

05 Sept 2019

## **GEOTHERMAL VOLCANOLOGY WORKSHOP 2019**

**ВСЕРОССИЙСКАЯ НАУЧНАЯ КОНФЕРЕНЦИЯ С  
МЕЖДУНАРОДНЫМ УЧАСТИЕМ «ГЕОТЕРМАЛЬНАЯ  
ВУЛКАНОЛОГИЯ, ГИДРОГЕОЛОГИЯ, ГЕОЛОГИЯ НЕФТИ И ГАЗА»**

Wednesday 04 September 2019

**14:00 -18:00 REGISTRATION IVS FEB RAS, ROOM 223**

**FOR REGISTRATION DURING 05-06 SEPTEMBER**

**CONTACT - TATIANA RYCHKOVA +7 909 839 2727**

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

**ROOM 116**

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Thursday 05 September 2019

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**09:00 PLENARY SESSION**

**Chair: Alexey Kiryukhin**

**09:00 – 09:20 OPENING GREETINGS & REMARKS**

**Alexei Ozerov (IVS FEB RAS), Oleg Kukil (Kamchatka Ministry of Energy), Alexey Kiryukhin (IVS FEB RAS)**

**09:20 – 09:40 "GEOTHERMAL VOLCANOLOGY AS A TOOL FOR SUBDUCTION PROCESSES CHARACTERIZATION " Alexey Kiryukhin (IVS FEB RAS)**

**09:40 – 10:00 "TOWARDS AN INTERNATIONAL MAGMA OBSERVATORY: PROJECT UPDATE ON KRAFLA MAGMA TESTBED, ICELAND" John Eichelberger (Alaska University Fairbanks, USA)**

**10:00 – 10:20 "PROGRESS OF JAPAN BEYOND BRITTLE PROJECT - SUPERCRITICAL GEOTHERMAL RESERVOIR" Noriوشي Tsuchiya (Tohoku University, Sendai, Japan)**

**10:20 – 10:40 "LOCALIZATION AND MODES OF ACTIVITY OF THE SHALLOW MAGMA CHAMBERS OF THE MUTNOVSKY GEOTHERMAL AREA (GORELY AND MUTNOVSKY VOLCANOES)" Oleg Selyangin (IVS FEB RAS)**

**10:40 – 11:00 "CHEMICAL AND ISOTOPIC ( $\Delta^{18}\text{O}$  –  $\Delta\text{D}$ ) COMPOSITIONS OF THE THERMAL WATER OF THE KURIL ISLANDS (RUSSIA)"** Elena Kalacheva (IVS FEB RAS)

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**11:00 Coffee-Brake**

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**11:20 SESSION 1: HYDROTHERMAL SYSTEMS IN VOLCANIC AREAS**

**Chair: John Eichelberger**

**11:20 – 11:40 " HYDROTHERMAL SYSTEMS OF VARIOUS LITHOSPHERIC PLATES MARGINS "** Larisa Auzina (Irkutsk University)

**11:40 – 12:00 "GEOHERMAL POTENTIAL OF THE CONTINENTAL RIFT ZONE OF THE BÜYÜK MENDERES, WESTERN ANATOLIA, TURKEY"** Nevzat Özgür (Süleyman Demirel University, Isparta, Turkey)

**12:00 – 12:20 "STRATEGY FOR TRANSFER OF THE HEAT SUPPLY SYSTEMS OF THE PETROPAVLOVSK-KAMCHATSKY, ELISOVO, VILYUCHINSK ON THE GEOHERMAL SOURCES OF ENERGY"** Vladimir Kudryashov (Regional Center of the Energy Savings Development)

**12:20 – 12:40 "WATER RECHARGING OF THE BOLSHE-BANNY HYDROTHERMAL SYSTEM (KAMCHATKA)"** Ivan Delemen (IVS FEB RAS)

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**12:40 LUNCH**

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**14:00 SESSION 2: SEISMICITY IN GEOFLUID VOLCANIC AND HYDROTHERMAL SYSTEMS**

**Chair: Noriوشي Tsuchiya**

**14:00 – 14:20 "HYDROGEODYNAMIC PRECURSORS OF EARTHQUAKES ACCORDING TO OBSERVATIONS IN THE WELLS OF THE PETROPAVLOVSK GEODYNAMIC POLYGON AND MUTNOVSKY**

