

## CURRICULUM VITAE of Dr. AMIRAN GOGATISHVILI Csc

**Born:** July 17, 1961, Sachkhere, Georgia

**Marital status:** married to Ia Giorgobiani

**Children:** Two sons, Giorgi (born 1997) and Nodari (born 1999)

**Citizenship:** Georgia

**Employer:** Institute of Mathematics of the Academy of Sciences of the Czech Republic

### **Education and scientific degrees:**

- 1978 - 1983, undergraduate study at the Faculty of Mechanics and Mathematics at the Tbilisi State University, Tbilisi, Georgia;
- 1983 Honours diploma of Mathematician (M.S.), Speciality- Mathematical Analysis;
- 1983 - 1987, post-graduate student of A. Razmadze Mathematical Institute of the Georgian Academy of Sciences, Tbilisi, Georgia;
- 1988, the academic degree of Candidate of Physical and Mathematical Sciences (Ph.D. equivalent), awarded by the decision of the Board under Tbilisi State University supreme certification commission under council of Ministers of the USSR by the decision of the Board under Tbilisi State University;

Thesis title: Fractional maximal functions and potentials in weighted spaces (Russian). Tbilisi State University 1988.

### **Awards:**

1987, The Prize of the A. Razmadze Mathematical Institute of Georgian Academy of Sciences for the young mathematician.

### **Professional experiences:**

- July 2009 - up to now Research Fellow at the Department of Topology and Functional Analysis of the Institute of Mathematics of the Academy of Sciences of the Czech Republic;

- October 2000 - June 2009 Research Fellow at the Department of Qualitative Methods of Mathematical Analysis of the Institute of Mathematics of the Academy of Sciences of the Czech Republic;
- October 1998 - September 2000, Visiting Professor at the Institute of Mathematics of the Academy of Sciences of the Czech Republic;
- June 1997 - May 1998, NATO and The Royal Society Postdoctoral Fellowship at the School of Mathematics of the University of Wales, Cardiff, UK;
- February 1997 - June 1997, External lecturer at the Department of Applied Mathematics, Georgian Technical University, Tbilisi;
- May 1992 - October 2006 Senior scientific researcher of the Department of Mathematical Analysis of the A. Razmadze Mathematical Institute of Georgian Academy of Sciences, Tbilisi;
- September 1987 - April 1992, Scientific researcher at the Department of Mathematical Analysis of the A. Razmadze Mathematical Institute of Georgian Academy of Sciences, Tbilisi.

**Research interest:** real analysis and functional analysis, function spaces, interpolation, weighted inequalities, integral operators, Sobolev embeddings, application to PDE's.

**Publishing activity:** 121 publications including: 1 monograph, 99 original research papers in academic journal, 15 papers in the conference proceedings, and 6 preprints.

**100** publications cited 551 times by 275 authors (MathSciNet, February 2017).

**68** publications cited 536 times, **h-index:** 14 (ISI Web of Knowledge, February 2017).

**71** publications cited 500 times, **h-index:** 12 (Scopus, February 2017).

### Participation in the Conferences and contributed talks:

- 2016 (4-9 July), Ninth International Conference Function Spaces, Differential Operators and Nonlinear Analysis Prague, Czech Republic, July 4-9, 2016, (Speaker),

Title of the talk: Some  $s$ -numbers of an integral operator of Hardy type in Banach function spaces

- 2016 (28 April), Colloquium, University of Poitiers, Poitiers, France

Title of the talk: Generalized weighted Lorentz spaces;

- 2016 (21 March), Analysis Seminar, Ahi Evran University, Kirsehir, Turkey

Title of the talk: Boundedness of Stein's spherical maximal function in variable Lebesgue space and application to the wave equation;

- 2015 (27 November), Analysis Seminar, Friedrich-Schiller-University Jena, Germany,

Title of talk: Characterizations of Sobolev, Besov and Triebel-Lizorkin Spaces via averages on balls;

- 2015 ( 24 - 27 June), Singular PDEs, Analytical Tools and Applications, June 24 - 27, Male Ciche 2015, Poland, (Invited Speaker)

