia.
- International Congress of Mathematicians, August 19-27, Hyderabad, India, Invited Lecture.
- I International Conference of the Georgian Mathematical Union, Batumi, September 12-19. Chairmen of the Conference, Plenary Lecture.

Invited talk on seminars:

- 2001 – Technical University of Chemnitz, Germany
– University of Stuttgart, Germany
– University of Potsdam, Germany
– University of Rennes, France
– Technical University of Lissabon (Instituto Superior tecnico), Portugal
– University of Aveiro, Portugal
– University of Faro, Portugal
- 2002 – 17.01.02. University of Stuttgart, Germany: “Boundary value problems on a smooth surface with a smooth boundary”.
– 07.03.02. University of Potsdam, Germany: “Asymptotics without logarithmic terms for crack problems”.
– 13.03.03. University of Chemnitz, Germany: “Singular Integral Equations on Piecewise Smooth Curves in Spaces of Smooth Functions”.
– 14.10.02, University of Missouri, Columbia, USA: “Asymptotics for crack problems”
– 1.21.10.02 Texas A & M University, College Station, USA: “Asymptotics for Pseudodifferential equations on ”manifolds with boundary
– 29.02 2002 College of William & Mary, Williamsburg, USA: Boundary value problems on a hypersurfaces with boundary”.
– 30.02 2002 College of William & Mary, Williamsburg, USA: “Asymptotics for crack problems”
– 2,11.02 North Eastern University, Boston. Title: “Asymptotics for crack problems”
- 2003 – 21.02.03. Seminar “Partielle Differentialgleichungen”, University of Potsdam, Germany.: “Asymptotics without logarithmic terms for crack problems”.
– 18.07.03. Seminar “Integral Equations and Approximation”, Technical Universita of Chemnitz: “On the spatially homogeneous Boltzmann equation”.
– 04.12.03. Seminar “Spectral Theory of Operators”, Kings College, University of London, Great Britain.: “On the spatially homogeneous Boltzmann equation”.
- 2004 – 25.02.04. University of Göttingen, Sweeden. Talk: “on spatially homogeneous Boltzmann equations”.
- 2005 – 25.02.05. Seminar “Functional Analysis and Applications”, Instituto Superior Technico, Lisboa, Portugal: “Interface Cracks In Anisotropic Composite Materials”.
– 03.03.05. Seminar on Analysis, University of Aveiro, Portugal: “Uniqueness And Stability Of A Classical Solution To A Non Cut Off Boltzmann Equation”.

- 18.03.05. Open seminar, center of Applied mathematics, Instituto Superior Technico, Lissabon, Portugal: “Uniqueness And Stability Of A Classical Solution To A Non Cut Off Boltzmann Equation”.
- 08.06.05. Kolloquium des Graduiertenkollegs, Universität Leipzig: “Interface Cracks In Anisotropic Composite Materials”.
- 2006 – 29.03.06. Seminar “Functional Analysis and Applications”, Instituto Superior Technico, Lisboa, Portugal: “Differential operators and boundary value problems on surfaces”.
- 06.04.06. Seminar on Analysis, University of Aveiro, Portugal: “Differential operators and boundary value problems on surfaces”.
- 2007 – 25.01.07. Oberseminar, Institut für Angewandte mathematik, University of Saarland Saarbrücken, Germany, “Boundary value problems for shell equations”.
- 22.02.07. Seminar “Functional Analysis and Applications”, Instituto Superior Technico, Lisboa, Portugal: “Boundary value problems for shell equations”.
- 02.03.07. Seminar on Analysis, University of Aveiro, Portugal: “Boundary value problems for shell equations”.
- 06.03.07 - Seminar ”Harmonic Analysis, Operator Theory and Applications”, University of Faro, Portugal: ”Asymmetric factorizations of matrix functions on the real line”.
- 13.03.07 - Seminar at the Department of Civil Engineering, Istanbul Technical University ”Boundary value problems for partial differential equations on hypersurfaces”
- 2008 – 03.04.08 - University of Aveiro, Portugal: “On the maxwell system”.
- 17.04.08 - Instituto Superior Technico, Lisboa, Portugal: “Partial differential equations on hypersurfaces”.
- 24.04.08 - University of Faro, Portugal: “On the maxwell system”.
- 2010 – 03.06.10 - University of Kishinev, Moldova ”Equivalent regularization of Maxwell’s system”

Activities in Mathematical Societies and Mathematical Unions:

- 1991 Member of the American Mathematical Society
- 1991–1997 Vice President of the Georgian Mathematical Union
- 1997–2001 The President of the Georgian Mathematical Union
- 1998 Delegate of Georgia on the General Assembly of the International mathematical Union (Leipzig, Germany) and European Mathematical Union (Berlin, Germany)
- 2009–pres. The President of the Georgian Mathematical Union
- 2010 Delegate of Georgia on the General Assembly of the International Mathematical Union, August 17-18, Bangalore, India.

Membership in Editorial Boards of Scientific Journals:

- Integral Equations and Operator Theory, Birkhauser
- Georgian Mathematical Journal, De Gruyter
- Journal of Applied Mathematics & Bioinformatics, International Scientific Press
- Memoirs on partial Differential Equations and Mathematical Physics, A. Razmadze Mathematical Institute, Tbilisi
- Proceedings of A. Razmadze Mathematical Institute, Tbilisi
- Georgian International Journal of Science and Technology, Nova Science Publishers
- Tbilisi Mathematical Journal

Research interests:

- Partial differential equations: Boundary value problems; Applications to Maxwell's equations, shell theory and elasticity equations;
- Pseudodifferential equations;
- Nonlinear Boltzmann equations;
- One multidimensional singular integral equations
- Discrete and integral convolution equations
- Approximate solutions of integral equations