Maxim Gavrilenko, PhD

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Brief Summary

My research focuses on the chemistry and evolution of Earth materials, combining mineral chemistry, advanced microanalytical techniques, and experimental approaches to investigate geological processes across a range of natural systems. My work spans igneous petrology, magmatic volatiles, and volcanic processes, while increasingly expanding toward critical mineral resources, resource recovery, and sustainable energy applications.

Education

2016 **Ph.D.** in Earth and Planetary Sciences, Geological Sciences – Rutgers, the State University of New Jersey, USA
1997 **Specialist Diploma** (equivalent to a Master's degree) in Geology and Geochemistry – Lomonosov Moscow State University, Moscow, Russia

Professional Experience

2026- Research Scientist, Center for Rare Earths and Critical Minerals, National High Magnetic Field Laboratory
2023-26 Postdoctoral Associate, Dept. of Earth and Atmospheric Sciences, Cornell University
2020-23 Senior Researcher, Vernadsky Institute of Geochemistry and Analytical Chemistry, Russia
2020-23 Jeune Chercheur (Postdoc), Institut des Sciences de la Terre (ISTerre), Université Grenoble Alpes, France
2019-20 Senior Research Scientist, Center for Hydrocarbon Recovery, Skolkovo Institute of Science and Technology
2018-19 Postdoctoral Associate, Dept. of Earth and Planetary Sciences, Washington University in St. Louis
2017-18 Postdoctoral Associate, Dept. of Geological Sciences and Engineering, University of Nevada, Reno
2016-17 Postdoctoral Associate, Dept. of Earth and Planetary Sciences, Washington University in St. Louis
2011-16 Research and Teaching Assistant, Department of Earth and Planetary Sciences, Rutgers University
2010 Research Trainee, ARC Centre of Excellence in Ore Deposits, University of Tasmania, Australia (three months)
2008 Research Trainee, Geophysical Institute, University of Alaska Fairbanks (three months)
2006 Research Trainee, Geophysical Institute, University of Alaska Fairbanks (three months)
2005-16 Research Assistant, Institute of Volcanology and Seismology, Kamchatka, Russia
2005 Geologist, Avers-1 LLC, Russia
2003-05 Wholesale buyer of computer components for a retail store. Store "Computer World", Russia
2003 Geologist, Geokhimpoiski LLC, Russia
2001-03 IT lead expert, CNET Networks, Inc.
1998-01 Graduate student, Department of Geochemistry, Faculty of Geology, Lomonosov Moscow State University
1995-98 Retail book forwarder, Labirint LLC, Russia
1992-97 Undergrad. student, Department of Geochemistry, Faculty of Geology, Lomonosov Moscow State University

Analytical Instrumentation Experience

♦ 15+ years of electron microprobe experience (both JEOL and Cameca) and SEM (JEOL & TESCAN)
♦ Laser ablation ICP-MS (Agilent 7500ce + UP-213) and solution ICP-MS (Agilent 7700)
♦ Ion microprobe (Cameca IMS 7f-Geo, IMS 1280, volatiles in nominally anhydrous minerals and melt inclusions)
♦ Bulk sample compositional analyses by XRF, ICP-MS, LA-ICP-MS
♦ Experimental petrology facilities experience: piston cylinder apparatus, 1-atm furnaces, LINKAM stage
♦ Raman spectroscopy (WITec Alpha300R Confocal Raman Microscope)

Numerical Simulation Experience

♦ Petrological Modeling: MELTS, PETROLOG, Arc Basalt Simulator, PRIMELT, COMAGMAT
♦ EPMA simulation: PENEPMA, CalcZAF
♦ Basic, Fortran, Matlab, Python programming