Title of talk: Weighted iterated Hardy-type inequalities;

- 2015 (28 May), Colloquim del Departamento de Análisis Matemático, Universidad Complutense de Madrid,

Title of talk: Ulyanov-type inequalities between Lorentz-Zygmund spaces

- 2015 (15 May), Seminar in Analysis and PDE, Universidade de Coimbra, Coimbra, Portugal,

Title of talk: Boundedness of Stein's spherical maximal function in variable Lebesgue space and application to the wave equation;

- 2014 (9 - 15 June), School on Nonlinear Analysis, Function Spaces and Applications 10, June 9 - 15, Trest Castle, Czech Republic 2014, (Speaker),  
Title of talk: Maximal multiplier operators in  $L^{p(\cdot)}(R^n)$  spaces;
- 2014 (30 May), Talk for all graduates, Beijing Normal University, Beijing, China,  
Title of talk: Boundedness of Stein's spherical maximal function in variable Lebesgue space and application to the wave equation;
- 2014 (16 May), Analysis Seminar, Beijing Normal University, Beijing, China,  
Title of talk: Sobolev spaces defined on a doubling metric measure spaces and real interpolation;
- 2014 (14 April), Analysis Seminar, Bilkent University, Ankara, Turkey,  
Title of talk: The weighted Stieltjes inequality and applications;
- 2013 (21 November), Colloquim del Departamento de Análisis Matemático, Universidad Complutense de Madrid,  
Title of talk: Boundedness of Stein's spherical maximal function in variable Lebesgue space and application to the wave equation;
- 2013 (23-28 October), International Conference on Fourier Analysis and Approximation Theory, dedicated to the 80th birthday of Academician Levan Zhizhiashvili, Bazaleti (Georgia) October 23-28, 2013, (member of the organizing committee and Speaker),  
Title of talk: Boundedness of Stein's spherical maximal function in variable Lebesgue space and application to the wave equation;
- 2013 (24-31 August), Second international conference, Mathematics in Armenia: Advances and Perspectives, 24-31 August, 2013, Tsaghkadzor, Armenia, Dedicated to the 70th Anniversary of Foundation of Armenian National Academy of Sciences, (Invited Speaker),

Title of talk: Boundedness of Stein's spherical maximal function in variable Lebesgue space and application to the wave equation;

- 2013 (14 May), Analysis Seminar, Kirikkale University, Kirikkale University, Turkey,

Title of talk: Reduction theorems for operators on the cones of monotone functions

- 2012 (4 December), Istituto per le Applicazioni del Calcolo "Mauro Picone" - UOS di Napoli, Seminar in analysis and application,

Title of talk: The weighted Stieltjes inequality and applications;

- 2012 (2-5 October), International Scientific Conference on Functional Analysis and its Application, 2-5 October, Astana, Kazakhstan 2012, (Invited Speaker),

Title of talk: Reduction theorems for operators on the cones of monotone function;

- 2012 (9-13 July), Calculus of Variations and PDEs, satellite conference of the 6th European Congress of Mathematics, Szczawnica, Poland, 9-13 July, 2012, (Speaker),

Title of talk: Reduction theorems for operators on the cones of monotone functions;

- 2012 (4 June), Analysis Seminar, Kirikkale University, Kirikkale University, Turkey,

Title of talk: Some properties of quasi-concave functions;

- 2011 (10 October), Barcelona Analysis Seminar, Centre de Recerca Matemàtica, Bellaterra, Barcelona, Spain,

Title of talk: Sobolev spaces defined on a doubling metric measure spaces and real interpolation;

- 2011 (26-30 September), International Conference on Function Spaces and Variable Exponent Analysis September 26 to 30, 2011, Centre de Recerca Matemàtica (CRM), Bellaterra, Barcelona, Spain, (Invited Speaker),

Title of talk: Embeddings and the growth envelope of Besov spaces involving only slowly varying smoothness;

