



10th BIENNIAL WORKSHOP on JAPAN-KAMCHATKA-ALASKA SUBDUCTION PROCESSES (JKASP-2018)

20th ANNIVERSARY OF JKASP FOUNDATION

VOLCANISM AND SEISMICITY IN THE SUBDUCTION ZONE

Institute of Volcanology and Seismology FEB RAS (IVS)
Petropavlovsk-Kamchatsky, Russia, August 20th -26th, 2018



3rd CIRCULAR and PROGRAM

The Scientific Program in PDF format can be found [here](#).

STEERING COMMITTEE

Evgeny Gordeev and Danila Chebrov, Petropavlovsk-Kamchatsky, Russia
Hiroaki Takahashi and Mitsuhiro Nakagawa, Sapporo, Japan
John Eichelberger and Pavel Izbekov, Fairbanks, Alaska, USA

WORKSHOP VENUE

Institute of Volcanology and Seismology FEB RAS (IVS), Petropavlovsk-Kamchatsky (PK).

REGISTRATION FOR THE WORKSHOP AND FIELD TRIPS

20 August (Monday) 10:00 - 12:00 and 15:00 - 17:00

21 August (Tuesday) 09:00

REGISTRATION FEE

Scientists 300 USD

Students 100 USD

Accompanying persons 200 USD

The registration fee will be paid at IVS registration desk in cash in rubles, dollars and euro. Please note that foreign currency must be free of any marks or tears.

FIELD TRIP PRICE

Ksudach field trip is around 350 USD.

(A copy of your passport is needed to register for Ksudach field trip).

SCHEDULE		
09:00	21 AUGUST (Tuesday)	REGISTRATION
10:00 -18:00	21 AUGUST (Tuesday)	SESSION OPENS
		ICE BREAKER
10:00 -18:00	22 AUGUST (Wednesday)	SESSION
10:00 -18:00	23 AUGUST (Thursday)	SESSION
9:00 from IVS 8:00 from GL	24 AUGUST (Friday)*	AVACHINSKY VOLCANO
9:00 from IVS 8:00 from GL	24 AUGUST (Friday)*	MUTNOVSKY VOLCANO
9:00 from IVS 8:00 from GL	24 AUGUST (Friday)*	GORELY VOLCANO
TBD	25 AUGUST (Saturday)*	HELICOPTER TRIP (passport needed)
10:00 -13:40	26 AUGUST (Sunday)	CLOSING SESSION
17:00 - 21:00		FAREWELL DINNER

*The dates of field trips can be updated during the workshop based on weather conditions

GUIDELINES FOR ORAL AND POSTER PRESENTATIONS

Oral talks should be **20 minutes** (including 3-5 minutes for questions and discussion). The discussion time may be reduced or cancelled if the presenter takes more than the scheduled time.

Posters should be presented in a **portrait layout**. Maximal size of a poster is A0.

FIELD TRIPS AND EXCURSIONS

August 24, 2018: field trips to Mutnovsky, Gorely and Avachinsky volcanoes will be held on the same day. Please make sure you chose only one field trip. **The date of field trips will be specified during the workshop due to weather conditions.**

August 25, 2018: a helicopter flight over Southern Kamchatka volcanoes (with landings at Ksudach and Khodutka volcanoes and swimming in hot thermal springs) . The flight cost is around 350 USD and will be specified after the on-site registration is closed. **In case of unfavorable weather, the date and route of the flight will be changed.** Passport is needed.

SUGGESTED GEAR FOR FIELD TRIPS

Hiking boots, water resistant and windproof wear, cap, gloves, sunglasses, flashlight, trekking poles (optional) , swimming suits (for Ksudach trip) and repellents.

MEALS

Meals and drinks will be offered during all field-trip days. Vegetarian food should be ordered in advance, one week before the meeting, at evdokimova@kscnet.ru.

