



GEOHERMAL VOLCANOLOGY WORKSHOP 2022

**ALL-RUSSIAN SCIENTIFIC CONFERENCE WITH
INTERNATIONAL PARTICIPATION**

**"GEOHERMAL VOLCANOLOGY, HYDROGEOLOGY,
GEOLOGY OF OIL AND GAS"**



PROGRAM of the conference (final)

The time of the event is specified for the UTC+12 time zone

Monday 29 August 2022

**14:00 -18:00 REGISTRATION IVS FEB RAS, ROOM 215
FOR REGISTRATION DURING 29 - 31 AUGUST
Evgeniya Chernykh +7 914 621 3725, Olga Usacheva +7 900 443 7889**

Monday 29 August 2022

**18:00 – 20:00 Icebreaker Reception
IVS DVO RAS - room 116**

Tuesday 30 August 2022

Conference hall IVS + online Zoom

Conference Chairman: **Alexey Kiryukhin** (IVS FEB RAS)

09:00 – 09:15 CONFERENCE GUESTS GREETINGS

Deputy Chairman of the Government of Kamchatka Krai **Sergey Mironov**

09:15 SESSION 01: Magma-hydrothermal and supercritical geothermal systems

[0101] 9:15-9:45 **Geothermofluidomechanics of volcanic and hydrothermal systems** Alexey Kiryukhin (IVS FEB RAS)

[0102] 9:45-10:25 **Geothermal energy: technologies and development prospects**, Sergey Alekseenko (IT SB RAS)

[0103] 10:25-10:40 **Thermohydrodynamic modeling of conditions for the formation of the Ketkinsky geothermal field**, Pavel Voronin (IVS FEB RAS)

[0104] 10:40-11:00 **Complex scientific and technical project «Development of geothermal energy in the Russian Federation. Modern energy complexes for generating electrical and thermal energy»**, Vladimir Parshukov (FSBI «Russian Energy Agency», Ministry of Energy of the Russian Federation)

Session 01 discussion

11:00 Coffee break (room 116)

11:30 SESSION 02: Hydrothermal systems of volcanic regions

[0201] 11:30-11:50 **Victor Mikhailovich Sugrobov. On the 90th anniversary of his birth, Marina Kuznetsova (IVS FEB RAS)**

[0202] 11:50-12:10 **Ultra-acid thermal waters geochemistry of the Baransky volcano (Iturup Island, Kuril Islands), Elena Kalacheva (IVS FEB RAS)**

[0203] 12:10-12:30 **Ore-bearing metasomatism in volcanogenic formations of the Russian Far East - from Precambrian to the present day, Vadim Kirillov (ITG FEB RAS)**

[0204] 12:30-12:50 **Modeling of hydraulic interaction conditions between the Paratunsky and Upper-Paratunsky fields, Nikita Zhuravlev (IVS FEB RAS)**

Session 02 Discussion

13:00 14:00 LUNCH

14:00 SESSION 03 : Seismicity in geofluid, volcanic and hydrothermal systems, active and productive faults

[0301] 14:00-14:20 **Magmatic activity of the Mutnovsky volcano and prospects for the expansion of the Mutnovsky geothermal field, Andrey Polyakov (IVS FEB RAS)**

[0302] 14:20-14:40 **Energy spectrum of the seismic process as a representation of geodynamic processes, Alexey Solomatin (IVS FEB RAS)**

[0303] 14:40-15:00 **Microseismic noise variations before the Kudarinsky earthquake of Mw=5.6 on December 09, 2020**, Anna Dobrynina (IEC SB RAS)

[0304] 15:00-15:20 **Thermodynamic parameter fluctuations in a hydrothermal system as a response of the system to external impacts**, Yuri Kuzmin (KB FRC GS RAS)

[0305] 15:20-15:40 **Crustal stress-strain state in the North Muya geothermal region (Baikal rift system)**, Vladimir Sankov (IEC SB RAS)

Session 03 discussion

15:40 Coffee break (room 116)

16:10 SESSION 04: Igneous systems of active volcanoes

[0401] 16:10-16:40 **Seismic tomographic images of magmatic and hydrothermal sources under active volcanoes**, Ivan Koulakov (IPGG SB RAS / IVS FEB RAS)