TEACHING EXPERIENCE

- Graduate Teaching Fellow (2015-2016). Rutgers University.
  Mineralogy (Fall 2015) – laboratory and field instructor
  Introduction to Geophysics (Spring 2016) – field and data analysis instructor
- Graduate mentor (2005-08). Jill Shipman (faculty mentor: John Eichelberger), PhD Thesis Research, University of Alaska Fairbanks.
- Undergraduate Mentor (2013). Jennifer Geoghegan (faculty mentor: Michael J. Carr), Undergraduate Senior Thesis Research, Rutgers University.
- Graduate Mentor (2018-19). Andrea Goltz (faculty mentor: Michael Krawczynski), PhD Thesis Research, Washington University in St. Louis.
- Graduate Mentor (2018-19). Ellyn Huggins (faculty mentor: Philipp Ruprecht), PhD Thesis Research, University of Nevada, Reno.
- Undergraduate Mentor (2019). Ethan Kuehl (faculty mentor: Michael Krawczynski), Undergraduate Senior Thesis Research, Washington University in St. Louis.
- Graduate Mentor (2021). Aleksandr Chugunov (faculty mentor: Alexander Sobolev), PhD Thesis Research, Université Grenoble Alpes.
- Graduate Mentor (2019-22). Stepan Krasheninnikov, Daria Tobelko (faculty mentor: Maxim Portnyagin), PhD Thesis Research, Vernadsky Institute.
- Graduate Mentor (2024-25). Kyle Dayton (faculty mentor: Esteban Gazel), PhD Thesis Research, Cornell University.
- Undergraduate Mentor (2025). Natalia Pszeniczny (faculty mentor: Esteban Gazel), Undergraduate Senior Thesis Research, Cornell University.
- Graduate Mentor (2024-25). Valentina Villanueva Morales, Jonathan Bixler (faculty mentor: Esteban Gazel), PhD Thesis Research, Cornell University.

FIELD EXPERIENCE (> 80 WEEKS)

- California ophiolites sampling (one week, 2025).
- California ophiolites sampling (two weeks, 2024).
- Chile: Villarrica and Llaima volcanoes (two weeks, 2023).
- Cascades: Mt. Shasta (one week, 2019).
- Kamchatka, Russia: Shiveluch and Klyuchevskoy volcanoes (two weeks, 2017)
- Kamchatka, Russia: Shiveluch volcano (two weeks, 2016)
- Sicily, Italy: Mt. Etna (one week, 2010)
- Kamchatka, Russia: Gorely and Mutnovsky volcanoes (six weeks, 2008-2010)
- Kamchatka, Russia: Bezymyanny, Gorely, and Mutnovsky volcanoes (three weeks, 2007)
- Cascades: Mt. St. Helens (one week, 2006).
- Kamchatka, Russia: Bezymyanny volcano (two weeks, 2006)
- Kamchatka, Russia: Bezymyanny and Tolbachik volcanoes (two weeks, 2005)
- Eastern Siberia, Russia (two months, 2005).
- Kamchatka, Russia: Klyuchevskoy volcano (two weeks, 2003)
- Kamchatka, Russia: Bezymyanny, Gorely, and Mutnovsky volcanoes (five weeks, 2000)
- Kamchatka, Russia: Klyuchevskoy, Karymsky, Gorely, and Mutnovsky volcanoes (twelve weeks, 1998-99)
- Kamchatka, Russia: Bezymyanny and Klyuchevskoy volcanoes (three weeks, 1996)
- Kamchatka, Russia: Gorely and Mutnovsky volcanoes (two weeks, 1995)
- Caucasian Mountains, Russia: MSU geochemical methods of deposit exploration field course (four weeks, 1995)
- Ural Mountains, Russia: MSU Mineralogy-petrology field course (four weeks, 1994)
- Crimea Peninsula: MSU geological mapping field course (six weeks, 1994)
- Crimea Peninsula: MSU geological mapping field course (four weeks, 1993)
- Kunashir Island (Kuriles), Russia: Mendeleev volcano (three weeks, 1989)
- Kamchatka, Russia: Maly Semyachik volcano (three weeks, 1989)
- Kamchatka, Russia: Sredinny Range (three months, 1987)

ACADEMIC AWARDS, SCHOLARSHIPS, AND FELLOWSHIPS

♦ 2015: Richard K. Olsson Award – for a Ph.D.-student of the year; RUTGERS University (Dept. Earth & Planetary Sciences)
♦ 2014: Excellence Fellowship for dissertation work (2014-2015); RUTGERS University (School of Arts and Sciences)
♦ 2010: FULBRIGHT Program – The International Fulbright Science & Technology Award; 3-year fellowship (2011-2014)
♦ 1996: International Soros Science Education Program (ISSEP) Award (Russia)

FUNDED RESEARCH PROJECTS

♦ Far Eastern Branch of Russian Academy of Sciences – research grants (2015, 2012-2009, 2007, 2006).
♦ Russian Foundation for Basic Research – "Research Support Program for Young Scientists" (2001, 2002); conference travel grants (2008, 2009).

