



Irakli Gamkrelidze

Position

Chief Scientist at Aleksandre Janelidze Institute of Geology and Head of Department of Tectonics and Regional Geology.

Scientific/academic degree, title

Doctor of Geological and Mineralogical sciences (1961). Dissertation topic: "Mechanism of formation of tectonic structures and some general problems of tectogenesis"

Academician of the National Academy of Science of Georgia.

Contact information

Phone: 222 32 94 (home), 599 24 61 50

Email: gamkrelidze77@gmail.com

Education

1956 – Polytechnical Institute of Georgia, Engineer-geologist.

Employment history

1958-1961 – Geological Institute of the Academy of Science, Graduate student;

1961-1966 – Geological Institute of the Academy of Science, Junior Researcher;

1966-1975 – Geological Institute of the Academy of Science, Senior Researcher;

1969-1974 – Polytechnic Institute of Georgia, Senior teacher;

1974-1976 – Polytechnic Institute of Georgia, Docent;

1975- present – head of the Department at Alexandre Janelidze Institute of Geology;

1976-1996 – Polytechnic Institute of Georgia, Professor;

1988 - present – Department of Earth Sciences of the National Academy of Sciences of Georgia, Academician-Secretary.

Research interests

Structural geology and geotectonic, mechanism of tectonic structure formation, morphologic-kinematical features and genesis of tectonic nappes, geodynamic evolution of the Mediterranean mobile belt and seismotectonics, horizontal tectonic layering of the lithosphere, geodynamic conditions of magmatic and metamorphism processes.

Work Abroad

Delivering a lecture course at foreign higher educational institutions:

19-22/11 and 22/11-3/12, 1994, Cambridge University; 22-24/11,1994. Edinburgh University.

Long-term mission to research institutions:

1967-1968 – German Federal Republic, Hannover, Munich and Klaustal-Zellerfeld high schools.

Other:

1968-2012 – Lectures at the universities and scientific institutions of Munich, Warsaw, Bratislava, Sophia, Bucharest, Prague, Vienna, Paris, Rome, Fribourg, Moscow and other cities.

Total number of publications - 232, including 12 monographs.

Publications (*works of the last 10 years and best publications according to author*)

1. **I. Gamkrelidze**, N. Bolashvili, V., Neidze (2022). Geological structure of Georgia and geodynamic evolution of the Caucasus. In: The physical geography of Georgia, Springer.
2. J. Mosar, J. Mauvilly, K. Koiava, **I. Gamkrelidze**, N. Enna, V. Lavrishev, V. Kalberguenova (2022). Tectonics in the Greater Caucasus (Georgia – Russia): From an intracontinental rifted basin to a doubly verging fold-and-thrust belt. Marine and Petroleum Geology 140:105630. <https://doi.org/10.1016/j.marpetgeo.2022.105630>
3. **I. Gamkrelidze**, A. Okrostsvaridze, K. Koiava, F. Maisadze (2020). Geotourism potential of Georgia, the Caucasus: History, Culture, Geology, Geotourist Routes and Geoparks). Springer, 81p. <https://doi.org/10.1007/978-3-030-62966-3>
4. **I. Gamkrelidze**, D. Shengelia, G. Chichinadze, Y.H. Lee., A. Okrostsvaridze, K. Vardanashvili. (2020). U–Pb LA–ICP–MS dating of zoned zircons from the Greater Caucasus pre-Alpine crystalline basement: Evidence for Cadomian to Late Variscan evolution. Geologica Carpatica, 2020, 71, 3, 249-263 pp. <https://doi.org/10.31577/GeolCarp.71.3.4>
5. **Gamkrelidze I.** (2020). Once More on the Character and Velocity of Newest (Neotectonic) and Recent Movements of the Earth's Crust on the Territory of Georgia. Proceedings of A. Janelidze Institute of Geology. New series. Vol. 132, pp. 13-25.
6. **I. Gamkrelidze**, D. Shengelia, G. Chichinadze, T. Tsutsunava, G. Beridze, I. Javakhishvili (2019). Map of metamorphic facies of the Loki crystalline massif (scale 1:50,000). Proceedings of the Al. Janelidze Institute of Geology, New Series, v. 131. 89 p.
7. **I. Gamkrelidze**, D. Shengelia, G. Chichinadze, T. Tsutsunava, G. Beridze, I. Javakhishvili (2019). 1:50 000 scale digital geological map of the Loki crystalline massif. Proceedings of the Al. Janelidze Institute of Geology, New Series, v. 131. 88 p.
8. **I. Gamkrelidze**, D. Shengelia, G. Chichinadze, T. Tsutsunava, G. Beridze, I. Javakhishvili. (2019). Geology of the Loki Crystalline Massif (1:50 000 Scale Digital Geological Map Explanatory Note). Proceed. of the Al. Janelidze Institute of Geology, New Series, v. 131. 87 p.
9. **I. Gamkrelidze**, A. Okrostsvaridze, F. Maisadze, L. Basheleisvili, I. Skhirtladze, G. Boichenko (2019). Main features of geological structure and geotourism potential of Georgia, the Caucasus. ISSN 2333-2581 Modern Environmental Science and Engineering, V. 5, N5, Star Publishing Company. USA Academics, pp. 422-442

