



## **GEOTHERMAL VOLCANOLOGY WORKSHOP 2023**

**ALL-RUSSIAN SCIENTIFIC CONFERENCE WITH  
INTERNATIONAL PARTICIPATION  
"GEOTHERMAL VOLCANOLOGY,  
HYDROGEOLOGY, OIL AND GAS GEOLOGY".**



### **PRELIMINARY CONFERENCE PROGRAM**

**THE TIME IS FOR THE UTC+12 TIME ZONE (P-KAMCHATSKY)  
MONDAY 04 SEPTEMBER 2023**

**14:00 -18:00 REGISTRATION IVS FEB RAS, ROOM 215**

**FOR REGISTRATION DURING 04 - 06 SEPTEMBER**

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**18:00 – 20:00 Icebreaker Reception**

**IVS room 116**

**Tuesday 05 September 2023**

**Conference hall IVS**

**Chair: Alexey Kiryukhin (IVS FEB RAS)**

**09:00 – 09:40 OPENING GREETINGS & REMARKS**

**Deputy chairman of the Government of the Kamchatsky krai Sergey Anatolyevich Mironov**

**09:40 SESSION 01: MAGMO-HYDROTHERMAL SYSTEMS, MAGMATOGENIC AND  
EPITHERMAL DEPOSITS**

**[0101] 9:40 – 10:00 Puzhetskoy-Kambalno-Koshelevsky Geothermal Area: Structure, Evolution, Main Hydrothermal Systems and Geothermal Deposits. Sergei N. Rychagov (IViS FEB RAS)**

**[0102] 10:00 – 10:20 Model of Secondary Concentration of Lithium-Bearing Brines in Boiling Fluid Systems of Magmatogenic-Sedimentary Basins of the Hydromineral Province of the Siberian Platform. Andrey G. Vakhromeev (Earth's Crust Institute, Irkutsk, SB RAS)**

**[0103] 10:20 – 10:40 Magmatic activity of Mutnovsky volcano in 2023 and earthquake M=6.7 from 03.04.2023. Andrey U. Polyakov (IViS FEB RAS)**

**[0104] 10:40 – 11:00 Thermohydrodynamic modeling of the gas-hydrothermal system in the cone of the Avachinsky volcano. Evgeniya V. Chernykh (IViS FEB RAS)**

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**11:00 Coffee-break (room 116)**

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## **11:30 SESSION 02: HYDROTHERMAL SYSTEMS**

**[0201] 11:30 – 11:50 New Data on the Structure of Thermoanomalies of the Pauzhetsko-Kambal-Koshelevsky Area on the Basis of Magnetometric Survey. Ivan A. Nuzhdaev (IViS FEB RAS)**

**[0202] 11:50 – 12:10 The Structure of the South Kambalny Group of Thermal Fields of the Kambalny Volcanic Ridge According to Geoelectrical Data (Southern Kamchatka). Sergey O. Feofilaktov (IViS FEB RAS)**

**[0203] 12:10 – 12:30 Conceptual Model Of Thermal Power Supply Of A Low-Temperature Geothermal Field Without Additional Heat Sources. Nikita B. Zhuravlev (IViS FEB RAS)**

**[0204] 12:30 – 12:50 Thermohydrodynamic Modeling Of The Koryak-Ketkinsky Hydrothermal System. Pavel O. Voronin (IViS FEB RAS)**

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**13:00 LUNCH**

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### **14:00 SESSION 03: ACTIVE FAULTS AND SEISMICITY IN GEOFLUIDIC SYSTEMS**

[0301] 14:00 – 14:20 Regional Active Faults Of Kamchatka And The Magmatic System Of The Northern Group Of Volcanoes. Michail V. Lemzikov (IViS FEB RAS)

[0302] 14:20 – 14:40 Conditions For The Formation Of Fracturing In Volcanogenic-Sedimentary Strata Of Iturup. Dmitriy S. Myagkov (Schmidt Institute of Physics of the Earth RAS, Moscow)