ACADEMIC ADVISORS (IN CHRONOLOGICAL ORDER)

Esteban Gazel (Cornell University, USA – *Postdoctoral advisor*)
Alexander Sobolev (Université Grenoble Alpes, France – *Postdoctoral advisor*)
Mikhail Spasennykh (Skoltech Center for Petroleum Science and Engineering – *Scientific advisor*)
Philipp Ruprecht (University of Nevada, Reno, USA – *Postdoctoral advisor*)
Michael Krawczynski (Washington University in St. Louis, USA – *Postdoctoral advisor*)
Claude Herzberg (Rutgers University, USA – *Ph.D. advisor*)
Michael Carr (Rutgers University, USA – *Ph.D. committee member*)
Vadim Levin (Rutgers University/University of Memphis, USA – *Research mentor*)
Alexey Ozerov (Institute of Volcanology and Seismology, Russia – *Research and personal mentor*)
Alexey Yaroshevsky (Moscow State University, Russia – *Diploma advisor*)

COMMUNITY SERVICES

♦ Reviewer for such peer-reviewed scientific journals as "*Earth and Planetary Science Letters*", "*Bulletin of Volcanology*", "*Chemical Geology*", "*Lithos*", "*Geochimica et Cosmochimica Acta*", "*Journal of Petrology*", "*American Mineralogist*", "*Contributions to Mineralogy and Petrology*" – **38 verified peer reviews** (via Publons/Web of Science).
♦ Proposal reviewer for the U.S. National Science Foundation (Petrology & Geochemistry).
♦ Proposal reviewer for the Fulbright Scholarship program (Geology).
♦ Session convener "The role of volatiles in volcanic systems of the Earth's lithosphere", IAVCEI Scientific Assembly, 2017.
♦ Field Work Organizer (2008-2010). Field works on Gorely and Mutnovsky volcanoes, Kamchatka (Russia).

LANGUAGES

Russian (native speaker); English (fluent); French (basic in speaking and reading).

PROFESSIONAL AFFILIATIONS

The American Geophysical Union (AGU)
The Mineralogical Society of America (MSA)
International Association of Volcanology and Chemistry of the Earth's Interior (IAVCEI)

PEER-REVIEWED PUBLICATIONS

h-index: 8 Citations: 496 (via Google Scholar); 6 first-authored publications with an average citation = 56 per paper

12) Huggins, E.G., Gazel, E., **Gavrilenko, M.**, Dayton, K., Bixler, J., Towbin, H., Plank, T. High precision water quantification by Raman spectroscopy: Applications to volcanic and extraterrestrial samples. ***In review*** *at Chemical Geology.*

11) Huggins, E.G., Ruprecht, P., Loewen, M., **Gavrilenko, M.**, Bodnar, R., Harlaux, M. Pre-eruptive magma storage depth for the 2018 eruption at Veniaminof volcano, Alaska. ***In review*** *at Geochemistry, Geophysics, Geosystems.*

10) **Gavrilenko, M.**, Gazel, E., Dayton, K., Barth, A., Plank, T., Huggins, E.G., Houghton, B. (2026) Deep Origin and Shallow Launch for the Etna 122 B.C. Mafic Plinian Eruption. *Geochemistry, Geophysics, Geosystems,* 27, e2026GC012924. DOI: 10.1029/2026GC012924 (**0**)

9) **Gavrilenko, M.**, Ruprecht, P., Krawczynski, M. (2025) The magmatic H_2O pathway of ascending arc magmas recorded by Ca-in-olivine hygrometry: advantages, complications, and perspectives. *Contributions to Mineralogy and Petrology,* 180(9):54. DOI: 10.1007/s00410-025-02246-0 (**2**)

8) Llovet, X., **Gavrilenko, M.**, Batanova, V.G., Sobolev, A.V. (2023) Element depletion due to missing boundary fluorescence in electron probe microanalysis: The case of Ni in olivine. *Microscopy and Microanalysis*. V.29, no.5, p. 1595–1609. DOI: 10.1093/micmic/ozad100 (**7**)