10. **I. Gamkrelidze, D. Shengelia, G. Chichinadze, T. Tsutsunava, G. Beridze, T. Tsamalashvili, K. Tedliashvili, I. Javakhishvili** (2018) Petrology, Geochemistry and Formation Conditions of Pre-Alpine Metabasites of the Loki Crystalline Massif (the Caucasus). *Bull. Geor. Acad. Sci.* v. 12, #4, pp. 78-86.
11. **I. Gamkrelidze** (2018). Tectonic map of Georgia and explanatory note (M 1:100 000). In National Atlas of Georgia, Steiner-Verlag, Stuttgart.
12. **I. Gamkrelidze** (2018). Geological map of Georgia and explanatory note (M 1:100 000). In National Atlas of Georgia, Steiner-Verlag, Stuttgart.
13. **I. Gamkrelidze** (2016). Geological structure of Georgia and geodynamic evolution of the Caucasus. *Proceedings of IGCP Forth Plenary Conference*, pp. 69-76.
14. **I. Gamkrelidze, F. Maisadze** (2016). Formation conditions of Upper Eocene olistostromes and retro-overthrust at the southern slope of the Greater Caucasus. *Geotectonics* #6, pp. 698-607.
15. **I. Gamkrelidze, M. Gamkrelidze, M. Loladze, T. Tsamalashvili** (2015). New tectonic map of Georgia (Explanatory note). *Bull. of Georg. National Acad. of Sci.* Vol.9 (1), pp.112 – 116
16. **I. Gamkrelidze, D. Shengelia, T. Tsutsunava, O. Dudauri, G. Chichinadze** (2014). Precambrian regional metamorphism and magmatism of Georgia and geodynamics of the Caucasus// *Mineralogical Journal (Ukraine)*, 36. #3, pp 98-113.
17. **I. Gamkrelidze, M. Pruidze, M. Gamkrelidze, M. Loladze** (2013). Tectonic map of Georgia (1: 500 000). Publisher: “Meridiani”
18. **I. Gamkrelidze, D. Shengelia, T. Tsutsunava** (2012). Pre-Alpine geodynamics multi-stage regional metamorphism and granitoid magmatism of the Caucasus. *Proceedings of the International congress: “Natural cataclysm and global problems of the modern civilization“*. London, pp. 208-217.
19. **I. P. Gamkrelidze, D. M. Shengelia** (2005). Precambrian-Paleozoic regional metamorphism, granitoid magmatism and geodynamics of the Caucasus. Moscow, Nauchny mir. 458 p. (in Russian, English summary).
20. **Caputo, M., Gamkrelidze, I., Malvezzi, V., Sgrigna, V., Shengelia, G., Zilpimiani, D.** (2000) Geostructural basis and geophysical investigations for the seismic hazard assessment and prediction in the Caucasus. *Il nuovo cimento*, v. 23 (2). pp. 191-216. ISSN 1826-9885.
21. **I. Gamkrelidze** (1997). Terranes of the Caucasus and adjacent areas. *Bull. Acad. Sci. Georgia*, v.155. N3, pp. 75-81.
22. **I. Gamkrelidze, T. Giorgobiani, S. Kuloshvili, G. Lobjanidze, G. Shengelia** (1998). Active deep faults map and the catalogue for the territory of Georgia. *Bull. Geor. Acad. Sci.* 157 (1), 80-85.
23. **I. Gamkrelidze, D. Shengelia, G. Chichinadze** (1996). Macera Nappe in crystalline core of the Greater Caucasus and its geological significance. *Bull. Geor. Acad. Sci.*, v. 154, N1, pp. 84-89.
24. **I.P. Gamkrelidze** (1991). Tectonic nappes and horizontal layering of the Earth's crust in the Mediterranean belt (Carpathians, Balkanides and Caucasus). *Tectonophysics*, v. 196 (3-4) pp. 385-396.
25. **I.P. Gamkrelidze** (1986). Geodynamic evolution of the Caucasus and adjacent areas in Alpine time. *Tectonophysics*, v. 127 (3-4), pp. 261-267.
26. **I.P. Gamkrelidze, A.L. Книппер** (1985). History of formation of Mediterranean belt formation in Mesozoic and Cenozoic. *Geotectonics*, 1985, N 3, pp. 91-102.
27. **I.P. Gamkrelidze, G.D. Dumbadze, M.A. Kekeliya, I.I. Khmaladze, O.D. Khutsishvili** (1981). Ophiolites of the Dzirula Massif and problem of Paleotethys in the Caucasus. *Geotectonics*, N5, pp. 23-33.
28. **P.D. Gamkrelidze, I.P. Gamkrelidze** (1977). Tectonic covers of the southern slope of the Greater Caucasus. *Proceedings of the Geol. Inst.*, v. 57, 82 p. (in Russian).
29. **I.P. Gamkrelidze** (1976). The mechanism of formation of tectonic structures and some general

