CURRICULUM VITAE

Dr. Berikbol T. TOREBEK

Born: 6 October 1985, Kazakhstan
Nationality: kazakh
Family status: married, three daughters and one son
Personal Address 1: 5/6 Athletic Village, Algabas-1 microdistrict, 050038, Almaty, Kazakhstan
Personal Address 2: Désiré Van Monckhovenstraat 42, B 9000 Ghent, Belgium
Professional Address 1: 125 Pushkin str. 050010 Almaty, Kazakhstan
Professional Address 2: 71 Al-Farabi ave. 050040 Almaty, Kazakhstan
Professional Address 3: Krijgslaan 281, Building S8, B 9000 Ghent, Belgium
Phone: +7(702) 125 1515, +7(705) 666 85 11
E-mail: torebek@math.kz, berikbol.torebek@ugent.be

POSITION

Associate Professor	
Al-Farabi Kazakh National University, Almaty	*Since September 2017*
Leading Researcher	
Institute of Mathematics and Mathematical Modeling, Almaty	*Since January 2018*
Postdoc Researcher	
Ghent University, Ghent, Belgium	*Since May 2019*

EDUCATION

Bachelor in Mathematics	
Ahmet Yasawi University, Turkistan	*2003–2007*
Master in Mathematics	
Ahmet Yasawi University, Turkistan	*2007–2009*
Dissertation Topic:	
Generalized differential operators and their application to boundary value problems	
Adviser (local): Prof. Batirkhan Turmetov	
Ph.D in Mathematics	
Al-Farabi Kazakh National University, Almaty	*2014–2017*
Dissertation Topic:	
Correctness conditions and construction of solution operators	
of elliptic boundary value problems in a ball	
Adviser (foreign): Prof. Mokhtar Kirane (France)	
Adviser (local): Prof. Batirkhan Turmetov	

ACADEMIC POSITIONS

Student	
Department of Mathematics,	
Ahmet Yasawi University, Turkistan	*2003–2007*
Master Student	
Department of Mathematics,	
Ahmet Yasawi University, Turkistan	*2007–2009*
Teacher	
Department of Mathematics,	
Ahmet Yasawi University, Turkistan	*2009–2014*

Junior Researcher
Institute of Mathematics and Mathematical Modeling, Almaty *2012–2014*
Ph.D Student
Department of Fundamental Mathematics,
Al-Farabi Kazakh National University, Almaty *2014–2017*
Researcher
Institute of Mathematics and Mathematical Modeling, Almaty *2014–2017*
Associate Professor
Department of Fundamental Mathematics,
Al-Farabi Kazakh National University, Almaty *2017–now*
Leading Researcher
Institute of Mathematics and Mathematical Modeling, Almaty *2018–now*
Postdoc Researcher
Department of Mathematics, Ghent University, Ghent, Belgium *2019–now*

LANGUAGES

Kazakh (native), Russian (fluent), Turkish (intermediate), English (elementary).

RESEARCH INTERESTS

- Fractional Calculus and Fractional Differential Equations

- Classical and non-classical elliptic boundary value problems

- Inverse and ill-posed problems

- Extreme principle of the fractional derivatives

- Initial and boundary value problems for the PDE with fractional derivatives

- Blow-up phenomena for parabolic, hyperbolic equations with or without fractional derivatives

- Differential equations with involution

- Spectral problems for the differential and integro-differential operators

PRIZES, AWARDS AND FELLOWSHIPS

Winner of the Republican competition of student scientific works	*2007*
Prize of the Rector of the Akhmet Yasawi University	2007
Prize of the Adygean International Academy of Sciences	*Russia, 2014*
Scientific scholarship of the Ministry of Education and Science of the Republic of Kazakhstan for talented young scientists	*2015–2016*
Prize of the rector of Al-Farabi Kazakh National University	*2016*
Prize of the Kazakhstan Mathematical Society	*2016*
Prize named after academician Taimanov	*2017*
Winner of the award "Leader of Science – 2017" (Web of Science)	*2017*