7) **Gavrilenko, M.**, Batanova, V.G., Llovet, X., Krasheninnikov, S., Koshlyakova, A.N., Sobolev, A.V. (2023) Secondary fluorescence effect quantification of EPMA analyses of olivine grains embedded in basaltic glass. *Chemical Geology.* v. 621: 121328. DOI: 10.1016/j.chemgeo.2023.121328 (***21***)

6) Goltz, A., Krawczynski, M.J., **Gavrilenko, M.**, Gorbach, N.V., Ruprecht, P. (2020) Evidence for superhydrous primitive arc magmas from mafic enclaves at Shiveluch volcano, Kamchatka. *Contributions to Mineralogy and Petrology,* 175(12):115. DOI: 10.1007/s00410-020-01746-5 (***60***)

5) **Gavrilenko, M.**, Krawczynski, M., Ruprecht, P., Li, W., Catalano, J.G. (2019) The quench control of water estimates in convergent margin magmas. *American Mineralogist*, v. 104, no. 7, p. 936-948. DOI: 10.2138/am-2019-6735 (***53***)

4) **Gavrilenko, M.**, Herzberg, C.T., Vidito, C., Carr, M.J., Tenner, T., Ozerov, A. (2016) A Calcium-in-Olivine Geohygrometer and its Application to Subduction Zone Magmatism. *Journal of Petrology*, v.57, no. 9, p. 1811-1832. DOI: 10.1093/petrology/egw062 (***189***)

3) **Gavrilenko, M.**, Ozerov, A., Kyle, P.R., Carr, M.J., Nikulin, A., Vidito, C., Danyushevsky, L. (2016) Abrupt transition from fractional crystallization to magma mixing at Gorely volcano (Kamchatka) after caldera collapse. *Bulletin of Volcanology*, v. 78, no. 7, p. 1-28. DOI: 10.1007/s00445-016-1038-z (***70***)

2) Levin, V., Droznina, S., **Gavrilenko, M.**, Carr, M.J., Senyukov, S. (2014) Seismically active subcrustal magma source of the Klyuchevskoy volcano in Kamchatka, Russia. *Geology*, v. 42, no. 11, p. 983-986. DOI: 10.1130/g35972.1 (***34***)

1) Tolstykh, M.L., Naumov, V.B., **Gavrilenko, M.G.**, Ozerov, A.Yu., Kononkova, N.N. (2012) Chemical composition, volatile components, and trace elements in the melts of the Gorely volcanic center, southern Kamchatka: Evidence from inclusions in minerals. *Geochemistry International*, vol. 50, No 6, p. 522-550. DOI: 10.1134/S0016702912060079 (***34***)

(ITALICS = CITATIONS BASED ON GOOGLE SCHOLAR)

CONFERENCE PRESENTATIONS

Abstracts orally presented: (*=presenter)

***Gavrilenko, M.**, Batanova, V., Llovet, X., Krasheninnikov, S., Koshlyakova, A., Sobolev, A. (2022) Secondary fluorescence effect quantification of EPMA analyses of olivine grains embedded in basaltic glass. *Goldschmidt Conference 2022 (Honolulu, USA)*. DOI: 10.46427/gold2022.10155

***Gavrilenko, M.**, Batanova, V., Krasheninnikov, S., Sobolev, A. (2021) EPMA analyses of olivine near the boundary with a basaltic glass – the secondary fluorescence effect quantification. *Goldschmidt Conference 2021 (Lyon, FRANCE)*. DOI: 10.7185/gold2021.5335

***Gavrilenko, M.**, Ruprecht, P., Krawczynski, M., Catalano, J. (2019) The Limits of Glassy Melt Inclusion as Magmatic H_2O Recorders for Super-Hydrous Mafic Melts. *AGU Fall Meeting (San Francisco, USA), Abstract V11A-02*.

*Ruprecht, P., Reyes, P., Winslow, H., Walowski, K., **Gavrilenko, M.**, Krawczynski, M., Plank, T. (2019) Crystal exit interviews – the role of olivine in recording magma assembly and magmatic processes. *AGU Fall Meeting (San Francisco, USA), Abstract V43A-05*.

*Krawczynski, M., Goltz, A., **Gavrilenko, M.** (2019) Evidence for eruption of a superhydrous magma from Shiveluch volcano, Kamchatka. *GSA Annual Meeting (Phoenix, USA)*. DOI: 10.1130/abs/2019AM-340579

*__Gavrilenko, M.__, Ruprecht, P., Krawczynski, M. (2018) Magmatic H_2O variations in primitive magmas of Klyuchevskoy volcano through the lens of the Ca-in-olivine. *Goldschmidt Conference 2018 (Boston, USA)*.