- 2011 (18-24 September), 8th International Conference on Function Spaces, Differential Operators, Nonlinear Analysis (FSDONA-2011) 18-24 September, 2011, in Tabarz/Thür. (Germany) <http://fsdona2011.uni-jena.de/>, (Speaker),

Title of talk: Embeddings of Besov spaces with generalized smoothness into Lorenz spaces;

- 2011 (17 June), Seminar in Analysis and PDE, Universidade de Coimbra, Coimbra, Portugal,

Title of talk: The weighted Stieltjes inequality and applications;

- 2011 (20-27 May), The International Workshop on Operators in Morrey Type Space and Applications - OMTSA 2011, Kirsehir, Turkey, (Invited Speaker),

Title of talk: Characterization of the dual and pre-dual spaces of the local and global Morrey-type spaces;

- 2010 (22-25 September), Workshop in Inequalities and PDEs, Male Ciche, Poland, (Invited Speaker),

Title of talk: Recent development in the theory of the weighted Hardy inequalities;

- 2010 (11-17 September), Nonlinear Analysis, Function Spaces and Applications (NAFSA 9) September 11 - 17, 2010, Trest Castle, Czech Republic member of the organizing committee;
- 2010 (June 28-July 2)The Jozef Marcinkiewicz Centralny conference, Poznan, Poland, (Speaker),

Title of talk: Calderón-type interpolation theorem for operators with nonstandard endpoint behaviour and applications to sharp sobolev embeddings;

- 2010 (June 17, 2010), Seminar in functional analysis and application, Universidade de Aveiro, Aveiro, Portugal;

Title of talk: Calderón-type interpolation theorem for operators with nonstandard endpoint behaviour and applications to sharp sobolev embeddings;

- 2010 (May 19) Analysis seminar, University of Jyväskylä, Finland,

Title of talk: Calderón-type interpolation theorem for operators with nonstandard endpoint behaviour and applications to sharp sobolev embeddings;

- 2010 (April 14), Seminar at the Department of Mathematics, Lulea University of Technology, Lulea, Sweden,

Title of talk: Some open problems in the weighted Hardy inequality;

- 2010 (March 30), Seminar in the Department of Mathematics and Art, Ahi Evra University, Kirsehir, Turkey,

Title of talk: Reverse Hardy inequality;

- 2010 (January 22-27), The Joint Mathematical Conference CSASC 2010, (XIth Conference of Czech Mathematicians), Prague, Czech Republic, (Invited Speaker)

Title of talk: Calderón-type interpolation theorems and applications to sharp Sobolev embeddings;

- 2009(March 4-8) 4th World Conference on 21st Century Mathematics 2009, Abdus Salam School of Mathematical Sciences, GC University Lahore, Pakistan, (Invited Speaker),

Title of talk: Optimal embeddings of Bessel-Potential-type spaces into generalized Hölder spaces involving  $k$ -modulus of smoothness;

- 2008(July 6-12 ) Workshop on Function Spaces and Applications, Freiburg/Unstrut (Germany), (Speaker),

Title of talk: Interpolation orbits and optimal Sobolev's embeddings;

- 2007(August 13-18) 6th International ISAAC (International Society for Analysis, its Applications and Computation) congress, Ankara, Turkey, (Speaker),

- Title of talk: Optimal Sobolev's embeddings;
- 2007(May 21), Analysis seminar, University of Helsinki, Finland,  
Title of talk: Sobolev's embeddings and interpolation in the Lorentz spaces;
  - 2007 (May 17) Analysis seminar, University of Jyväskylä, Finland,  
Title of talk: Interpolation Orbits and optimal Sobolev's embeddings;
  - 2007( May 15), Analysis seminar, University of Oulu, Finland,  
Title of talk: The optimal embedding for the Calderón type spaces and the J-method spaces;
  - 2006 (September 14), Seminar in functional analysis and application, Universidade de Aveiro, Portugal,  
Title of talk: " A reduction theorem for supremum operators " ;
  - 2005 (September 11-17), Workshop on Fractal Analysis, Eisenach, Germany, (Speaker),  
Title of talk: Integral operators on metric spaces;
  - 2005 (May 26), Functional Analysis Seminar, University of Helsinki, Finland,  
Title of talk: A non- doubling Trudinger inequality;
  - 2005 (May 6), Analysis seminar, University of Jyväskylä , Finland,  
Title of talk: Optimal embeddings of Bessel-potential-type spaces into Lorentz- Karamata spaces;
  - 2004 (December 8), Seminar at the Department of Mathematics, Lulea University of Technology, Lulea, Sweden,  
Title of talk: Embeddings and Duality theorems for weak classical Lorentz spaces;
  - 2004 (October 21), Seminar in functional analysis and application, Universidade de Aveiro, Portugal,