- problems of tectogenesis. Proceedings of the Geol. Inst. New ser. v. 52, 226 p. (in Russian).
30. **I. Gamkrelidze** (1972). Planetary jointing of dislocated rocks and connected with it phenomena. Geotectonics, N6, pp. 45-54.

Citation index

Google Scholar – 1204, h-i – 16; Web of Science – 311, h-i – 9; Scopus – 118, h-i – 4; Researchgate – 1265, h-i – 19, reads: 29 200.

Participation in scientific events (the last 10 years)

1. Upper Miocene Megavolcano in the Lesser Caucasus, Georgia-Turkish border: Geological and Isotope evidences. A. Okrostsvaridze, **I. Gamkrelidze**, G. Boichenko, I. Skhirtladze. Geochemical society and the European Association of Geochemistry Goldschmidt, 2020, Abstract.
2. Digital Geological Map of the Loki Crystalline Massif (The Caucasus) and Its Multi-Informative Explanatory Note. **I. Gamkrelidze**, D. Shengelia, G. Chichinadze, T. Tsitsunava, G. Beridze, T. Tsamalashvili, K. Tedliashvili, I. Javakhishvili. Waset, ICPGGS 2019: International Conference on Physical Geology and Geological Sciences. The Netherlands, Amsterdam. Abstract book, p. 438.
3. The Greater Caucasus Fold-and-Thrust Belt: Paleotectonic inheritance vs. Cenozoic mountain building. Mosar J., Mauvilly J., Enna N., **Gamkrelidze I.**, Kangarli T., Koiava K., Aliyev F., Lavrishev V. AAPG GTW: Exploration and Production in the Black Sea, Caucasus, and Caspian Region. Batumi, Georgia, 2019 September 19-20. Abstracts, pp. 18.
4. Potential of Georgia for Joining UNESCO Global Geopark Network. Okrostsvaridze, Avtandil, **Gamkrelidze Irakli**, Gagnidze Nona, Sukhishvili Lasha. UNESCO Geopark 8th Conference 2018, Adameo, Italy.
5. The Greater Caucasus: a new tectonic map! Mosar J., Mauvilly J., Enna N., **Gamkrelidze I.**, Kangarli T., Koiava K., Rashidov T. Lavrishev V. EGU General Assembly 2018, TS7.8 - Geodynamic evolution of the Greater Caucasus Orogen. Vienna, Austria, 2018 April 8-13. Abstracts, pp. 7934.
6. Alpine tectonics of the Greater Caucasus: a review. Mosar J., Mauvilly J., Enna N., **Gamkrelidze I.**, Kangarli T., Aliyev F., Gerasimov V., Koiava K., Kalbergenova V., Kvaliashvili L., Rashidov T. Lavrishev V. EGU General Assembly 2018, TS7.8 - Geodynamic evolution of the Greater Caucasus Orogen. Vienna, Austria, 2018, April 8-13. Abstracts, pp. 4963.
7. Tectonics of the Greater Caucasus: from rifting to collision. Mosar J., Mauvilly J., Enna N., **Gamkrelidze I.**, Kangarli T., Aliyev F., Gerasimov V., Koiava K., Kalbergenova V., Kvaliashvili L., Rashidov T. Lavrishev V. EGU General Assembly 2018, TS7.8 - Geodynamic evolution of the Greater Caucasus Orogen. Vienna, Austria, 2018, April 8-13. Abstracts, pp. 5012.
8. Tectonics in the Greater Caucasus (Georgia – Russia): From an intracontinental rifted basin to a doubly verging fold-and-thrust belt. Mauvilly J., Mosar J., Koiava K., **Gamkrelidze I.**, Enna N., Lavrishev V., Kalberguenova, V. EGU General Assembly 2018, TS7.8 - Geodynamic evolution of the Greater Caucasus Orogen. Vienna, Austria, 2018 April 8-13. Abstracts, pp. 4920.
9. Main features of geological structure and a new tectonic map of Georgia: a review. **Gamkrelidze I.**, Koiava K., Mosar J., Kvaliashvili L., Mauvilly J. EGU General Assembly 2018, TS7.8 - Geodynamic evolution of the Greater Caucasus Orogen. Vienna, Austria, 2018, April 8-13. Abstracts, pp. 5040.

