Ministry of Science and Higher Education of the Russian Federation
Research Geotechnological Center of Far Eastern Branch of the Russian Academy of Sciences

3rd International Geothermal Conference GEOHEAT
www.igc-geoheat.com

GEOHEAT2019
First Announcement

Programme overview

- **Late August – Early September, 2019**
  Pre-conference scientific field trips and excursions (for those who wish and inform the organizing committee about it in advance)

- **28 August – 02 September, 2019**
  Pre-conference short courses for young academics, students and researchers

- **03 September – 04 September, 2019**
  Plenary, panel sessions and sections

- **05 September – September 06, 2019**
  Post-conference scientific field trips and excursions

Dates
03 to 06 September, 2019

Petropavlovsk-Kamchatsky, Russian Federation
Organizing Committee:
Chair Roman I. Pashkevich Research Geotechnological Center of Far Eastern Branch of Russian Academy of Sciences, Russian Federation

Members:
Alper Baba Geothermal Energy Research and Application Center, Izmir Institute of Technology, Republic of Turkey
Dornadula Chandrasekharam Indian Institute of Technology Hyderabad, India
Surya Darma Indonesia Renewable Energy Society, Republic of Indonesia
Zaohong Fang Shandong Jianzhu University, Peoples Republic of China
Sergei A. Fedotov Institute of Physics of the Earth of the Russian Academy of Sciences, Russian Federation
Alain Gadalia BRGM, French Geological Survey, France
Luis C.A. Gutierrez-Negrin GEMex Project, CeMIE-GEO, United Mexican States
Vladimir Hristov Geological Institute – Bulgarian Academy of Sciences, Bulgaria
Mikhail D. Khutorskoi Geological Institute of the Russian Academy of Sciences, Russian Federation
Vladimir P. Kobolev S.I. Subbotin Institute of Geophysics of the National Academy of Sciences of Ukraine, Ukraine
Margaret Krieger International Geothermal Association, Federal Republic of Germany
John W. Lund Geo-Heat Center, Oregon Institute of Technology, United States of America
Peter Meier Geo-Energie Suisse, Switzerland
Abdulvahab Mukhtarov Department of Geothermics, Geology and Geophysics Institute of Azerbaijan National Academy of Sciences, Republic of Azerbaijan
Leonardo Solis Instituto Costarricense de Electricidad, Costa Rica
Mike O’Sullivan Department of Engineering Science, University of Auckland, New Zealand
Zhonghe Pang Institute of Geology and Geophysics, Chinese Academy of Sciences, Peoples Republic of China
Yuri A. Popov Skolkovo Institute of Science and Technology, Russian Federation
Árni Ragnarsson Iceland GeoSurvey, Iceland
Jesus Rueda Asociación Colombiana De Estudiantes De Geociencias, Republic of Colombia
Sheng-Rong Song Department of Geosciences, National Taiwan University, Taiwan
Mario-Cesar Suarez-Arriaga International Geothermal Association – Mexican Geothermal Association, United Mexican States
Yuri P. Trukhin Research Geotechnological Center of Far Eastern Branch of Russian Academy of Sciences, Russian Federation
Grigori P. Vasiliev Insolvar Invest, Russian Federation
Albert Waibel Columbia Geoscience, United States of America
Lothar Wissing Forschungszentrum Jülich GmbH, Projekträger Jülich PTJ-ESE 4, Germany
Vladimir I. Zui Belarusian State University, Republic of Belarus

GEOHEAT is an annual international geothermal conference which held in September in Petropavlovsk-Kamchatsky on basis of Research Geotechnological Center of Far Eastern Branch of Russian Academy of Sciences. The first conference GEOHEAT2017 was held in 2017. Twenty-seven papers of the scientists and professionals from 5 countries worldwide (Russia, Germany, New Zealand, Mexico and Taiwan) were presented in a plenary session. The attendants presented twelve scientific and educational institutions, three production companies and one business administration. There were more than 100 registered participants. Four scientific trips were carried out as a part of the conference. The representative of International Geothermal Association participated in the conference.