Title of talk: An equivalence theorems for some scales of integral conditions related to Hardy's inequality;

- 2004 (April 25), Seminar in Problems of Modern Analysis, Technion, Haifa (Israel),

Title of talk: Functional properties of the space  $S_p(w)$ ;

- 2004 (April 19), Analysis seminar, Bar-Ilan University Ramat Gan, Israel,

Title of talk: A new type of symmetric spaces;

- 2003 (July 21-25), The Wladyslaw Orlicz Centenary Conference and function spaces VII, Poznan (Poland), (Speaker),

Title of talk: Boundedness of Classical operators on Lorentz spaces;

- 2003 (April 14), Seminar in Problems of Modern Analysis, Technion, Haifa (Israel),

Title of talk: Stability of the real interpolation method;

- 2002 (November 7-9), Real analysis symposium, Kagoshima University, Kagoshima (Japan), (Invited Speaker),

Title of talk : Integral operators defined on metric spaces;

- 2002 (September 25-28), Autumn Conference Mathematical Society of Japan, Shimane University, Matsue,(Japan), (Invited Speaker),

Title of talk: Discretization and anti-discretization of function spaces;

- 2002 (May 22-30), International Conference in Analysis in honor of Y.Brudnyi, Technion, Haifa (Israel),(Speaker),

Title of talk: Duality principles in Lorentz spaces and embeddings;

- 2001 (June, 28 - July, 4), International Conference on Function Spaces, Differential Operators, and Nonlinear Analysis in honor of Hans Triebel on his 65th birthday, Teistungen (Germany)(Speaker),

Title of talk: A new characterization of the associate space to  $\Gamma^p(v)$ ;

- 2000 (August 17-22), Conference on Function Spaces, Interpolation Theory, and related topics, in honor of Jaak Peetre on his 65th birthday, Lund University, Sweden, (Speaker),

Title of talk: Duality principles and reduction theorems;

- 1998 (May 31 -June 6), Spring School "Nonlinear analysis, Function Spaces, and Applications 6", Prague, Czech Republic, (Speaker),

Title of talk: Certain Volterra integral operators in weighted rearrangement invariant Banach function spaces;

- 1996 (June 17-20), 5th International Conference on Harmonic Analysis and Partial differential equations, El Escorial, Spain, (Speaker),

Title of talk: Two-weighted mixed inequalities in Orlicz classes for fractional maximal functions defined on homogeneous type spaces;

- 1995 (September 3-9), International conference of Function Spaces, Differential Operators and Nonlinear Analysis, Paseky nad Jizerou, Czech Republic, (Speaker),

Title of talk: Weighted inequalities for one-sided maximal functions in Orlicz classes;

- 1994 (May), Mathematical Institute, Academy of Sciences of the Czech Republic, Prague, (Speaker),

Title of talk: Criteria of weight inequalities for integral transforms defined on homogeneous type spaces;

- 1994 (May 23-28), Spring School " Nonlinear analysis, Function Spaces, and Applications 5", Prague, Czech Republic,(Speaker),

Title of talk: Criteria of weighted inequalities in Orlicz classes for maximal functions defined on homogeneous type;

- 1994 (May 2-6), International conference of Topological Vector Spaces, Algebras and Related Areas, McMaster University, Hamilton, Canada, (Speaker),

Title of talk: Criteria of weight inequalities for integral transforms defined on homogeneous type spaces;

- 1991 (June 6-11), International symposium in Continuum Mechanics and Related Problems of Analysis. Tbilisi, Georgia, (Speaker),

Title of talk: Weak type weighted inequalities for maximal functions with respect to the general basis;

- 1990 (May 21-25), Spring School "Nonlinear analysis, Function Spaces, and Applications 4", Roudnice nad Labem, Czechoslovakia, (Speaker),

Title of talk: Hilbert transform in Zygmund classes, Maximal functions in Morrey-Campanato spaces.