10. Pre-Alpine Allochthonous Metabasites of the Loki Crystalline Massif, Georgia: Geological Setting, Composition and Formation Conditions. **I. Gamkrelidze**, D.Shengelia, G.Chichinadze, T.Tsitsunava, G.Beridze, I.Javakhishvili. Waset, ICMRSA 2018: International Conference on Metamorphic Rocks and Structural Analysis. France, Paris. Abstract book, p. 124.
11. Epidosites of the Loki Crystalline Massif, the Caucasus: Geological Setting, Mineralogy, Petrogeochemistry and Genesis. D.Shengelia, G.Chichinadze, **I. Gamkrelidze**, T.Tsitsunava, G.Beridze, I.Javakhishvili. Waset, ICMRSA 2018: International Conference on Metamorphic Rocks and Structural Analysis. France, Paris. Abstract book, p. 123.
12. U-Pb Dating of zonal zircons from the crystalline rocks of the Gondarai complex of the Greater Caucasian Main Range zone (Greater Caucasian terrane). **I. Gamkrelidze**, D.Shengelia, G.Chichinadze, A.Okrostsvaridze, Yan-His Lee, G.Beridze. Mineralogical society of Georgia, 4th International Scientific-Practical Conference on Up-to-date Problems of Geology. Tbilisi, Georgia. 2018. Abstract book, pp. 32-34.
13. Petrology, Geochemistry and Formation Conditions of Metaophiolites of the Loki Crystalline Massif (the Caucasus). **I. Gamkrelidze**, D.Shengelia, G.Chichinadze, T.Tsitsunava, G.Beridze, T.Tsamalashvili, K.Tedliashvili. WASET, CGPE 2017: 19th International Conference on Geosciences and Petroleum Engineering. Spain, Madrid. Abstract book, p. 81.
14. New U-Pb isotope-geochronological data on the Buulgen metamorphic complex and on the associated white pre-Alpine magmatites of the Greater Caucasian Main Range zone. **I. Gamkrelidze**, D.Shengelia, G.Chichinadze, A.Okrostsvaridze, Yan-His Lee, T.Tsitsunava, G.Beridze. Mineralogical society of Georgia, 3th International Scientific-Practical Conference on Up-to-date Problems of geology. Tbilisi, Georgia. 2017. Abstract book, pp. 43-46.
15. Tectonics in the Greater Caucasus: a structural cross section in an inverted rifted basin setting. **I. Gamkrelidze**, J. Mauvilly, K. Koiava and J. Mosar. 14th Swiss International Geoscience Meeting, Geneva. 2016. Abstracts. pp.61-68.
16. The Greater Caucasus: Inversion of a Supra-Subduction Extended Continental Rift. Mosar J., Aliyev F., Enna N., **Gamkrelidze I.**, Kangarli T., Mauvilly J., Koiava K. AAPG: Petroleum Systems of Alpine- Mediterranean Fold Belts and Basins. Bucharest, Romania, 2016 May 19-20. Abstracts, pp. 39-40.
17. Tectonics in the Georgian Greater Caucasus: a structural cross-section in an inverted rifted basin setting. Mauvilly J., Koiava K., **Gamkrelidze I.**, Mosar J. The 14th Swiss Geoscience Meeting. Geneva, Switzerland, 2016 November 18-19. Abstracts, pp. 33-34.
18. Tectonics in the Greater Caucasus: a N-S section along the Georgian Military Road – Georgia. Mauvilly J., Koiava K., **Gamkrelidze I.**, Mosar J. The 13th Swiss Geoscience Meeting. Basel, Switzerland, 2015 November 20-21. Abstracts, pp. 42
19. Geological Structure of Georgia and Geodynamic Evolution of the Caucasus. **Gamkrelidze I.**, Koiava K., Mosar J. The 13th Swiss Geoscience Meeting. Basel, Switzerland, 2015 November 20-21. Abstracts, pp. 29-30
20. Precambrian regional metamorphism and magmatism of Georgia and geodynamics of the Caucasus. **I. Gamkrelidze**, D.Shengelia, O.Dudauri, T.Tsitsunava, G.Chichinadze. International conference “Early Precambrian of the Eurasian continent, Kyiv, Ukraine, 2014.
21. Stages and conditions of formation of Georgian granitoids. Dudauri O.Z., **Gamkrelidze I.P.**, Shengelia D.M., Tsitsunava T.N., Togonidze M.G., Chichinadze G.L. Scientific conference “Granitoids: Conditions of formation and ore content”. Kyiv, Ukraine, 2013. p. 53-54.
22. Main Stage of geodynamic Evolution of the Caucasian Segment of the Alpine-Mediterranean Belt. **I. Gamkrelidze**, D.Shengelia, F.Maisadze, T.Tsitsunava, G.Chichinadze. European Geosciences Union General Assembly. Viena, Austria. 2013.