**GEOHERMAL FIELD, KAMCHATKA PENINSULA, RUSSIA" Galina Kopylova (KB GS RAS)**

**14:20 – 14:40 "MAGMA INJECTIONS IN THE MUTNOVSKY GEOHERMAL FIELD BASED ON ANALYSIS 2009-2019 SEISMIC DATA" Olga Usacheva (IVS FEB RAS)**

**14:40 – 15:00 "COMPPARATIVE STUDY OF THE SEISMOGENIC PLANES GEOMETRY AND EARTHQUAKES MECHANISMS IN KORYAKSKY-AVACHINSKY GROUP OF VOLCANOES" Evgeniya Chernykh (IVS FEB RAS)**

**15:00 – 15:20 "A POSSIBLE VOLCANIC HAZARD RISK OF THE GÖLCÜK VOLCANO (ISPARTA), SW TURKEY" Nevzat Özgür (Süleyman Demirel University, Isparta, Turkey)**

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**15:20 Coffee-Brake**

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**15:40 SESSION 3: MAGMATIC FEEDING SYSTEMS OF ACTIVE VOLCANOES**

**Chair: Nevzat Özgür**

**15:40 – 16:00 " DISTRIBUTION OF VOLCANIC ERUPTIONS IN KAMCHATKA BY MAGNITUDES IN HISTORICAL TIME AND IN THE HOLOCENE: THE GEOLOGICAL EFFECT OF AN EXPLOSIVE VOLCANISM AND PREDICTIVE ESTIMATES" Victor Ivanov (IVS FEB RAS) (presented by Alexey Solomatin (IVS FEB RAS))**

**16:00 – 16:20 " FEATURES MAGMA MOVEMENT IN THE VOLCANO CHANNEL KORYAK (KAMCHATKA) AT ERUPTION 2008 - 2010 UNDER THE SEISMIC DATA" Vladimir Lemzikov (IVS FEB RAS) (presented by Michail Lemzikov (IVS FEB RAS))**

**16:20 – 16:40 "MAGMA MOVEMENT IN THE VOLCANO CHANNEL AT TRESHCHINY TOLBACHINSKY ERUPTION (KAMCHATKA) IN 2012-2013 UNDER THE SEISMIC DATA" Michail Lemzikov (IVS FEB RAS)**

**16:40 – 17:00 "GEOMECHANICAL INTERPRETATION OF KAMCHATKA SEISMICITY: APPLICATION FOR SEISMIC FORECAST, VOLCANIC'S ERUPTION PREDICTION AND HYDROCARBON SEARCHING" Alexey Solomatin (IVS FEB RAS)**

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**17:00 – 18:30 Discussion: "GEOTHERMAL ENERGY VS HYDROPOWER IN KAMCHATKA "**

**Chairs: John Eichelberger, Vladimir Semchev, Alexey Kiryukhin**

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**Friday 06 September 2019**

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**09:00 SESSION 4: MODELING THE NATURAL STATE AND EXPLOITATION OF GEOTHERMAL RESERVOIRS**

**Chair: Larisa Auzina**

**09:00 – 09:20 " EXPERIENCE IN MODELING THE EVOLUTION OF HYDROGEOLOGICAL CONDITIONS IN THE OPERATION OF THERMAL WATERS USING THE SOFTWARE PACKAGE HYDROGEO" Ekaterina Dutova (Tomsk Polytechnical University)**

**09:20 – 09:40 "ANALYSIS OF THE WELLS PRODUCTIVITY DISTRIBUTIONS IN PARATUNSKY GEOTHERMAL RESERVOIR IN RELATION TO TOUGH2-MODEL ZONATION" Nikita Zhuravlev (IVS FEB RAS)**

**09:40 – 10:00 "ANALYSIS OF THE RESULTS OF DETERMINATION OF THE WATER ISOTOPIC COMPOSITION OF WELLS OF THE PARATUNSKY GEOTHERMAL FIELD FOR THE PERIOD 2014-2018" Pavel Voronin (IVS FEB RAS)**

**10:00 – 10:20 "STATISTICAL ANALYSIS OF THE MONITORING DATA OF PRODUCTION UPPER CRETACEOUS AQUIFER WELLS OF THE ESSENTUKSKOE MINERAL WATER AREA" Arslan Sartykov (Moscow State University, Hydrogeol. Dept.)**

**10:20 – 10:40 " ВЛИЯНИЕ АНТРОПОГЕННОГО ФАКТОРА НА РАБОТУ ГЕОТЕРМАЛЬНОГО ОБЪЕКТА НА ПРИМЕРЕ ПАРАТУНСКОГО МЕСТОРОЖДЕНИЯ" Larisa Vorozheikina (JS Teplo Zemli)**