[0303] 14:40 – 15:00 The Concept Of Confidence In Monitoring Fluid-Geodynamic Processes. Alexey V. Solomatin (IViS FEB RAS)

[0304] 15:00 – 15:20 Features Of Deep Fluid Dynamics Of Gas Production Areas In Eastern Siberia And The Far East: Catastrophic Absorption And Rapid Occurrences During Drilling, Fracturing Corridors And Kimberlite Pipes In Gas Fields. Sergei B. Korotkov (Gazprom Invest LLC, Saint Petersburg)

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15:20 Coffee-break (room 116)

### **16:00 SESSION 04: MAGMATIC SYSTEMS OF ACTIVE VOLCANOES**

[0401] 16:00 – 16:20 Active Regional Seismogenic Faults Are Potential Sources Of Water Supply For Primary Magmatic Hearth Of Active Volcanoes In Kamchatka. Alexey V. Kiryukhin (IViS FEB RAS)

[0402] 16:20 – 16:40 Geomechanical Analysis Of Regional Seismogenic Faults Of Kamchatka. Polina D. Soldatova (IViS FEB RAS)

[0403] 16:40 – 17:00 How Much Magma Reservoir Pressure is Required to Build a Mountain? John C Eichelberger (University of Alaska Fairbanks)

**Wednesday 06 September 2023**  
**Conference hall IVS**

**09:00 SESSION 05: MODELING OF HEAT AND MASS TRANSFER, GEOMECHANICAL PROCESSES AND CHEMICAL INTERACTION IN GEOFLUIDIC SYSTEMS**

**[0501] 9:00 – 9:20 Multichannel System Of Precision Monitoring Of Rock Temperature At The North Caucasus Geophysical Observatory Of The IFZ RAS. Valentin V. Gravirov (Schmidt institute of physics of the earth RAS, Moscow)**

**[0502] 9:20 – 9:40 Structural – Chemical State of Arsenic in Natural and Synthetic Minerals. Sofiia E. Obysova (Institute of Geology of Ore Deposits, Moscow)**

**[0503] 9:40 – 10:00 The State Of Re In The Molybdenum And Rheniite Of The Kudryavy Volcano (Iturup Island) Studied By X-Ray Absorption Spectroscopy. Kamilla A. Privalova (IGEM RAS, Moscow)**

**[0504] 10:00 – 10:20 Features of Highly Mineralized Brines of Oil and Gas Fields. ElenaV. Zelinskaya (Irkutsk National Research Technical University, Irkutsk)**

**[0505] 10:20 – 10:40 Changes in the composition and properties of andesibasalts subjected to sulfuric acid leaching (South Kambal Central Thermal Field, Kamchatka). Mariya A. Nikulina (Lomonosov Moscow State University, Faculty of Geology, Moscow)**

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**10:40 Coffee-break (room 116)**

**11:20 SESSION 06: CONDITIONS FOR THE FORMATION OF PRODUCTIVE GEOTHERMAL RESERVOIRS AND HYDROCARBON DEPOSITS WITH HARD-TO-RECOVER RESERVES.**

[0601] 11:20 – 11:40 The Potential Of Geothermal Technologies Of The Tomsk Region. Stanislav A. Yankovsky (Tomsk Polytechnic University, Tomsk)

[0602] 11:40 – 12:00 Temperature Profile in Geothermal Fields. Timofei Baranov (Vniineft (Zarubezhneft))

[0603] 12:00 – 12:20 Promising Areas Of Exploration, Development And Use Of Associated Hydromineral Raw Materials In Gas Production In Eastern Siberia And The Far East. Igor A. Tikhanovich (Gazprom Invest LLC, Saint Petersburg)

[0604] 12:20 – 12:40 Implementation of the Geological Exploration Program for the Purpose of Prospecting and Assessing Geothermal Deposits at Zarubezhneft's License Areas on the Kamchatka Peninsula. Eduard Khmarin (ZN Geotherm (Zarubezhneft))

