Nikoloz Katchakhidze

I. Scientific works

1. N. Kachakhidze, *On the number of irreducible representations of a symmetric group*. (Russian. English summary) Tr. Tbilis. Univ. 264, Mat. Mekh. Astron. 21, 31-41 (1986).
http://www.ams.org/mathscinet-getitem?mr=888775

2. N. Kachakhidze, *Parabolic and quadratic forms of type (-6,13,1) and (-6,17,1)* . (Russian) Tr. Tbilis. Univ. 278, Mat. Mekh. Astron. 24, 66-91 (1988).
http://www.ams.org/mathscinet-getitem?mr=1073983

3. N. Kachakhidze, *On the number of irreducible representations of a symmetric group*. II (Russian) Tr. Tbilis. Univ. 288, Mat. Mekh. Astron. 26, 46-59 (1989).
http://www.ams.org/mathscinet-getitem?mr=1157366

4. N. Kachakhidze, *On the representation of numbers by the direct sum of quadratic forms of type* $x^2_1+ x^2_2+x^2_3 +x^2_4+x_1x_2+x_1x_3+x_2x_4$. (Russian). Tr. Tbilis. Univ., Mat. Mekh. Astron. 27, 60-85 (1990).
http://www.ams.org/mathscinet-getitem?mr=1151180

5. N. Kachakhidze, *On the representation of integers as sum of quadratic forms of the form* $x\sb 1\sp 2 + x\sb 1x\sb 2 + x\sb 2\sp 2$. (Russian. English summary) Soobshch. Akad. Nauk Gruz. SSR 139, No.2, 249-252 (1990).
http://www.ams.org/mathscinet-getitem?mr=1125262

6. N. Kachakhidze, *On the representation of numbers by a direct sum of quadratic forms* $x\sp 2\sb 1 + x\sp 2\sb 2 + x\sp 2\sb 3 + x\sp 2\sb 4 +x\sb 1x\sb 2 +x\sb 1x\sb 3 + x\sb 2x\sb 4$. (English) Soobshch. Akad. Nauk Gruz. SSR 141, No.3, 469-472 (1991).
http://www.ams.org/mathscinet-getitem?mr=1221502

7. N. Kachakhidze, *On the representation of numbers by a direct sum of quadratic forms* $x_1^2+ x_1x_2 +2x_2^2$. (English) Soobshch. Akad. Nauk Gruz. 146, No.3, 474-477 (1992).
http://www.ams.org/mathscinet-getitem?mr=1247934

8. N. Kachakhidze, Erratum: "*On the number of irreducible representations of a symmetric group*. II". (Russian) Tr. Tbilis. Univ., Mat. Mekh. Astron. 29, 46-59 (1993).
http://www.ams.org/mathscinet-getitem?mr=1394908

9. N. Kachakhidze, *On the representation of numbers by the direct sum of quadratic forms* $x\sb 1\sp 2 + x\sb 2\sp 2 + x\sb 3\sp 2 + 2x\sb 4\sp 2 + x\sb 1x\sb 2 + x\sb 1x\sb 3 +x\sb 2x\sb 4$. (English) Soobshch. Akad. Nauk Gruz. 148, No.1, 13-16 (1993).
http://www.ams.org/mathscinet-getitem?mr=1654055

10. N. Kachakhidze, *On the representation of numbers by the direct sums of some binary and quaternary quadratic forms*. Candidate Thesis. Tbilisi University, 1993, 93pp.

11. N. Kachakhidze, *On the representation of numbers by the direct sums of some binary quadratic forms*. (English) Georgian Math. J. 5, No.1, 55-70 (1998) (**IF**).
https://doi.org/10.1515/GMJ.1998.55

12. N. Kachakhidze, *On the representation of numbers by the direct sums of some quaternary quadratic forms*. (English) Georgian Math. J. 8, No.1, 87-95 (2001) (**IF**).
https://doi.org/10.1515/GMJ.2001.87

13. N. Kachakhidze, *On the Fourier expansions of Eisenstein series of some types*. (English) Georgian Math. J. 13, No. 1, 55-78 (2006) (**IF**).
https://doi.org/10.1515/GMJ.2006.55

14. N. Kachakhidze, *On the basis of the space of cusp forms of the level 12*. Georgian Math. J. 13 (2006), No. 4, 723-736 (**IF**).
https://doi.org/10.1515/GMJ.2006.723

15. N. Kachakhidze, *On the Eisenstein series corresponding to quadratic forms of certain type*. Georgian Math. J. 13, No. 4, 737-740 (2006) (**IF**).
https://doi.org/10.1515/GMJ.2006.737