The second International Geothermal Conference GEOHEAT2018 was held on 04-07 September. There were presented 31 plenary and 21 poster presentations at the Conference. The
conference gathered more than 100 participants from different countries. There were reports and posters of the participants from 20 countries (Azerbaijan, Bangladesh, Bulgaria, China, Colombia, Costa Rica, Democratic Republic of the Congo, France, Germany, Indonesia, Kyrgyzstan, Mexico, Russia, Switzerland, Tajikistan, Turkey, Uganda, Ukraine, USA, Yemen Arab Republic).

The events will contribute to the solution of a number of fundamental problems: the development of theoretical issues of geothermics and heat flow of the Earth; establishment of new features of thermophysical processes in the geothermal water field development with supercritical thermodynamic parameters; the establishment of geothermal parameters of the Earth crust on basis of advanced experimental technologies (continuous thermal core logging technology, instruments for thermal property measurements at formation conditions, accounting of rocks heterogeneity, as well as micro- and macroanisotropy), and on this basis the geothermal resources reevaluation, including geothermal resources maps.

The planned event will be of great importance for the development of the above directions. Since not only representatives of academic institutions, universities and research laboratories, but also representatives of the geothermal industry, private geothermal research companies and resource developers who will be present at the conference among the participants and speakers, the scientific results will be able to find practical application.

**Goals:**
The goals of the conference are to distribute scientific and industrial information concerning current state of geothermal science, technology and industry; to share knowledge and results in theory, methodology, technology and applications of geothermal science; to bring together scientists, researchers, engineers, students and managers interested in geothermal science; to promote geothermal innovations; provide a forum to exchange ideas on the exploration, development and use of geothermal resources; to encourage international communication and collaboration.

**Topics for Talks, Posters, and Panel Discussions:**
- Theoretical Issues of Geothermics and Heat Flow
- Geothermal Resources in Extensional and Compressional Settings
- Geosciences
- Case Studies
- Exploration
- Field Management
- Electricity Generation
- Drilling and Well Bore Flows
- Reservoir Engineering and Numerical Simulation
- EGS/HDR
- Geology of Geothermal Fields
- Geochemistry of Geothermal Fields
- Thermal Properties of Geothermal Fields Rocks
- Low Enthalpy Systems and Direct Use
- Geothermal Heat Pumps
- Geothermal Hydrogen
- Magma Chambers
- Economics

**Preliminary Information of Short Courses:**
Short courses are planned to be held before the conference. Rough date is from August 28 till September 2, 2019. Exact date will be informed in the second announcement.
Short courses are as follows:

1. Alain Gadalia, BRGM, French Geological Survey, France
   *Some geochemical basics applied to geothermal exploration*

2. Yuri A. Popov, Skolkovo Institute of Science and Technology, Russian Federation
   *New methods of thermal petrophysics and geothermics and their role in effectiveness improvement of reservoirs research*

   *Local thermal non-equilibrium inside the porous rock-water system*

4. Albert Waibel, Columbia Geoscience, United States of America
   *The philosophy of geothermal exploration*

Additional short courses are pending. Full information will be presented in the second announcement.

**Conference Location:**
The conference is organized by the Research Geotechnological Center of Far Eastern Branch of Russian Academy of Sciences, Petropavlovsk-Kamchatsky, Russia.