[0605] 12:40 – 13:00 New Information on the Formation of Unconventional Reservoirs of Ancient Volcanogenic Areas of Northern Khakassia. Marina I. Shaminova (National Research Tomsk Polytechnic University, Tomsk)

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**13:00 – 14.00 LUNCH**

**14:00 SESSION 07: THE MECHANISM OF FUNCTIONING OF GEYSERS AND CATASTROPHIC PROCESSES IN HYDROTHERMAL SYSTEMS. Chair Anastasia Sergeeva**

[0701] 14:00 – 14:20 The Salt Composition Of The Waters Penetrating Into The Geyser Reservoir, Taking Into Account The Water-Rock Interaction. Anastasia V. Sergeeva (IViS FEB RAS)

[0702] 14:20 – 14:40 Two-Dimensional Simulation Of The Penetration Of Cold Meteor Waters Into A Two-Phase Reservoir. Olga O. Usacheva (IViS FEB RAS)

[0703] 14:40 – 15:00 Peculiarities of Formation and Development Mechanisms of Landslides in Geothermal Areas. Julia V. Frolova (Faculty of Geology, Lomonosov Moscow State University, Moscow)

[0704] 15:00 – 15:20 The Effect of Temperature on the Active Porosity of Hydrothermal Clay Soils  
Mikhail S. Chernov (Lomonosov Moscow State University, Faculty of Geology, Moscow)

[0705] 15:20 – 15:40 The History Of Geothermal Research In Kamchatka In The Publications Of The Rare Fund Of The Library Of The Ivis FEB RAS. From S. P. Krasheninnikov To P. T. Novograbenov. Marina V. Kuznetsova (IViS FEB RAS)

**16:00 - 17:00 - Excursion to the Museum of the Institute of Volcanology and Seismology of the Far East Branch of the Russian Academy of Sciences**

## **REPORTS SUBMITTED FOR PUBLICATION ONLY**

**[0105] Correlation between the morphometric parameters of the relief, which characterize the fracturing of the upper part of the lithosphere, with volcanism and hydrothermal-magmatic systems of the Malko-Petropavlovsk zone of transverse dislocations. Alexey Agibalov (IViS FEB RAS)**

**[0205] Strontium isotopic signature in thermal waters of Kyrgyzstan. Larisa A. Lyamina (Geological institute RAS)**

**[0206] Hydrogeochemistry of a Thermal Spring in the Permafrost Zone. Vladimir Makarov (Permafrost Institute SB RAS, Yakutsk)**

**[0207] Dissolved organic matter in carbon dioxide mineral waters of Western Transbaikalia. Alexey M. Plyusnin (Federal State Budgetary Institution of Science N.L. Dobretsov Geological Institute of the Siberian Branch of the Russian Academy of Sciences, Ulan-Ude)**

**[0208] Geochemical model of formation and transformation of low-mineralized thermal waters of the Kyrgyz Tien Shan. Dzhumagul Z. Kendirbaeva Dzhumagul (Institute of Seismology of the National Academy of Sciences of the Kyrgyz Republic, Bishkek)**

**[0209] Geochemistry Mineral Waters of the Northeastern Flank Baikal Rift Zone. Leonid V. Zamana (Institute of Natural Resources, Ecology and Cryology, Chita)**



**[0305] Features of seismicity as a reflection of the geological structure and hydrothermal activity on the northeastern flank of the Baikal rift system. Natalia A.Radziminovich (Institute of the Earth's crust SB RAS, Irkutsk)**

**[0306] Geodynamics and Geothermics of the Caucasus – Anatolian Region and Turkey-Syria Earthquakes 2023. Valentina Svalova (Sergeev Institute of Environmental Geoscience RAS)**

**[0307] Some Geomechanical Aspects of the Loading of the Fluid-Magmatic Feeding Systems of Volcanoes Interior by the Weight of Their Buildings. Ivan F. Delemen (IViS FEB RAS)**