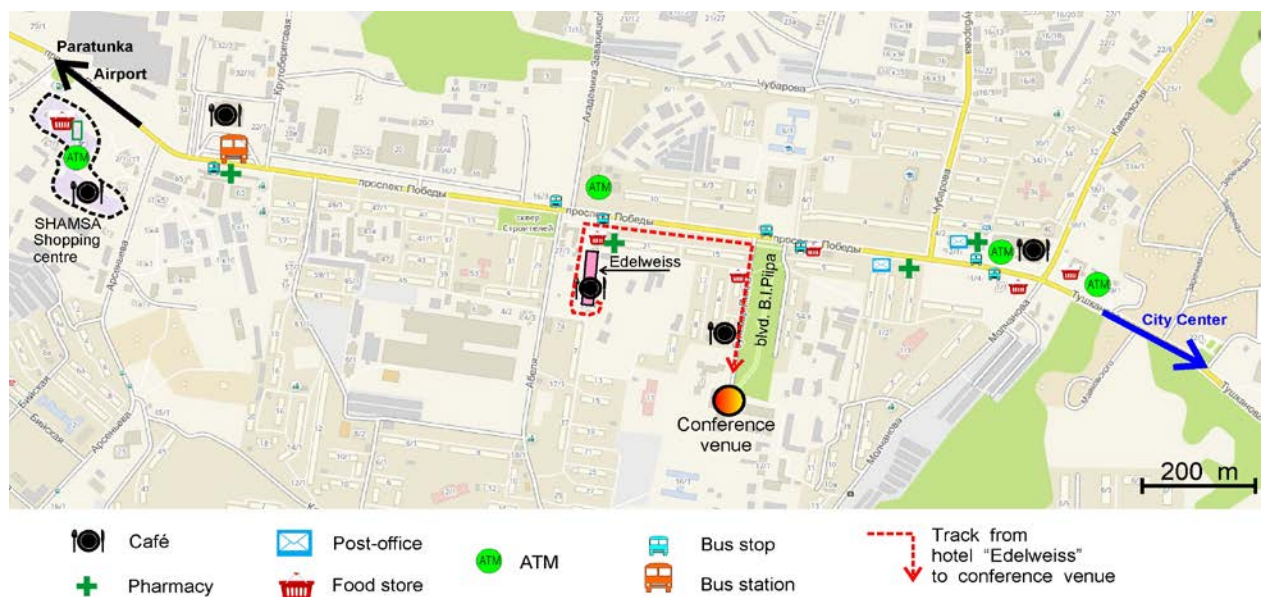
TRANSPORTATION FROM AIRPORT

To get to the town from the airport, take bus #104 that runs every hour from the airport to the central market. The bus stop named "PETROPAVLOVSK-KAMCHATSKY" is located across the parking lot from the main entrance. The journey takes about 45 minutes and costs 64.00 RUB. Bus #102 runs frequently from the airport to PK though it is necessary to change at the 10 km station. A taxi from airport will cost around 1500 RUB <https://taxigost.ru/price2/>.

GETTING AROUND

In town, buses and micro vans run almost the whole length of Petropavlovsk, from the "10 km station". Taxis should be booked in advance by phone or hailed on the street.

+7 (4152) 30-33-33, 41-47-47.



WEATHER

August in PK is generally sunny with occasional rain and a typical daytime temperature of 18°C. Heavy rains are possible.

CURRENCY

You will be able to withdraw rubles from ATMs at the airport and other locations in PK. Credit cards are accepted in most stores. There will be a likely foreign transaction fee of 1-3 % from your bank and likely local bank fees for each transaction.

VOLTAGE

220V, 50Hz



Wi-Fi

During the workshop Wi-Fi will be available in the conference room and lobbies.

SMOKING

Smoking area is located on the first and third floors.

CONTACT INFORMATION

Oxana Evdokimova
229 Office (evdokimova@kcsnet.ru).

The updated information will be posted at
<http://www.kcsnet.ru/ivs/conferences/jkasp2018/>.

FIELD TRIPS

Field trips to Gorely, Mutnovsky and Avachinsky will be held on the same day. Note that the priority will be given to the helicopter flight to volcanoes of the Eastern Kamchatka if the weather permits. If this happens, field trips to Gorely, Mutnovsky and Avachinsky will be performed on any other day.