GRANTS

- Grant No.AP05131756 from the Ministry of Science and Education of the
  Republic of Kazakhstan (56 600 USD) *2018-2020*

- Scientific scholarship of the Ministry of Education and Science
  of the Republic of Kazakhstan for talented young scientists (4 500 USD) *2016*

SERVICE TO MATHEMATICAL COMMUNITY

Reviewed more than 50 papers from journals, such as

- Mathematical Methods in the Applied Sciences (Web of Science, Scopus)

- Complex Variables and Elliptic Equations (Web of Science, Scopus)

- Revista de la Real Academia de Ciencias Exactas, Físicas y Naturales. Serie A. Matemáticas (Web of Science, Scopus)

- Journal of Computational and Applied Mathematics (Web of Science, Scopus)

- Complex Analysis and Operator Theory (Web of Science, Scopus)

- Mediterranean Journal of Mathematics (Web of Science, Scopus)

- Results in Physics (Web of Science, Scopus)

- Computer Physics Communications (Web of Science, Scopus)

- Chinese Journal of Physics (Web of Science, Scopus)

- Ain Shams Engineering Journal (Web of Science, Scopus)

- Electronic Journal of Differential Equations (Web of Science, Scopus)

- Journal of Nonlinear Functional Analysis (Web of Science, Scopus)
  and others

Reviewer of Mathematical Reviews

Editorial Boards

- International Journal of Mathematics and Physics (2017-)

- Kazakh Mathematical Journal (2019-)

RESEARCH/SCIENTIFIC VISITS

2016 University of La Rochelle, La Rochelle, France (July-September, 3 month).

2017 Ahmet Yasawi University, Turkistan, Kazakhstan (February, 2 week).

2019 Sobolev Institute of Mathematics, Novosibirsk, Russia (March, 1 week).

2019 Ghent University, Ghent, Belgium (April, 1 month).

2019 Moscow State University, Moscow, Russia (September, 1 week).

CONFERENCES ORGANISED OR SCIENTIFIC COMMITTEE MEMBER

- International Conference Actual Problems of Mathematics and Mathematical Modeling (APMMM-2015), Almaty, Kazakhstan, member of organizing committee

- Third International Conference on Analysis and Applied Mathematics (ICAAM 2016), Almaty, Kazakhstan, 7–10 September 2016, member of organizing committee

INVITED AND PLENARY LECTURES AT INTERNATIONAL CONFERENCES

- Plenary lecture at the Scientific Conference "Nonclassical Equations of Mathematical Physics and Their Applications", Tashkent, Uzbekistan, 2014

- Invited lecture at the International School-Conference "Sobolev Readings", Novosibirsk, Russia, 2016

- Plenary lecture at the Traditional International April scientific conference in honor of the Science Day. Almaty, Kazakhstan, 2018

PHD STUDENTS

Meiirkhan BORIKHANOV
Period: 2017–2020
co-advisor: Mokhtar KIRANE (University of La Rochelle, France)
Dissertation Topic: Research of regular and singular solutions of fractional differential equations
Discipline: Mathematics
Nurbol KOSHKARBAYEV
Period: 2018-2021
co-advisor: Sergey GAVRILYUK (Aix-Marceille University, France)
Dissertation Topic: Analytical and numerical modeling of water waves
Discipline: Mathematical and Computer Modeling

PREPRINTS

- M. Ruzhansky, N. Tokmagambetov, B. T. Torebek, On a non-local problem for a multi-term fractional diffusion-wave equation. arXiv:1812.01336, 24 pages

- M. Kirane, B. T. Torebek, Maximum principle for the fractional sequential derivatives and its application to fractional partial differential equations. Preprint. 22 pages.

- B. Ahmad, A. Alsaedi, M. Kirane, B. T. Torebek, Blowing-up solutions of the time-fractional Burgers, Korteweg-de Vries, Benjamin-Bona-Mahony, Rosenau and Ostrovsky type equations. arXiv:1901.09246. 22 pages.