### **Short stays and invited research visits:**

- Universidade de Coimbra, Portugal, two visits 8 days in 2016, (invited research visit);
- Tbilisi State University, Tbilisi, Georgia, two visits three weeks in 2016, (Supported by Shota Rustaveli National Science Foundation);
- Centre de Recerca Matemàtica (CRM), Bellaterra, Barcelona, Spain, one month in 2016, (invited research visit);
- University of Poitiers, Poitiers, France, one month in 2016, (visiting Professor);
- Ahi Evra University (Kirsehir), Turkey, 10 days in 2016, (exchange program);
- Friedrich-Schiller-University Jena, Germany, 4 days in 2015 (invited research visit);
- Institute of Mathematics of the Polish Academy of Sciences, Warsaw, Poland, 8 days in 2015 (exchange program);
- Tbilisi State University, Tbilisi, Georgia, two visits six weeks in 2015, (Supported by Shota Rustaveli National Science Foundation);
- Universidad Complutense de Madrid, 6 days in 2015, (invited research visit);
- Universidade de Coimbra, Portugal, two visits 16 days in 2015, (invited research visit);
- Kirikkale university (Kirikkale) and Ahi Evra University (Kirsehir), Turkey, 14 days in 2015, (exchange program);
- Tbilisi State University, Tbilisi, Georgia, two visits six weeks in 2014, (Supported by Shota Rustaveli National Science Foundation);
- Akdeniz University, Antalya, Turkey 6 days in 2014, (invited research visit);
- Beijing Normal University, Beijing, China, 24 days in 2014, (exchange program);

- Karlstad University, Karlstad, Sweden, 6 days in 2014, (invited research visit);
- Ankara university(Ankara), Kirikkale univeristy (Kirikkale) and Ahi Evra University (Kirsehir), Turkey, 9 days in 2014, (exchange program);
- Lulea University of Technology, Sweden. 9 days in 2014, (invited research visit);
- Universidad Complutense de Madrid, 8 days in 2013, (invited research visit);
- Tbilisi State University, Tbilisi, Georgia, three weeks in 2013, (Supported by Shota Rustaveli National Science Foundation);
- Tbilisi State University, Tbilisi, Georgia, four weeks in 2013, (Supported by Shota Rustaveli National Science Foundation);
- Universidade de Coimbra, Portugal, two weeks in 2013, (invited research visit);
- Tbilisi State University, Tbilisi, Georgia, three visits all together nine weeks in 2013, (Supported by Shota Rustaveli National Science Foundation);
- Ankara university(Ankara) , Kirikkale univeristy (Kirikkale) and Ahi Evra University (Kirsehir), Turkey, 10 days in 2013, (exchange programme);
- Lulea University of Technology, Sweden. two weeks in 2013, (invited research visit);
- Istituto per le Applicazioni del Calcolo "Mauro Picone" - UOS di Napoli, Italy, 8 days in 2012, (invited research visit);
- L.N. Gumilyov Eurasian National University, Astana, Kazakhstan, two weeks in 2012, (invited research visit);
- Tbilisi State University, Tbilisi, Georgia, four weeks in 2012, (Supported by Shota Rustaveli National Science Foundation);