16. N. Kachakhidze, *On the basis of the space of cusp forms of the level 8*. International Conference on Modern Problems in Applied Mathematics Dedicated to the 90th Anniversary of the Iv. Javakhishvili Tbilisi State University & 40th Anniversary of the I. Vekua Institute of Applied Mathematics 7-9 October, 2008, Tbilisi. p.33.
http://www.viam.science.tsu.ge/viam40/tezisebis_krebuli.pdf

17. N. Kachakhidze, *On the representation of numbers by Some quadratic forms of level 12*. Georgian Math. J. 16, No. 1, 81-88 (2009) (**IF**).
https://doi.org/10.1515/GMJ.2009.81

18. N. Kachakhidze, *On a class of bases of the space of cusp forms of the level 8*. Georgian Math. J. 17, No. 2, 261-272 (2010) (**IF**).
https://doi.org/10.1515/gmj.2010.012

19. N. Kachakhidze, *Bases of some spaces of cusp forms and their application*. Georgian Int. J. Sci. Technol. 4, No. 1-2, 109-124 (2012).
https://mathscinet.ams.org/mathscinet/relay-station?mr=3088068

20. N. Kachakhidze, N. Khomeriki and Z. Tsiklauri, *On a Method of the Solution of Two-Dimensional Carrier Static Equation*. Georgian Int. J. Sci. Technol. 6, No. 1, 105-109 (2014).
https://mathscinet.ams.org/mathscinet/relay-station?mr=3136096

21. N. Kachakhidze, N. Khomeriki, J. Peradze and Z. Tsiklauri, *Chipot's method for a one-dimensional Kirchhoff static equation.* Numerical Algorithms 73, No. 4, 1091-1106 (2016).
https://doi.org/10.1007/s11075-016-0131-x (**IF**).

22. Yu. Bezhuashvili, N. Kachakhidze, *On the solvability of a plane dynamic problem of thermal*

diffusion (in Russian). Georgian Engineering News, 89(2019), №1, 21-24. https://dspace.nplg.gov.ge/bitstream/1234/375198/1/Saqartvelos_Sainjinro_Siakhleni_2019_N89.pdf

23. Yu. Bezhuashvili, N. Kachakhidze, *On the solvability of a three-dimensional dynamic problem of thermal diffusion* (in Russian). Georgian Engineering News, 90(2020), №1, 11-14. https://dspace.nplg.gov.ge/bitstream/1234/375201/1/Saqartvelos_Sainjinro_Siakhleni_2020_N1.PDF

24. N. Kachakhidze, J. Peradze, Z. Tsiklauri, *On realization of a numerical algorithm for a Timoshenko beam.* AMIM 25, No. 1, 11-22 (2020). http://www.viam.science.tsu.ge/Ami/2020_1/2020_1.htm

25. Yu. Bezhuashvili, N. Kachakhidze, *Approximate solutions of plane dynamic problems of thermal diffusion* (in Russian). Georgian Engineering News, 92(2021), №1, 9-13. https://dspace.nplg.gov.ge/bitstream/1234/355703/1/Saqartvelos_Sainjinro_Siakhleni_2021_N1.PDF

26. G. Berikelashvili, N. Kachakhidze, *Sixth order accuracy difference schemes for Helmholtz-type equation*, International Workshop on the Qualitative Theory of Differential Equations "QUALITDE – 2021", Tbilisi, Georgia, A. Razmadze Mathematical Institute of I. Javakhishvili Tbilisi State University. abstracts. 28-30. https://rmi.tsu.ge/eng/QUALITDE-2021/Abstracts_workshop_2021.pdf

27. N. Kachakhidze, J. Peradze, Z. Tsiklauri, *On One Method for Solving of a Static Beam Problem.* AMIM 26, No. 2, 3-9 (2021). http://www.viam.science.tsu.ge/Ami/2021_2/kach_AMIM%202021_2.pdf

28. N. Kachakhidze, J. Peradze, Z. Tsiklauri, *A Galerkin-Newton Algorithm for Solution of a Kirchhoff Type Static Equation*, Int. J. of Computational Methods, 19, No. 1, 2150057 (2022), https://doi.org/10.1142/S0219876221500572 (**IF**).

29. N. Kachakhidze, *On the Test Results of the Method of Solution of the Nonlinear Integro-Differential Equation of a Dynamic Beam.* AMIM 28, No. 2, (2023).

30. N. Kachakhidze, A. Papukashvili, G. Papukashvili, J. Peradze, M. Sharikadze, *On the Test Results of a Method of Solution of the Nonlinear Integro-Differential Equation of String Oscillation*. Bulettin of TICMI 27, No. 2, (2023).