Kamchatka is a very unique region of Russia. It is a part of Pacific Ring of Fire (circum-Pacific orogenic belt) and it is washed by cold Okhotsk Sea, Bering Sea and the Pacific Ocean. Petropavlovsk-Kamchatsky is the capital of Kamchatka peninsula. It is a sea-port and one of the most spectacular towns in the whole world. It is a land of Hot Springs and geysers, volcanoes and valleys with lush vegetation.
Kamchatka is a zone of modern volcanism. It has about 30 active volcanoes, about 300 extinct and destroyed volcanoes, more than 2500 cones, a great number of cold mineral and thermal hot springs and geysers. The Mutnovsko-Gorely Group is located about 80 km south of Petropavlovsk-Kamchatsky on the south side of Avacha Bay. Mutnovsky volcano has the one of the world's largest fumarole fields; and it is one of the most active volcanoes in Kamchatka. Mutnovskaya Geothermal Power Station was built at the foot of this volcano.

Flora and fauna are very rich and unique. There are some giant species (up to 3-3.5 m) which grow on a rich volcanic soil. The fauna includes 170 species of birds and 60 species of mammals. Beside numerous rivers, waterfalls and lakes Kamchatka has enormous reserves of fresh water. Kamchatka’s rivers are a spawning place for one of the world largest populations of salmon.

September in Kamchatka is a symphony of colors. It is a beneficial and exciting time to travel around the peninsula. In September there are no permanent fog, rain and slush. The weather is splendid, the temperature is comfortable.

See more pictures of Kamchatka at http://igc-geoheat.com/Gallery.html

The Petropavlovsk Kamchatsky international airport is about 20 km from city border in Yelizovo. Most visitors arrive here from Moscow, but there are flights via Vladivostok and Khabarovsk.

**Important Deadlines:**
Registration at www.igc-geoheat.com, Registration Letter and Abstracts Submission (the abstract text is limited to 200 words):
April 15, 2019

Notification of Abstract Acceptance
April 20, 2019

Second Announcement:
April 29, 2019

Full Papers Submission for Publication (papers should be limited to a maximum length of 5000 words). Follow, please, the journal guidelines when formatting the papers, these are available from the website at http://conferenceseries.iop.org/content/authors. Be sure that everything in
your paper corresponds to the IOP requirements. Papers which fail to meet the requirements of IOP will not be accepted for the peer review:

May 15, 2019

Notification of Full Papers Acceptance:

May 31, 2019

Preliminary Agenda (with the information about plenary session or/and sections):

June 1, 2019

Final Agenda:

July 1, 2019

Please, register at www.igc-geoheat.com and send your registration letter to e-mail: geoheat2019@yandex.ru

In your **registration letter** would you be so kind to give the information as follows:

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<td>Country and city of residence</td>
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<td>Affiliation</td>
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<td>Brief bio</td>
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<td>10</td>
<td>Paper title</td>
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<td>11</td>
<td>Abstract</td>
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<td>12</td>
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<td>Oral</td>
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<td>Poster</td>
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<td>Panel discussion</td>
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<td>13</td>
<td>Major theme</td>
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14 Willingness for scientific field trips

15 Willingness for attending short courses. Note the title of the courses you would like to attend.

**Registration Fee is Free of Charge**

**Contact**

**Mailing Address:**
Research Geotechnological Center, Far Eastern Branch of Russian Academy of Sciences, Severo-Vostochnoye shosse, 30, Petropavlovsk-Kamchatsky, 683002, Russian Federation.

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**Director**
Roman I. Pashkevich

E-mail: geoheat2019@yandex.ru

**Accommodation:**
There are different hotels and hostels in Petropavlovsk-Kamchatsky. For example, Avacha hotel, Petropavlovsk hotel, Nachalnik Kamchati Hotel, Dolce Vita, etc. The price of the accommodation per day varies from 66 to 100 $ USA and higher. Accommodation and hotel booking is made by the conference participants personally. Hotels information is presented at [https://www.booking.com/city/ru/petropavlovsk-kamchatskiy.en- gb.html?aid=356993&label=gog235jc-hotel-ru-ru-adacha-unspec-ru-com-L%3Aru-O%3AwindowsSxp-B%3Afirefox-N%3Ayes-S%3Abo-U%3Ae-H%3As&sid=a23601d1952803b735be1001fc6bd126&inac=0&lang=en- gb&soz=1&lang_click=top;cdl=ru;lang_changed=1](https://www.booking.com/city/ru/petropavlovsk-kamchatskiy.en- gb.html?aid=356993&label=gog235jc-hotel-ru-ru-adacha-unspec-ru-com-L%3Aru-O%3AwindowsSxp-B%3Afirefox-N%3Ayes-S%3Abo-U%3Ae-H%3As&sid=a23601d1952803b735be1001fc6bd126&inac=0&lang=en- gb&soz=1&lang_click=top;cdl=ru;lang_changed=1)