- Universidade de Coimbra, Portugal, two weeks in 2012, (invited research visit);
- Ankara university(Ankara), Kirikkale univeristy (Kirikkale) and Ahi Evra University (Kirsehir), Turkey, 10 days in 2012, (exchange programme);
- Tbilisi State University, Tbilisi, Georgia, three weeks in 2012, (Supported by Shota Rustaveli National Science Foundation);
- Lulea University of Technology, Sweden. 8 days in 2012, (invited research visit);
- Cardiff University, Cardiff, UK, one week in 2012, (invited research visit);
- Lulea University of Technology, Sweden. 10 days in 2011, (invited research visit);
- Centre de Recerca Matematica (CRM), Bellaterra, Barcelona, Spain, one month in 2011, (invited research visit);
- Universidade de Coimbra, Portugal, two weeks in 2011, (exchange program);
- Universidade de Coimbra, Portugal, two weeks in 2010, (exchange program);
- Jyväskylä University, 10 days in 2010, (invited research visit);
- Lulea University of Technology, Sweden. four weeks in 2010, (invited research visit);
- Ahi Evra University, Kirsehir, Turkey, one week in 2010, (invited research visit);
- Universidad Complutense de Madrid, 10 days in 2010, (invited research visit);
- Universidade de Coimbra, Portugal, two weeks in 2009, (exchange program);

- Universidade de Aveiro, Portugal, one week in 2008, (exchange program);
- Universidade de Coimbra, Portugal, one week in 2008, (exchange program);
- Brock University, St.Catharines, Canada, two months in 2008 (invited research visit);
- Cardiff University , Wales, UK, one week in 2007, (research visit supported by INTAS gran);
- Universidade de Coimbra, Portugal, one week in 2007, (exchange program);
- Universidade de Aveiro, Portugal, one week in 2007, (exchange program);
- University of Helsnki, Finland, one week in 2007, (exchange program);
- University of Jyväskylä, Jyväskylä, Finland, four weeks in 2007 (exchange program);
- Universidade de Coimbra, Portugal, one week in 2006, (exchange program);
- Universidade de Aveiro, Portugal, one week in 2006, (exchange program);
- University of Barcelona, Spain, one week in 2006, (invited research visit);
- University of Helsinki, Finland, one week in 2005, (invited research visit);
- University of Jyväskylä, Jyväskylä, Finland, four weeks in 2005 (exchange program);
- Friedrich-Schiller-University Jena, Jena, Germany, one week in 2005 (invited research visit);
- Lulea University of Technology, Sweden, two weeks in 2004, (invited research visit);

- Universidade de Coimbra, Portugal, two weeks in 2004, (invited research visit);
- Universidade de Aveiro, Portugal, two weeks in 2004, (invited research visit);
- Cardiff University , Wales, UK, one week in 2004, (research visit supported by Leverhulme Trust Grant);
- Technion, Haifa, Israel, three weeks in 2004, (exchange program);
- Weizmann Institute of Science, Rehovot, Israel, one week in 2004, (exchange program);
- University of Jyväskylä, Jyväskylä, Finland, three weeks in 2003 (exchange program);
- Cardiff University, Cardiff, UK, two weeks in 2003 (research visit supported by Leverhulme Trust Grant);
- Weizmann Institute of Science, Rehovot, Israel, three weeks in 2003 (exchange program);
- Okayama University, Okayama, Japan, tree weeks in 2002 (exchange program);
- Osaka Kyoiku University, Osaka, Japan, one week in 2002 (exchange program);
- Hokkaido University, Sapporo, Japan, one week in 2002 (exchange program);
- Waseda University, Tokyo, Japan, one week in 2002 (exchange program);
- Nara Women's University, Nara, Japan, one week in 2002 (exchange program);
- Weizmann Institute of Science, Rehovot, Israel, one week in 2002 (research visit supported by NATO);
- Cardiff University, Cardiff, UK, two weeks in 2002 (research visit supported by Leverhulme Trust Grant);



- Cardiff University, Cardiff, UK, tree weeks in 2001 (research visit supported by Leverhulme Trust Grant);
- Brock University, St.Catharines, Canada, two months in 2001(invited research visit);
- McMaster University, Hamilton, Canada, one week in 2001 (invited research visit);
- Sussex University, Brighton, UK, one week in 1998 (invited research visit);
- Sussex University, Brighton, UK, one week in 1997 (invited research visit);
- McMaster University, Hamilton, Canada, one week in 1994 (invited research visit);
- University, St.Catharines, Canada, two months in 1994(invited research visit).