[0402] 16:40-17:00 **Geophysical heterogeneity and fluid model of the Earth's crust (Avacha-Koryaksky group of volcanoes, Kamchatka)**, Vladislav Loginov (IVS FEB RAS)

[0404] 17:00-17:20 **Analysis of the magmatic activity of the Northern group of volcanoes in 2022 using the Frac-Digger software**, Mikhail Lemzиков (IVS FEB RAS)

[0405] 17:20-17:40 **Dyke field on the southern slope of Koryaksky volcano as an analogue of active magmatic activity**, Evgeniya Chernykh (IVS FEB RAS)

Session 04 discussion

Wednesday 31 August 2022

Conference hall IVS FEB RAS + Online Zoom

09:00 SESSION 05: Modeling of heat and mass transfer, geomechanical processes and chemical interactions in geofluid systems

[0501] 9:00-9:20 Effect and Mechanism of Chemical Stimulation on Deep High-Temperature Granite, Bo Feng (Jilin University, People's Republic of China)

[0503] 9:20-09:40 Disjunctive dislocations of the fan regions and prospects of searching for deep heat in fault zones based on optical and thermal imaging using drones, Oksana Lunina (IEC SB RAS)

[0504] 09:40-10:00 From the patterns of ice deformation before ice shocks to the search for tectonic earthquake precursors, Sergey Bornyakov (IEC SB RAS)

Session 05 discussion

10:30 Coffee break (room 116)

11:00 SESSION 07: Mechanism of functioning of geysers and catastrophic processes in hydrothermal systems

[0701] 11:00-11:20 Secondary mineral formation influence on the Na-K geothermometer readings on the example of the Valley of Geysers hydrothermal system (Kronotsky Nature Reserve, Kamchatka), Anastasia Sergeeva (IVS FEB RAS)

[0702] 11:20-11:40 **New data for 2021 on the regime of the Bolshoy and Velikan geysers (Valley of Geysers, Kamchatka), Olga Usacheva (IVS FEB RAS)**

[0703] 11:40-12:10 **Application of the chloride tracer method to estimate the volume of geyser eruptions and the dynamics of mass discharge of hydrothermal systems, Alexey Kiryukhin (IVS FEB RAS)**

Session 07 discussion

Presentations for publications only

[0403] **Extension of isotopic systematics for studying magmatic processes in subduction zones, Sergey Voropaev (GeoCI RAS)**

[0502] 9:20-9:40 **Geomechanical analysis of fracture formation on rock samples by the Lode-Nadai coefficient, Natalia Bubnova (IPE RAS)**

[0601] **Kyrgyz Tien-Shan geothermal waters formation conditions, Dzhumagul Kendirbayeva (Institute of Seismology of the National Academy of Sciences of the Kyrgyz Republic)**

[0602] **Fluid systems of Kamchatka - a promising resource base for geothermal energy development from the perspective of the hydrothermal process ontogeny concept, Ivan Delemen (IVS FEB RAS)**

[0603] **TOUGH2 and iTOUGH2 modeling of the water-methane field, Aynur Bayramova (St. Petersburg State University, Institute of Geosciences)**

Excursions September 01-02 (organizers - Pavel Voronin, Nikita Zhuravlev):

Thursday 01 September 2022

07:00 – 21:00: Field Tour #1: Gorely volcano, Paratunsky geothermal fields

01/02 September 2022 - Overnight stay at Vilyuchinsky thermal springs (Alney recreation center)

See: overnight stay at the "Rodnikovaya" base

<http://www.kscnet.ru/ivs/conferences/GeothermVolc2022/1-Circular%20Geothermal%20Volcanology%202022%20ENG.pdf>

Friday 02 September 2022

07:00 – 21:00: Field Tour #2: Mutnovsky geothermal field and «the Small Valley of Geysers» (Dachnye springs)

Saturday 03 September 2022

09:00 – 19:00 : Field Tour #3 : VALLEY OF GEYSERS

Organizer: Olga Usacheva, Evgenia Chernykh

See: Valley of Geysers

<http://www.kscnet.ru/ivs/conferences/GeothermVolc2022/1-Circular%20Geothermal%20Volcanology%202022%20RU.pdf>

PERSONAL ITEMS FOR FIELD TRIPS: light sleeping bag (FT #1&2), small backpack, trekking poles, 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).