**Official Languages:**
The official language of this conference is English. Speaker can do oral presentation either in Russian or English. Those speakers, who can report both in English and Russian but prefer to speak one of these languages, should deliver a presentation in the format of power point both in English and Russian.

Speakers who will do oral presentation in English and haven’t the possibility to do it in Russian should deliver a presentation in the format of power point in English.

Participants’ questions and answers will be translated by the translator.
Instructions for Abstract Submissions:
- Submit your abstract in Microsoft Word format.
- Abstracts are to be written in English only. All presentations will be in the English language.
- The authors’ names and institutions (including address) should be included in the abstract, beneath the title.
- The title of the abstract should be typed in 12-point font.
- The presenting author’s email address must be included.
- The abstract should have a maximum of 200 words.
- The abstract should be as informative as possible.
- Standard abbreviations such as: XRF, etc., may be used. Others should be described in full when first mentioned followed by the abbreviation in parenthesis.
- Do not include tables, photographs, figures or references in your abstracts.
- Include a one-paragraph bio of yourself with the abstract submission.

Visa:
The documents for visa application will be prepared. Participants should send passport photocopy to e-mail: geoheat2019@yandex.ru as soon possible. Then invitation-letter for visa arrangement to the Russian Federation will be sent.
The following information is necessary to make visa arrangement:
1) the copy of your passport;
2) which cities will be better for your further visa processing;
3) the state and the city of your birth;
4) the state and the region of your permanent residence;
5) full name of your place of work;
6) full address of your place of work;
7) your position in your organization;
8) via what Russian cities will you get to Petropavlovsk-Kamchatsky;
9) the completed registration form with the title of your report.
This information should be delivered by 1st May, 2019.

Proceedings:
The proceedings of full papers will be published in IOP Conference Series: Earth and Environment Science (EES) after the conference after the peer review. It is indexed in Scopus, as well as EI Compendex and Inspec. More detailed information will be presented in the second announcement.
Authors need to follow the journal guidelines when formatting their papers, these are available from the website at http://conferenceseries.iop.org/content/authors.
Full papers will be published in IOP Conference Series by the beginning of the conference after the peer review. Be sure that everything in your paper corresponds to the IOP requirements. Papers which fail to meet the requirements of IOP will not be accepted for the peer review.

The information of additional conditions and publication fee will be presented in the second announcement.
Presentations:
There will be presentation of the papers in two languages (English and Russian) simultaneously. English version will be on one screen, Russian on another. Or there will be half of each slide in Russian and half in English simultaneously in the same window, using Power Point. The time for paper presentation including the answers for the questions is not more than 20 minutes. The additional information of the presentation will be presented in the second announcement.

Scientific Field Trips:
You can visit Mutnovsky hot springs, geothermal field and GeoPP located 120 km South-West from Petropavlovsk-Kamchatsky city on the bank of the Falshivaya River. Mutnovsky GeoPP is the largest one in the Russian Federation. Its capacity is 50 MW. The plant is operated by Geotherm JSC, a subsidiary of PJSC RusHydro.

We can offer you a helicopter trip to the Geyser Valley or a flight to the Avacha volcano, a trip to the Malkinskoe and Ketkinskoe fields of thermal water and ethnic settlement Kaynyran.