**[0404] Research Of Petrothermal Resources Of The North Caucasus For Use In Heat And Power Supply(Areas Of Volcanoes Elbrus And Kazbek). Alibek B. Alkhasov (Institute of Geothermal and Renewable Energy Problems is a branch of the Joint Institute of High Temperatures of the Russian Academy of Sciences. Makhachkala)**

**[0405] Forecast Of Volcanic Eruptions And Earthquakes. Nina G. Alexeeva (State Scientific Center of the Russian Federation Trinity Institute of Innovative and Thermonuclear Research (TRINITY Research Center of the Russian Federation), Moscow)**

**[0406] A New Geological Map Of The Volcanoes Natib And Marivelos Of The Luzon Branch Of The Philippine Island Arc (Bataan Nuclear Power Plant Area). Tatiana Yu. Tveritina (Lomonosov Moscow State University, Moscow)**

**[0506] Conditions of the formation of the Karternoe ore occurrence, the Polar Urals. Julia Ivanova (Institute of Geology of Ore Deposits, Petrography, Mineralogy and Geochemistry of the Russian Academy of Sciences, Moscow)**

**[0606] Formation of Deposits Hydrocarbon in the Regions of Development of Fold-Thrust Belts. Tatiana I. Larionova (OOO PA “Gold Inikchan”)**

**[0706] Recent Local Phreatic Explosions at the Thermal Fields of the Uzon Caldera as a Sign of Zones with Micro-Tectonically Reduced Caprocks in the Hydrothermal System. Gennadiy Karpov (IViS FEB RAS)**

**Thursday 07 September 2023**

**07:00 - 21:00: Field Tour #1: Gorely Volcano and Verkhne-Paratunsky springs**

**Organizer: Pavel Voronin**

**Overnight stop at the Vilyuchinsky thermal springs (Alney base)**

**[http://www.kscnet.ru/ivs/conferences/GeothermVolc2023/1-](http://www.kscnet.ru/ivs/conferences/GeothermVolc2023/1-Circular%20Geothermal%20Volcanology%202023%20RU.pdf)**

**[Circular%20Geothermal%20Volcanology%202023%20RU.pdf](http://www.kscnet.ru/ivs/conferences/GeothermVolc2023/1-Circular%20Geothermal%20Volcanology%202023%20RU.pdf)**

**Friday, September 08, 2023**

**07:00 - 21:00: Field Tour #2: Mutnovsky Volcano and Mutnovsky geothermal field**

**Organizer: Pavel Voronin**

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**Saturday, September 09, 2023**

**08: 00-20: 00: Field Trip #3: VALLEY OF GEYSERS**

**Organizer: Vityaz-Travel**

**See Valley of Geysers**

**[http://www.kscnet.ru/ivs/conferences/GeothermVolc2023/1-](http://www.kscnet.ru/ivs/conferences/GeothermVolc2023/1-Circular%20Geothermal%20Volcanology%202023%20RU.pdf)**

**[Circular%20Geothermal%20Volcanology%202023%20RU.pdf](http://www.kscnet.ru/ivs/conferences/GeothermVolc2023/1-Circular%20Geothermal%20Volcanology%202023%20RU.pdf)**

**Saturday, September 09 2023**

**09:00 – 19:00 : Field Tour #2: Dyke field on the southern slope of the Koryak volcano**

**Organizers: Evgenia Chernykh, Pavel Voronin, Nikita Zhuravlev**

**See: Dyke field on the southern slope of the Koryak volcano**

**<http://www.kscnet.ru/ivs/conferences/GeothermVolc2023/1-Circular%20Geothermal%20Volcanology%202023%20RU.pdf>**

**Excursion #2 is possible as an alternative to excursion #3 in the presence of favorable weather conditions on September 09, 2023**

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**PERSONAL ITEMS FOR FIELD TRIPS: a small backpack, durable shoes, a wind jacket and pants, a hat, gloves, sunglasses, a flashlight, 1 liter of water (tea in a thermos 0.5 liters + cold water 0.5 liters).**