**Grants:**

1. Project Title: Weighted inequalities for integral operators. project period of time 1997-1999 , awarded by the Georgian Academy of Sciences, grant no. 1.7;
2. Project Title: Function spaces, weighted inequalities and approximation numbers for integral operators, project period of time 2001-2003, awarded by the Leverhulme Trust, Grant No. F/00407/E, UK;
3. Project Title: Weighted inequalities, function spaces, interpolation, extrapolation, approximation and entropy numbers, project period of time 2002-2003, awarded by the NATO-grant reg. No PST. CLG. 978694;
4. Project Title: Function spaces and weighted inequalities for integral operators, project period of time 2001-2003, awarded by the Grant Agency of the Czech Republic, research grant no. 201/01/0333;
5. Project Title: Function spaces and weighted inequalities for integral operators, project period of time 2005-2007, awarded by the Grant Agency of the Czech Republic, research grant no. 201/05/2033;
6. Project Title: Functional spaces and applications to partial differential equations, project period of time 2006-2008, awarded by the INTAS, project 8157;
7. Project Title: Interpolation approach to embedding involving Sobolev, Besov and Hölder spaces, project period of time 2006 - 2008, awarded by the GRICES (Portugal)/ASCR, collaboration grant;
8. Project Title: Function spaces and interpolations, project period of time 2007-2008, awarded by the AV CR and VŠ ČR/DAAD SRN, PPP Project No. D 15 - CZ 2/07-08;
9. Project Title: Function spaces and weighted inequalities and interpolation, 2008 -2012, awarded by the Grant Agency of the Czech Republic, research grant no. 201/08/0383;
10. Project Title: Interpolation approach to embedding involving Sobolev, Besov and Hölder type spaces, project period of time 2009 - 2010, awarded by the FCT(Portugal)/ASCR collaboration grant;

11. Project Title: Inequalities for moduli of smoothness and their applications to the study of the embeddings between Sobolev and Besov type spaces, project period of time 2011, awarded by the FCT(Portugal)/ASCR collaboration grant;
12. Project Title: Geometry of function spaces, interpolation and embedding theorems, project period of time 2012-2014, awarded by Shota Rustaveli National Science Foundation, research grant no. 13/06;
13. Project Title: Function spaces and weighted inequalities and interpolation II, project period of time 2013 -2017, awarded by the Grant Agency of the Czech Republic, research grant no. P201/13/14743S;
14. Project Title: Operators in some function spaces and their applications in Fourier Analysis, project period of time 2013-2016, awarded by Shota Rustaveli National Science Foundation, research grant no. 31/48;
15. Project Title: Function spaces, weighted inequalities for integral operators and problems of summability of Fourier series, project period of time 2014-2017, awarded by Shota Rustaveli National Science Foundation, research grant no. DI/9/5-100/13.
16. Project Title: Operators of Fourier analysis in some classical and new function spaces, project period of time 2016-2019, awarded by Shota Rustaveli National Science Foundation (SRNSF) grant no: 217282.

## Publication activity

### Monograph

1. I. Genebashvili, A. Gogatishvili, V. Kokilashvili and M. Krbec  
Weight theory for integral transforms on spaces of homogeneous type. Pitman Monographs and Survey in Pure and Applied Mathematics 92, Longman, Harlow, 1998. MR1791462 (2003b:42002)

### Research papers in academic journal

2. A. Gogatishvili  
Fractional maximal functions with respect to the basis of the convex comperable sets in weighted Lebesgue spaces, (Russian. English and Georgian Summaries), Soobshch. Akad. Nauk Grusin. SSR, 129(1988), no. 2, 273 - 275. MR0953054 (89g:42033)
3. A. Gogatishvili  
Weighted inequalities for potentials in spaces of homogeneous type, (Russian. English and Georgian Summaries), Soobshch. Akad. Nauk Grusin. SSR, 129(1988), no. 3, 493 - 495. MR0953066 (89i:42033)
4. A. Gogatishvili  
Riesz transforms and maximal functions in  $\varphi(L)$  classes, (Russian and Georgian Summaries), Soobshch. Akad. Nauk Grusin. SSR, 137(1990), no. 3, 489 - 492. MR1087544 (91j:42009)
5. A. Gogatishvili, V.Kokilashvili and M.Krbec  
Maximal functions in the classes  $\varphi(L)$ , (English, Russian original), Soviet Math. Dokl., 42(1991), no. 2, 488 - 490; translation from Dokl. Akad. Nauk SSSR, 314(1990), no. 3, 534 - 536. MR1094013 (92c:42018)