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**10:40 Coffee-Break**

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**11:00 SESSION 5: RELATIONSHIPS OF GEOTHERMAL ENERGY, MAGMATISM, METALLOGENY, SECONDARY MINERALIZATION AND PERMEABILITY**

**Chair: Larisa Vorozheikina**

**11:00 – 11:20 "ANALYSIS OF CUTTINGS FROM PRODUCTION ZONES OF WELL RE-10 OF THE PARATUNSKY GEOTHERMAL FIELD AND PROSPECTIVES FOR HIGH TEMPERATURE GEOTHERMAL RESERVOIRS (>150°C)" Michail Puzankov (IVS FEB RAS)**

**11:20 – 11:40 "CONTRIBUTION TO THE METALLOGENY OF PERMO-CARBONIFEROUS SN-ZN-IN- AND AG-ZN-SN-IN-POLYMETALLIC MINERALIZATION AND BIMODAL POST-COLLISIONAL MAGMATISM AT THE NW RIM OF THE BOHEMIAN MASSIF (CENTRAL EUROPEAN VARISCIDES)" Thomas Seifert (Technische Universität Bergakademie Freiberg, Germany)**

**11:40 – 12:00 "ABOUT MATERIAL COMPOSITION OF SEDIMENTS FROM «DEEP» GEOTHERMAL WATER OF THE MUTNOVSKY GEOTHERMAL RESERVOIR (SOUTH KAMCHATKA)" Olesya Zoben'ko (IVS FEB RAS)**

**12:00 – 12:20 "CRUSTAL PERMEABILITY REVEALED BY METAMORPHIC PROCESSES AND RAPID INFILTRATION OF GEOFLUIDS" Diana Mindaleva (Tohoku University, Japan)**

**12:20 – 12:30 Anton Vetrov "MAGNETOTELLURICS OBSERVATIONS IN VOLCANIC AND EARTHQUAKE ACTIVE AREA: OUR EXPERIENCE OF AN AUTONOMOUS MONITORING STATION APPROACH ON HAWAII// Phoenix Geophysics Ltd, Canada (presented by Dmitry Isaev (IVS FEB RAS))**

**12:30 – 13:00 "TOWARDS AN INTERNATIONAL MAGMA OBSERVATORY: PROJECT UPDATE ON KRAFLA MAGMA TESTBED, ICELAND (PART 2)" John Eichelberger (Alaska University Fairbanks, USA)**

**13:00 – 13:30 Discussion: "GEOTHERMAL ENERGY VS HYDROPOWER IN KAMCHATKA (PART 2)"**

**Chairs: John Eichelberger, Vladimir Semchev, Alexey Kiryukhin**

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13:30 Lunch

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**14:00 SESSION 6: MAGMATIC FRACTURING AS AN ANALOGUE OF THE DEVELOPMENT OF HYDROCARBON RESERVOIRS WITH HARD-TO-RECOVER RESERVES**

**Chair: Tatiana Korovina**

**14:00 – 14:20 "ORGANIC MINERALS – INDICATORS OF ANOMALOUS THERMOBARIC PARAMETERS OF THE TECTONIC PROCESSES IN VOLCANOGENIC HYDROCARBON FORMATIONS OF WEST SIBERIA"** Tatiana Korovina (JS CoreTest Services, Tyumen)

**14:20 – 14:40 "TOUGH2-EWASG-MODELING OF CH<sub>4</sub> ACCUMULATION IN VOLCANOGENIC RESERVOIRS OF WEST KAMCHATKA"** Pavel Voronin (IVS FEB RAS)

**14:40 – 15:00 "T2-VOC MODELING OF EXTRACTION OIL FROM FRACTURE IN THE BAZHENOV HORIZON"** Aynur Bayramova (St-Petersburg University)

**15:00 – 15:20 "METHODS OF SOLUTIONS IN A PROBLEM OF LABORATORY STUDIES OF CORES FOR FILTRATION MODELS OF POROUS-FRACTURE RESERVOIRS"** Alexey Korovin (JS CoreTest Services, Tyumen)

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15:20 Coffee-Brake

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**15:40 SESSIONS 7-8: MECHANISM OF GEYSER FUNCTIONING AND CYCLIC PROCESSES IN HYDROTHERMAL SYSTEMS. DIAGENETIC ALTERATION OF HOST ROCKS BY HYDROTHERMAL FLUID CIRCULATION**