23. Pre-Alpine multi-stage regional metamorphism and granitoid magmatism of the Caucasus. **I. Gamkrelidze**, D. Shengelia, T. Tsutsunava. The International Congress „Natural Cataclysms and Global Problems of the Modern Civilization”, proceedings. 2012. Istanbul, Turkey. pp. 195-204.

Grant projects

1. 2002-2003 - Geodynamic Evolution of the Territory of Georgia and the Mechanism of Formation of Tectonic Structures. Georgian Academy of Sciences, Head of the project.
2. 2002-2005 – Petrology and geodynamics of pre-Alpine complexes in the Caucasian segment of the Mediterranean fold belt. INTAS, Main performer.
3. 2004-2005 – Pre-Alpine and Alpine Geodynamics, Tectonic Structure and Seismotectonics of the Territory of Georgia. Georgian Academy of Sciences, Head of the project.
4. 2006-2009 – (GNSF/st 06/5-037) Detailed geological-structural study of the Caucasus and its bordering tectonic units along the Georgia Military Road, National Science Foundation of Georgia, Head of the project.
5. 2007-2011 – Open network of scientific centers for mitigation risk of natural hazards in the Southern Caucasus and Central Asia. ISTC, Main performer.
6. 2010-2012 – Caucasus Tectonics. SCOPES- IZ73Z0_127933, Head of the Georgian side
7. 2010-2012 – Creation of thermodynamic model of Caucasus lithosphere and Caspian and Black Sea basins on the basis of mathematical model. ISTC G-1532, Main performer.
8. 2012 – Tectonics of Central Greater Caucasus. DARIUS, Main performer.
9. 2013 – Tectonics of the Lesser Caucasus. DARIUS, Head of the Georgian side.
10. 2014-2016 – English-Georgian Terminological Dictionary of Geology. Shota Rustaveli National Science Foundation of Georgia, Main performer.
11. 2014-2018 – Greater Caucasus Tectonic and Paleotectonic Evolution. SCOPES, Head of the Georgian side.
12. 1:50 000-scale Digital Geological Map of the Loki Crystalline Massif. Shota Rustaveli National Science Foundation, AR-135/789, Head of the project.
13. 2018-2023 – A cross border study of petrogenesis, geodynamic setting and gold mineralization potential of the Late Cenozoic magmatism on Erzurum-Kars (Turkey) and Samtskhe-Javakheti (Georgia) Plateaus. Joint project of Georgian Shota Rustaveli National Sciences Foundation and Technological Research Council of Turkey. № 04/02, Main performer.
14. 2022-2025 – Research of the important geological heritage of Georgia (Caucasus) in order to include it in the UNESCO global geoparks network; FR-21-10905. Shota Rustaveli National Science Foundation of Georgia. Main performer.

Additional information

2018 – National Award of Georgia;
2008 – Alexandre Tvalchrelidze Award;
1998 – Order of Honor of Georgia;
1988 – Honorary certificate of the Slovak Academy of Sciences;
1986 – Alexandre Janelidze Award;
1984 – Honorary Diploma of XXVII International Geological Congress;
1976 – Honorary Diploma of the Exhibition of Public Economy Achievements of the Georgian SSR;
Since 1976 – member of the International Planetological Association (University of California, USA);

1976-1995 – Member of the International Geological Mapping Commission (Academy of Science of the USSR);

1986-1999 – Member of the World Geological Map Commission, Paris;

1976 – 1990 – Member of the USSR Interdepartmental Tectonic Committee.