6. A. Gogatishvili  
Maximal functions with respect to the basis of the comperable convex sets in weighted Lebesgue spaces, (Russian. English Summary), Trudy Tbiliss. Mat. Inst. Razmadze Akad. Nauk Grusin. SSR, 95(1990), 20 - 38. MR1119755 (92h:42034)
7. A. Gogatishvili  
Weighted inequalities for vector-valued fractional maximal functions, (Russian. English Summary), Trudy Tbiliss. Mat. Inst. Razmadze Akad. Nauk Grusin. SSR, 98(1991), 9 - 18. MR1221298 (94e:26037)
8. A. Gogatishvili  
Weak type weighted inequalities for maximal functions with respect to the general basis, (Russian and Georgian Summaries), Soobshch. Akad. Nauk Grusin. SSR, 145(1992), no. 2, 249 - 252. MR1248367 (94m:42040)
9. A. Gogatishvili  
General weak-type inequalities for maximal operator and Riesz transforms, (Russian and Georgian Summaries), Soobshch. Akad. Nauk Grusin. SSR, 146(1992), no. 3, 497 - 500. MR1247940 (94m:42041)
10. A. Gogatishvili  
General weak type inequalities for maximal operators and singular integrals, (Georgian Summary), Proc. A.Razmadze Math. Inst., 101(1992), 47 - 63. MR1251273 (95e:42015)
11. A. Gogatishvili  
Riesz transforms and maximal functions in  $\varphi(L)$  classes, (Georgian Summary), Proc. A.Razmadze Math. Inst., 102(1993), 59 - 70. MR1268817 (95d:42024)
12. A. Gogatishvili  
Hilbert transform in Zygmund classes, (Georgian Summary), Proc. A.Razmadze Math. Inst., 102(1993), 71 - 84. MR1268818 (95d:47065)

13. A. Gogatishvili, V. Kokilashvili and M. Krbec  
Maximal functions,  $\varphi(L)$  classes and Carleson measures, (Georgian Summary), Proc. A.Razmadze Math. Inst., 102(1993), 85 - 97.  
MR1268819 (95e:42016)
14. A. Gogatishvili, L.Pick  
Weighted inequalities of weak and extra-weak type for the maximal operator and Hilbert transform, Czechoslovak Math. J., 43(118) (1993), no.3, 547 - 566. MR1249621 (95i:42013)
15. I. Genebashvili, A. Gogatishvili and V. Kokilashvili  
Criteria of general weak type inequalities for integral transforms with positive kernels, (English and Georgian Summaries), Proc. Georgian Acad. Sci., Math., 1 (1993), no. 1, 11 - 35; Georgian Math. J., 1(1994), no. 1, 9 - 29. MR1251491 (94j:42030)
16. A. Gogatishvili, V. Kokilashvili  
Criteria of weighted inequalities in Orlicz classes for maximal functions defined on homogeneous type spaces, (English and Georgian Summaries), Proc. Georgian Acad. Sci., Math., 1(1993), no. 6, 721 - 755; (English Summary), Georgian Math. J., 1(1994), no. 6, 641 - 673. MR1296573 (96b:42021)
17. A. Gogatishvili, V. Kokilashvili  
Necessary and sufficient conditions for weighted Orlicz class inequalities for maximal functions and singular integrals I, (English Summary), Georgian Math. J., 2(1995), no. 4, 361 - 384. MR1344301 (96g:42010)
18. A. Gogatishvili, V. Kokilashvili  
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