- A. Kassymov, M. Kirane, B. T. Torebek, Lyapunov, Hartman-Wintner and de La Vallee Poussin-type inequalities for fractional elliptic boundary value problems. Preprint. 12 pages.

- M. Borikhanov, B. T. Torebek, Local and blowing-up solutions for an integro-differential diffusion equation and system. arXiv:1910.06989. 27 pages.

ACCEPTED PAPERS

- M. Ruzhansky, N. Tokmagambetov, B. T. Torebek, Bitsadze-Samarskii type problem for the integro-differential diffusion-wave equation on the Heisenberg group. Integral Transforms and Special Functions, 2019, doi:10.1515/jiip-2019-0031 (Published online)

- M. Ruzhansky, N. Tokmagambetov, B. T. Torebek, Inverse source problems for positive operators. I: Hypoelliptic diffusion and subdiffusion equations. Journal of Inverse and Ill-Posed Problems, 2019, doi:10.1515/jiip-2019-0031 (Published online)

- A. Alsaedi, M. Kirane, B. T. Torebek, Blow-up of smooth solutions of the time-fractional Burgers equation. *Quaestiones Mathematicae*, (2019), doi: 10.2989/16073606.2018.1544596 (Published online)

- M. Borikhanov, B. T. Torebek, Duhamel principle for the time-fractional diffusion equation in unbounded domain, Eurasian Mathematical Journal, (to appear)

PUBLICATIONS

- S. S. Darogomir, B. T. Torebek, Some Hermite-Hadamard type inequalities in the class of hyperbolic p-convex functions. *Revista de la Real Academia de Ciencias Exactas, Físicas y Naturales. Serie A. Matemáticas*, 113:4 (2019), 3413–3423

- B. T. Torebek, Global Unsolvability of the Burgers Equation with Fractional Time Derivative. *Differential Equations*, 55:6 (2019), 867–870

- M. Kirane, B. T. Torebek, Extremum principle for the Hadamard derivatives and its application to nonlinear fractional partial differential equations. *Fractional Calculus and Applied Analysis*, 22:2 (2019), 358–378

- B. Ahmad, A. Alsaedi, M. Kirane, B. T. Torebek, Hermite-Hadamard, Hermite-Hadamard-Fejer, Dragomir-Agarwal and Pachpatte type inequalities for convex functions via new fractional integrals, *Journal of Computational and Applied Mathematics*, 353 (2019), 120–129

- N. Al-Salti, M. Kirane, B. T. Torebek, On a class of inverse problems for a heat equation with involution perturbation. *Hacettepe Journal of Mathematics and Statistics*, 48:3 (2019), 669–681

- T. Sh. Kalmenov, B. T. Torebek, A method for solving ill-posed nonlocal problem for the elliptic equation with data on the whole boundary, *Journal of Pseudo-Differential Operators and Applications*, 10:1 (2019), 177–185

- T. Sh. Kalmenov, M. A. Sadybekov, B. T. Torebek, A criterion of solvability of the elliptic Cauchy problem in a multi-dimensional cylindrical domain, *Complex Variables and Elliptic Equations*, 64:3 (2019), 398–408

- N. Tokmagambetov, B. T. Torebek, Anomalous Diffusion Phenomena with Conservation Law for the Fractional Kinetic Process, *Mathematical Methods in the Applied Sciences*, 41:17 (2018), 8161–8170

- M. Kirane, B. T. Torebek, A Lyapunov-type inequality for a fractional boundary value problem with Caputo-Fabrizio derivative, *Journal of Mathematical Inequalities*, 12:4 (2018), 1005–1012

- M. Borikhanov, M. Kirane, B. T. Torebek, Maximum principle and its application for the nonlinear time-fractional diffusion equations with Cauchy-Dirichlet conditions, *Applied Mathematics Letters*, 81 (2018), 14–20

- N. E. Tokmagambetov, B. T. Torebek, Symmetric differential operators of fractional order and their extensions, *Transactions of the Moscow Mathematical Society*, 2018 (2018), 177–185