II. Textbooks

1. Khomeriki N., Katchakhidze N., The elements of linear algebra and analitic geometry, (in Georgian) Publish house „Technical University“, Tbilisi, 2008, 233pp.

2. Katchakhidze N., Basics of Mathematical Logic (electronic lecture course, prepared due to

„Игошин В. И. Математическая логика и теория алгоритмов, М.: Издательский центр «Академия», 2008, 448с.“) (in Georgian), 2011, 201pp. (GTU Library CD 565).

3. Katchakhidze N., Problems in Mathematical Logic, (electronic textbook, prepared due to „Игошин В. И. Задачи и упражнения по Математической логике и теории алгоритмов, М.: Издательский центр «Академия», 2007, 304с.“) (in Georgian), 2011, 49pp. (GTU Library CD 565).

4. Mdzinarisvili L., Katchakhidze N., Ugulava D., Khomeriki N., Discrete mathematics (in Georgian), Publish house „Technical University“, Tbilisi, 2012.

5. Beridze L., Gogiberidze R., Katchakhidze N., Matlab for Students (Texrbook) (in Georgian), Publish house „Technical University“, Tbilisi, 2014.
http://gtu.ge/book/matlabi_L_beridze.pdf

6. Katchakhidze N., Basics of General Algebra (electronic lecture course) (in Georgian), 2017, 250pp. (GTU Library CD 3853).

7. Katchakhidze N., Number Theory (electronic lecture course) (in Georgian), 2017, 129pp. (GTU Library CD 3853).

8. Beridze L., Katchakhidze N., Khomeriki N., Laboratory works in Matlab (electronic textbook), Tbilisi, 2017.

9. Katchakhidze N., Application of computer methods in economics (electronic lecture course) (in Georgian), 2017, 176pp. (GTU Library CD 3853).

10. Katchakhidze N., Application of computer methods in economics (laboratory works, electronic) (in Georgian), 2017, 26pp. (GTU Library CD 3853).

11. Katchakhidze N., Mathematical Logic (electronic lecture course, prepared due to „Игошин В. И. Математическая логика и теория алгоритмов, М.: Издательский центр «Академия», 2008, 448с.“ ⴰⴷ „Игошин В. И. Задачи и упражнения по Математической логике и теории алгоритмов, М.: Издательский центр «Академия», 2007, 304с.“) (in Georgian), 2017, 329pp. (GTU Library CD 3853).

12. Mdzinarisvili L., Katchakhidze N., Ugulava D., Khomeriki N., Discrete mathematics (in Georgian), Second supplemented and Revised Edition, Publish house „Technical University“, Tbilisi, 2018, 247pp.
https://publishhouse.gtu.ge/ge/post/1051

13. Beridze L., Katchakhidze N., Khomeriki N., Laboratory works in Octave (electronic textbook) (in Georgian), Tbilisi, 2018, 161pp.
https://sites.google.com/a/gtu.ge/n-kachakhidze/home/matlabi

14. Katchakhidze N., Additional topics in discrete mathematics (electronic lecture course) (in Georgian), 2019, 201pp.

https://sites.google.com/a/gtu.ge/n-kachakhidze/home/diskretuli-matematika

15. Katchakhidze N., Number Theory (electronic lecture course) (in Georgian), 2019, 250pp. https://sites.google.com/a/gtu.ge/n-kachakhidze/home/ritskhvta-teoria

16. Katchakhidze N., Basics of General Algebra (electronic lecture course) (in Georgian), 2019, 247pp.
https://sites.google.com/a/gtu.ge/n-kachakhidze/home/algebra?authuser=0

17. Katchakhidze N., Discrete Mathematics (electronic lecture course, prepared due to „Kenneth H. Rosen, Discrete Mathematics and its Applications, Eighth Edition, McGraw-Hill Education, 2 Penn Plaza, New York, NY 10121, 2019“) (in Georgian), 2022, 458pp.
https://sites.google.com/a/gtu.ge/n-kachakhidze/home/diskretuli-matematika

III. Conferences

1. *On the representation of numbers by the direct sum of quadratic forms of type* $ x^2_1+ x^2_2+x^2_3 +x^2_4+x_1x_2+x_1x_3+x_2x_4 $. all-union school "Constructive Methods and Algorithms in Number Theory", Institute of Mathematics, BSSR, Minsk, 1989.

2. *About the bases of some spaces of cusp forms and its application*. The jubilee conference dedicated to the 75-th anniversary of Georgian Technical University. 1999.