The Valley of Geysers is located 180 km to the North-East from Petropavlovsk-Kamchatsky among the volcanoes, near the so called East volcanic belt. This is the place where there are many hot springs and about ninety geysers are concentrated. It is part of the Kronotsky Nature Reserve. The valley is difficult to reach, the only possible means of transport there is a helicopter.
Malkinskoe hot springs are located 130 km from the city of Petropavlovsk-Kamchatsky in a beautiful valley, near the Klyuchevka River. Water temperature is up to 84°C. Malkinskoe hot springs are representatives of the popular Kamchatka group of siliceous-alkaline, hydrocarbonate-sulphate waters.

Malkinskoe field of thermomineral water is located not far from Malkinskoe hot springs. It is exploited for heat supply of the fish-breeding factory. Malkinskoe field is the field of mineral water, located in Elizovo region of Kamchatka Krai. It is on the right bank of the Bystraya River. There is a bottling factory of mineral water here. This is ferrous sodium hydrocarbonate mineral water, its mineralization is 3,8 g/l. Fe concentration is 9,5 mg/l. It is of high rate. There is a high concentration of free carbonic acid – 2,6 g/l. Water temperature at the exit is 5,6°C.

Ethnic settlement Kaynyran is located 16 km from Yelizovo town. The word Kaynyran is translated from Koryak as bear house. Here you can visit fur yaranga, learn about the life of aboriginal people, take part in master classes on weaving birchbark and sewing beads. You will visit the bears living in the territory of the settlement and sled dogs, and ride horses.

Additional information about other trips will be presented in the second announcement.
The planned scientific field trip and their approximate cost:

<table>
<thead>
<tr>
<th>Vehicle trip to the Mutnovskaya GeoPP</th>
<th>120 $ USD</th>
<th>7700 RUS rubles</th>
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<tr>
<td>Helicopter Trip to the Geyser Valley or flight to the Avachavolcano</td>
<td>up to 695 $USD</td>
<td>up to 44500 RUS rubles</td>
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<tr>
<td>Vehicle trip to the Malkinskoe field of thermal water</td>
<td>70 $ USD</td>
<td>4500 RUS rubles</td>
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<td>Vehicle trip to the Ketkinskoe field of thermal waters and ethnic settlement «Kaynyran»</td>
<td>60 $ USD</td>
<td>4000 RUS rubles</td>
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<td>110 $ USD</td>
<td>7400 RUS rubles</td>
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<tr>
<td>Helicopter Trip Petropavlovsk-Kamchatsky – Mutnovskaya GeoPP – Pauzhetskaya GeoPP – Apachinskie Springs – Petropavlovsk-Kamchatsky (take place if there are enough people signed up for the flight)</td>
<td>up to 1400 $USD</td>
<td>up to 89000 RUS rubles</td>
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</table>

Helicopter trip always depends on the weather. If the weather is good, such trip takes place. If the weather is non-flying, the trip is arranged on another day.

If somebody wants to visit other excursions, you can arrive earlier. Inform the organizing committee about it, please.

The cost of the scientific field trip is depended on numbers of participants and will be specified at the time of their carrying out.

Confirm the trips you have chosen before the beginning of the conference.
Oral and Poster Presentations
Material may be presented in one of the following presentation types:
– Oral
– Poster

Terms, conditions and rates
All terms, conditions, dates and rates are subject to change (without any other notifications).

The conference will be held during 4 days (September 03-06, 2019). Two days will be devoted to oral presentations and posters. During other two days participants can visit scientific field trips. Trips are paid on site.

Transportation
We will meet you in the airport and transport to the hotel. At the exit of the airport there will be a person with the emblem GEOHEAT2019. Transportation from the airport to the hotels, from hotels to the conference hall and back is free of charge. On September 3-6, 2019 the shuttle will depart from the hotel at 8.30. Participants should be ready downstairs by this time. Shuttle is free of charge.

The emblem GEOHEAT2019