- N. Tokmagambetov, B. T. Torebek, Green's formula for integro-differential operators, *Journal of Mathematical Analysis and Applications*, 468:1 (2018), 473–479

- R. Tapdigoglu, B. T. Torebek, On a nonlinear boundary-layer problem for the fractional Blasius type equation, *International Journal of Nonlinear Sciences and Numerical Simulation*, 19:5 (2018), 493–498

- B. T. Torebek, R. Tapdigoglu, Some inverse problems for the nonlocal heat equation with Caputo fractional derivative, *Mathematical Methods in the Applied Sciences*, 40:18 (2017), 6468–6479

- M. Kirane, B. Samet, B.T. Torebek, Determination of an unknown source term and the temperature distribution for the sub-diffusion equation at the initial and final data, *Electronic Journal of Differential Equations*, 2017:257 (2017), 1–13

- V. V. Karachik, B. T. Torebek, On the Dirichlet-Riquier Problem for Biharmonic Equations, *Mathematical Notes*, 102:1 (2017), 32–43

- M. A. Sadybekov, B. T. Torebek, B. Kh. Turmetov, Representation of the Green's function of the exterior Neumann problem for the Laplace operator, *Siberian Mathematical Journal*, 58:1 (2017), 153–158

- T. Sh. Kal'menov, B. T. Torebek, On an ill-posed problem for the Laplace operator with nonlocal boundary condition, *Eurasian Mathematical Journal*, 8:1 (2017), 50–57

- M. Kirane, B.T. Torebek, On a nonlocal problem for the Laplace equation in the unit ball with fractional boundary conditions, *Mathematical Methods in the Applied Sciences*, 39:5 (2016), 1121–1128

- N. Tokmagambetov, B. T. Torebek, Fractional Analogue of Sturm-Liouville Operator, *Documenta Mathematica*, 21 (2016) , 1503–1514

- M. A. Sadybekov, B. T. Torebek, B. Kh. Turmetov, Representation of Greens function of the Neumann problem for a multi-dimensional ball, *Complex Variables and Elliptic Equations*, 61:1 (2016), 104–123

- B. T. Torebek, B. Kh. Turmetov, Questions on solvability of exterior boundary value problems with fractional boundary conditions, *Electronic Journal of Qualitative Theory of Differential Equations*, 2016:25 (2016), 1–14

- B. Kh. Turmetov, B.T. Torebek, Modified Bavrin operators and their applications, *Differential Equations*, 51:2 (2015), 243–254

- B. T. Torebek, Modified RiemannLiouville integro-differential operators in the class of harmonic functions and their applications, *Ufa Math. Journal*, 7:3 (2015), 73-83

- M. A. Sadybekov, B. T. Torebek, B. Kh. Turmetov, On an explicit form of the Green function of the Robin problem for the Laplace operator in a circle, *Advances in Pure and Applied Mathematics*, 6:3 (2015), 163-172

- V.V. Karachik, M.A. Sadybekov, B.T. Torebek, Uniqueness of solutions to boundary-value problems for the biharmonic equation in a ball, *Electronic Journal of Differential Equations*, 2015:244 (2015), 1-9

- B. Kh. Turmetov, B.T. Torebek, On solvability of some boundary value problems for a fractional analogue of the Helmholtz equation, *New York Journal of Mathematics*, 20:2014 (2014), 1237–1251

- M. A. Sadybekov, B. T. Torebek, B. Kh. Turmetov, Solvability of Nonlocal Boundary-Value Problems for the Laplace Equation in the Ball, *Electronic Journal of Differential Equations*, 2014:157 (2014), 1-14

- B. T. Torebek, B. Kh. Turmetov, On solvability of a boundary value problem for the Poisson equation with the boundary operator of a fractional order, Boundary Value Problems, 2013:93 (2013), 1–18

- V. V. Karachik, B. K. Turmetov, B. T. Torebek, On some integro-differential operators in the class of harmonic functions and their applications, Siberian Advances in Mathematics, 22:2 (2012), 115–134