**Chair: Elena Kalacheva**

**15:40 – 16:00 "THE INVESTIGATION OF THERMAL FIELDS SOURCES OF THE KIPYASHEE LAKE OF GOLOVNIN CALDERA WITH THE HELP OF THE "SELECTOR" PC (KUNASHIR ISLAND)"** Kristina Panova (IGM SB RAS, Novosibirsk)

**16:00 – 16:20 "TOUGHREACT-MODELING OF THE GEYSERS FORMATION IN RHYOLITE TUFFS"** Tatiana Rychkova (IVS FEB RAS)

**16:20 – 16:40 "COMPOSITION OF MINERAL ASSOCIATIONS FORMED ON GEYSERS VALLEY"** Anastasiya Sergeeva (IVS FEB RAS)

**16:40 – 17:00 "HEAVY METALS IN BOTTOM SEDIMENTS IN THE MUD VOLCANISM ZONE IN THE SEA OF AZOV"** Anna Michailenko (Southern Federal University, Rostov-on-Don)

**17:00 – 17:20 "ANALYSIS OF GROUND VERTICAL DEFORMATIONS DURING EXPLOITATION OF THE MUTNOVSKY GEOTHERMAL FIELD"** Mefody Maguskin (IVS FEB RAS)

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**Saturday 07 September 2019**

**08:00 – 20:00 SESSION 9: Field Trip #1: AVACHINSKY VOLCANO**

Chair: Pavel Voronin

See Avachinsky Volcano on

<http://www.kscnet.ru/ivs/conferences/GeothermVolc2019/1-CircularRU.pdf>

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**Sunday 08 September 2019**

**08:00 – 20:00 SESSION 10: Field Trip #2: MUTNOVSKY AND PARATUNSKY GEOTHERMAL AREAS**

Chair: Pavel Voronin

See Mutnovsky and Paratunsky Geothermal Areas on

<http://www.kscnet.ru/ivs/conferences/GeothermVolc2019/1-CircularRU.pdf>

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**Monday 09 September 2019**

**08:00 – 20:00 SESSION 11: Field Trip #3: VALLEY OF GEYSERS**

Chair: Tatiana Rychkova

See Valley of Geysers on

<http://www.kscnet.ru/ivs/conferences/GeothermVolc2019/1-CircularRU.pdf>

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**PERSONAL ITEMS FOR FIELD TRIPS:** Small backpack, hardy shoes, wind & wet-stop jacket & pants, hat, gloves, sun protected glasses, flashlight, tracking poles, water 1L (thermos tea 0.5 L + cold water 0.5 L).

**PAPERS SUBMITTED FOR PUBLICATION ONLY:**

**(38) J.Zh. KENDIRBAYEVA THE HYDROGEO THERMAL SYSTEMS OF THE KYRGYZ TIEN SHAN AS REFLECTION OF THE THEORY OF THE PULSING EARTH // Institute of Seismology, Bishkek, Kyrgyzstan**

**(39) Petr Kiryukhin IDENTIFICATION ACTIVE SEISMOGENIC AND FRACTURE ZONES WITH USING FRAC-DIGGER AND FRAC-DIGGER2// EPAM, St-Petersburg**

**(40) Ksenia Shishkanova "INDIUM AND CADMIUM IN THE SPHALERITE ZONES OF THE HYDROTHERMAL CIRCULATION OF THE SOUTH KAMCHATSKY MINING ORE AREA (KAMCHATKA)" // IVS FEB RAS**

**(41) Dina Deyneko "FEATURES OF THE CRYSTALLINE STRUCTURE OF HIGH-FLUORIDE AND HIGH-TITANIUM AMPHIBOLE FROM ALKALINE ROCKS OF PALEOVOLCANO AIFEL (GERMANY), AS INDICATORS OF MINERAL FORMATION CONDITIONS" // Dept. of Chemistry, Lomonosov Moscow State University**

**PAPERS ANTICIPATED FOR PUBLICATION ONLY:**

**(42) Victor Okrugin THE RARE MINERALIZATION THE MUTNOVSAKAYA HYDROTHERMAL ORE FORMING SYSTEM (KAMCHATKA) // IVS FEB RAS**

**(43) Grimur Bjornsson SIMILARITIES AND DISSIMILARITIES OF LOW TEMPERATURE GEOTHERMAL SYSTEMS HOSTED ON SPREADING RIDGES AND ISLAND ARCS. THE ICELANDIC EXAMPLES // Warm Arctic, Iceland**