3. *On the basis of the space of cusp forms of the level 8*. International Conference on Modern Problems in Applied Mathematics Dedicated to the 90th Anniversary of the Iv. Javakhishvili Tbilisi State University & 40th Anniversary of the I. Vekua Institute of Applied Mathematics 7-9 October, 2008, Tbilisi. p.33.

http://www.viam.science.tsu.ge/viam40/tezisebis_krebuli.pdf

4. *On the solution of an equation for the static string*. III International Conference of the Georgian Mathematical Union, Batumi, September 2-9, 2012**,** Book of Abstracts, p. 165 (with Nodar Khomeriki and Zviad Tsiklauri).

http://www.gmu.ge/Files/Old%20conference/III_Annual_Conference/confprogram/Conference2012.pdf

5. *On a Method of the Solution of Two-Dimensional Carrier Static Equation*. III Annual Meeting of the Georgian Mechanical Union, 19-21 December, 2012, Tbilisi, Book of Abstracts, p. 12 (with Nodar Khomeriki and Zviad Tsiklauri).

http://www.viam.science.tsu.ge/others/gnctam/GeoMech3/abs.pdf

6. *Chipot's Method for Kirchhoff's one-dimensional static equation*, XXIX Enlarged Sessions of the Seminar of VIAM**,** I.Vekua Institute of Applied Mathematics of Iv. Javakhishvili Tbilisi State University, Tbilisi, 22-24 April, 2015 (with Nodar Khomeriki, J. Peradze and Zviad Tsiklauri).

http://www.viam.science.tsu.ge/others/GS-2015(geo).pdf

7. *About One Method of Solution of Elliptic Kirchhoff Type Equation,* VIII Annual International Conference of the Georgian Mathematical Union, Batumi, September 4-8, 2017**,** Book of Abstracts, p. 114 (with Zviad Tsiklauri).

http://gmu.ge/Batumi2017/

8. *Chipot's method of solution of elliptic Kirchhoff type equation,* IX International Conference of the Georgian Mathematical Union, Batumi, September 3-8, 2018**,** Book of Abstracts**,** p. 142 (with Zviad Tsiklauri).

http://gmu.ge/Batumi2018/

9. *On an iteration method of solution of a non-homogeneous system for a dynamic beam*, X International Conference of the Georgian Mathematical Union, Batumi, September 2-6, 2019**,** Book of Abstracts, p. 116 (with Zviad Tsiklauri).

http://gmu.ge/Batumi2019/index.php/book-of-abstracts/

10. *On realization of a numerical algorithm for a Timoshenko nonlinear beam system*, XXXIV International Enlarged Sessions of the Seminar of Ilia Vekua Institute of Applied Mathematics (VIAM**)** of Ivane Javakhishvili Tbilisi State University (TSU), Tbilisi, 22-24 April, 2020, Book of Abstracts, p. 75 (with J. Peradze and Zviad Tsiklauri).

abstracts.pdf (tsu.ge)

11. *On one method for solving of a static beam problem*, XXXV International Enlarged Sessions of the Seminar of Ilia Vekua Institute of Applied Mathematics (VIAM**)** of Ivane Javakhishvili Tbilisi State University (TSU), Tbilisi, 21-23 April, 2021 (with J. Peradze and Zviad Tsiklauri).

http://www.viam.science.tsu.ge/enlarged/2021/programa_geo.pdf

12. *On variational-iterative method for solving of a static beam problem*, 9-th Online International Conference on Applied Analysis and Mathematical Modeling, ICAAMM21, 11-13 June, 2021, Istanbul-Turkey (with J. Peradze and Zviad Tsiklauri).

http://ntmsci.com/Conferences/ICAAMM2021/PaperPublications

13. *Sixth order accuracy difference schemes for Helmholtz-type equation.* International Workshop on the Qualitative Theory of Differential Equations "QUALITDE – 2021" Dedicated to the 130th birthday anniversary of Academician N. Muskhelishvili, December 18 - 20, 2021, Tbilisi, Georgia, Book of Abstracts, p. 28 (with G. Berikelashvili).

https://rmi.tsu.ge/eng/QUALITDE-2021/Abstracts_workshop_2021.pdf

14. *On the use of one numerical method for solving a nonlinear beam equation*. XIII International Conference of the Georgian Mathematical Union, Batumi, Georgia, September 4-9, 2023, Book of Abstracts, p. 140.

Conference_GMU_2023_7.10_last.pdf (gtu.ge)

15. *On the test results of the method of solution of the nonlinear integro-differential equation*

of a dynamic beam. XIV Annual International Meeting of the Georgian Mechanical Union, Poti, Georgia, August 29-31, 2023.