*Goltz A., Krawczynski, M., **Gavrilenko, M.**, Gorbach, N., Ruprecht, P. (2018) Petrology and Geochemistry of Mafic Enclaves from Shiveluch Volcano, Kamchatka. *Goldschmidt Conference 2018 (Boston, USA)*.

*__Gavrilenko, M.__, Krawczynski, M., Ruprecht, P., Li, W. (2017) Are melt inclusions a robust tool for understanding H_2O content of deep hydrous arc magmas? *IAVCEI Scientific Assembly (Portland, USA)*.

*Krawczynski, M., **Gavrilenko, M.**, Ruprecht, P. (2017) Possible existence of deep super-hydrous arc magmas: implications from high-Mg amphibole. *IAVCEI Scientific Assembly (Portland, USA)*.

*Herzberg, C., **Gavrilenko, M.**, Vidito, C. (2015) Provenance of Olivine in Volcanic Rocks. *Goldschmidt Conference 2015 (Prague, Czech Republic)*.

*Ponomareva, V., Portnyagin, M., Kuvikas, O., Pevzner, M., Bazanova, L., Bigg, G., **Gavrilenko, M.**, Kyle, P., Christel van den Bogaard (2009) Tephrochronological Research in the KALMAR Project and its Implications to the Temporal and Compositional Evolution of Volcanism in Kamchatka. *First Bilateral workshop on Russian-German cooperation on Kurile-Kamchatka and the Aleutian Marginal Sea-Island Arc Systems*.

*__Gavrilenko, M.__, Ozerov, A., Kyle, P., Eichelberger, J. (2008) Gorely volcano (Southern Kamchatka) – petrochemical characteristics of magmatic evolutional series. *IAVCEI General Assembly (Reykjavik, Iceland)*.

Poster presented:

*__Gavrilenko, M.__, Ruprecht, P., Krawczynski, M. (2018) Tracking pre-eruptive magmatic H_2O evolution from the mantle to the surface at Klyuchevskoy volcano (Kamchatka arc). *AGU Fall Meet. Suppl., Abstract T31H-0396*.

*__Gavrilenko, M.__, Krawczynski, M., Ruprecht, P. (2017) The quench control of water estimates in convergent margin magmas. *AGU Fall Meet. Suppl., Abstract V33G-0590*.

*__Gavrilenko, M.__, Herzberg, C., Vidito, C., Carr, M., Tenner, T., Ozerov, A. (2016) A Calcium in Olivine Geohygrometer and its Application to Subduction Zone Magmatism. *AGU Fall Meet. Suppl., Abstract V31A-3060*.

*__Gavrilenko, M.__, Ozerov A., Kyle P., Carr M.J., Nikulin, A. (2015) Magma mixing and degassing processes in the magma chamber of Gorely volcano (Kamchatka): evidence from whole-rock and olivine chemistry. *AGU Fall Meet. Suppl., Abstract V43B-3120*.

*__Gavrilenko, M.__, Ozerov, A., Kyle, P., Carr, M.J. (2015) The roles of fractional crystallization and mixing on magma evolution at Gorely volcano (Kamchatka). *GeoPRISMS/TEI SCD Meeting (Los Angeles)*.

*__Gavrilenko, M.__, Ozerov, A. (2014) The Sub-Crustal Magma Chamber Existence and Magma Ascent Rate for Klyuchevskoy Volcano (Kamchatka): Constrains from Ni Zonation in Olivine Phenocrysts. *AGU Fall Meet. Suppl., Abstract V51A-4726*.

*__Gavrilenko, M.__ (2014) Volcanoes – a window to the Earth interior: Identification of Source Lithology. *Fulbright International Science & Technology Capstone (Washington, DC)*.

*__Gavrilenko, M.__, Carr, M., Herzberg, C., Ozerov, A. (2013) Pyroxenite is a possible cause of enriched magmas in island arc settings: Gorely volcano (Kamchatka). *AGU Fall Meet. Suppl., Abstract V31A-2666*.

*Dunham, B., Levin, V., Droznina, S., **Gavrilenko, M.** (2013) Impact of subduction geometry on high-productivity arc volcanism of the Klyuchevskoy volcanic group (Kamchatka, Russia). *AGU Fall Meet. Suppl., Abstract V21C-2748*.

*__Gavrilenko, M.__, Herzberg, C., Portnyagin, M., Ozerov, A. (2012) Identification of Source Lithology at South Segment of Kamchatka Subduction Zone. *AGU Fall Meet. Suppl., Abstract V31A-2761*.

*__Gavrilenko, M.__, Ozerov, A. (2011) Mineralogical and Geochemical Characteristics of High-Magnesian Basalts of Gorely volcano (Southern Kamchatka): Implication for Mantle Source. *AGU Fall Meet. Suppl., Abstract V43C-2584*.

*Shipman, J., Izbekov, P., **Gavrilenko, M.** (2011) Petrologic Insights into Magma System Response to Edifice Collapse. *AGU Fall Meet. Suppl., Abstract V21E-2540*.

*__Gavrilenko, M.G.__, Ozerov, A.Yu. (2010) Geochemical similarities between the Pre-caldera and Modern evolutionary series of eruptive products from Gorely volcano. *AGU Fall Meet. Suppl., Abstract V21B-2333*.

*Shipman, J.S., Turner, S.J., **Gavrilenko, M.**, Izbekov, P.E. (2010) Rapid Modal Analysis and Whole-Rock Geochemistry of the 1956-Present Eruptive Products of Bezymianny Volcano, Kamchatka, Russia. *AGU Fall Meet. Suppl., Abstract V21B-2332*.

*__Gavrilenko, M.G.__, Ozerov, A.Yu. (2010) The chemical composition of the accessory minerals inclusions in the olivine and pyroxene phenocrysts, as an indicator of the calc-alkaline magmas evolution conditions at the Gorely volcano (Kamchatka). *GSA Annual Meeting (Denver)*.

*__Gavrilenko, M.__, Ozerov, A. (2009) High-Magnesia Basalts – Source of Calc-Alkaline Series of Gorely Volcano (Kamchatka). *6th Biennial Workshop on Japan-Kamchatka-Alaska Subduction Processes (Fairbanks)*.

*__Gavrilenko, M.G.__, Ozerov, A.Yu. (2009) Evolution of the magmatic melts at Gorely volcano (Kamchatka). *GSA Annual Meeting (Portland)*.

*__Gavrilenko, M.G.__, Kyle, P.R. (2007) Mineralogical and Geochemical Characteristics of Magmatic Series Evolution at Gorely Volcano (Southern Kamchatka). *AGU Fall Meet. Suppl., Abstract V32C-07*.

*Shipman, J.S., Pallister, J., Gorbach, N., Belousova, M., **Gavrilenko, M.**, Krivomazova, O., Izbekov, P.E., Eichelberger, J.C. (2007) Bezymianny and Shiveluch Volcanoes, Kamchatka, Russia and Mount St. Helens, WA: Response of Volcanoes That Have Experienced Edifice Collapse. *AGU Fall Meet. Suppl., Abstract V31B-0488*.

*__Gavrilenko, M.G.__, Ozerov, A.Yu., Kyle, P.R., Eichelberger, J.C. (2006) Petrological And Geochemical Characteristics Of Magmatic Melts At Gorely Volcano, Kamchatka, Russia. *AGU Fall Meet. Suppl., Abstract V11A-0558*.

*__Gavrilenko, M.__, Ozerov, A.Yu., Kyle, P.R., Meshalkin, V. (2004) The Magmatic Melts evolution of Gorely volcano (Kamchatka). 32-nd International Geological Congress (Florence, Italy).

Gavrilenko, G.M., **Gavrilenko, M.G.** (2001) Geochemical precursors of the 2000 eruption of Mutnovsky Volcano, Kamchatka",10th International Symposium on Water-Rock Interaction (Villasimius, Italy).

*__Gavrilenko, M.__, Khvorov, D. (2000) Genesis conditions of arc high-alumina basalts. *IAVCEI General Assembly (Bali, Indonesia)*.

*Gavrilenko G.M., Osipenko A.B., Egorov Yu.O., **Gavrilenko M.G.** (1996) Lake-phantom in the crater of the Gorely volcano, South Kamchatka. – Current research on Volcanic Lakes; Newsletters of IAVCEI Commission on Volcanic Lakes, №9, March 1996.