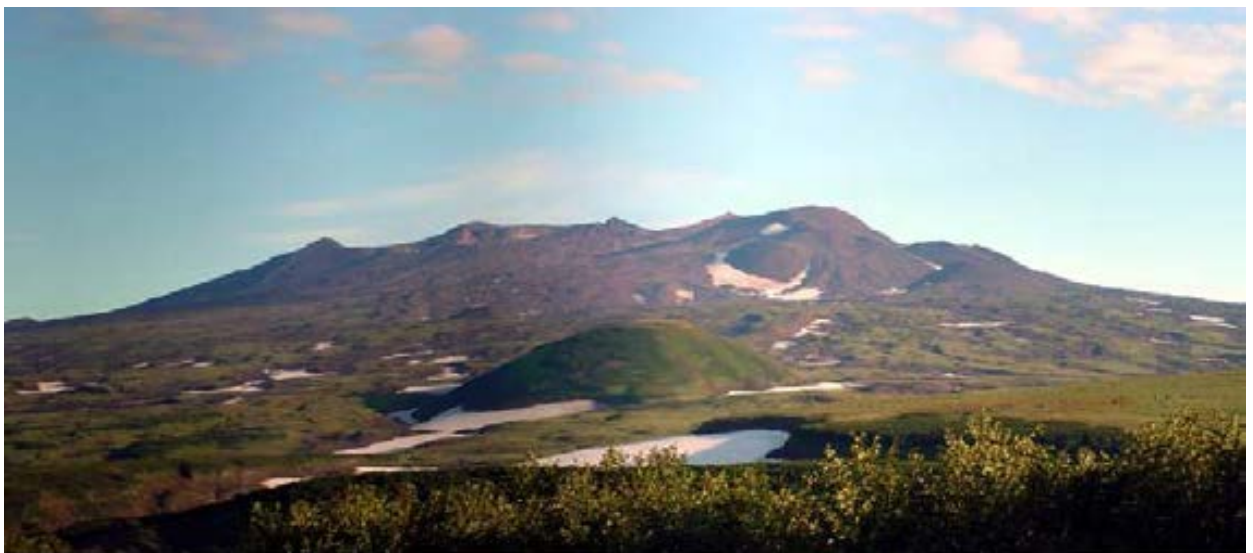
1. GORELY VOLCANO

Moderate to strenuous hiking

Gorely (1829 m) is an active volcano located 70 km southwest of Petropavlovsk-Kamchatsky. The present-day edifice occupies the central part of the caldera. It consists of three closely spaced cones that constitute a mountain range stretching to west-north-west.

The summit is capped by 11 superimposed craters. About 40 flank vents with lava flows reside slopes of the summit. Composition of erupted lavas varies from basalts to andesites. The first historic record of eruptive activity dates from the 19th century. Explosive eruptions from the summit crater occurred in 1828, 1832, 1855, and 1869. In the 20th century Gorely produced seven eruptions in 1929, 1930, 1931, 1932, 1947, 1961, 1980-1981, 1984-1986 and 2010-2014.

The 1980-1981 eruption produced up to 65,000 tons of material that covered an area of 500 sq. km. During the 1984-1986 eruption the height of gas-ash clouds reached 5300 m above sea level. During the 2010-2014 eruption, the acid lake located in the crater has vanished under the action of the intensive heat flux. Information on the on-going activity can be seen at: <http://www.kscnet.ru/ivs/kvert/volc?name=Gorely&lang=en>.



A view of Gorely from the southwest. Photograph by Pavel Izbekov (UAF)

We offer a day trip to Gorely volcano on a 4WD cabin lorry. Departure at 9 am from IVS. It takes about three and a half hours to get to the basement on unpaved road. Moderate to strenuous hiking will last about 6 hours. Lunch is provided. Estimated time of return to Petropavlovsk-Kamchatsky is 9 pm.

MUTNOVSKY VOLCANO

Strenuous hiking, late return to PK.

Note that this field trip will be held on the same day in parallel with the trip to Gorely. Participants of both trips depart and come back at the same time.

Mutnovsky (2323 m) is an active volcano located 70 km southwest of Petropavlovsk-Kamchatsky and 17 km south-east of Gorely. Mutnovsky is one of the most picturesque and compositionally diverse volcanoes in southern Kamchatka. The volcano is a complex edifice formed by four-intergrown stratovolcanoes. The active vent 440x100 m in size is embedded into the western rim of the main crater. Temperature of fumaroles in the active vent reaches 600°C. The known explosive eruptions occurred in 1848, 1852-1854, 1898, 1904, 1916-1917, 1927-1929, 1938-1939, 1960-1961, 2000, 2007, 2013.

On 17 March 2000 two phreatic bursts occurred in the active vent and in the neighboring crater. A 80 m in diameter funnel was formed in the active vent. As a result of interaction of bursts and flux of hot gas, the crater glacier was melted substantially and a lake formed in the neighboring crater. A funnel of 200 m in diameter and 30 m deep emerged during the 17 April 2007 phreatic explosion in the active vent. An ash cloud persisted for 6 hours in satellite images. On July 3, 2017 weak emissions of ash plumes were observed from the Active vent. Information on the on-going activity can be seen at:

<http://www.kscnet.ru/ivs/kvert/volc?name=Mutnovsky&lang=en>.



A view of the Mutnovsky crater in 2003. Photograph by Pavel Izbekov (UAF)

Participants of this one-day trip hike the crater and will see a variety of recent hydrothermal processes: boiling mud pods, hot acid lakes and fumarolic fields. These processes result in deposition of many different minerals: native sulfur, alunite, opal, hematite, ammonium chloride, gypsum, pyrite, marcasite, cinnabar, chalcopyrite, pyrrhotite, etc.

AVACHINSKY VOLCANO

Strenuous hiking, late return to PK

Avachinsky is a typical Somma-Vesuvius type volcano located 30 km north of Petropavlovsk-Kamchatsky. The maximum height is 2751 m, while the height of the somma in its eastern part is 2317 m. The active cone rises 400-1000 m above the somma edge. At the base, this cone is about 4 km in diameter, and is crowned by the crater 350 m in diameter. During the last 250 years eruptions occurred in 1737, 1772, 1779, 1789, 1827, 1837, 1855, 1878, 1881, 1894-1895, 1901, 1909, 1926-1927, 1938, 1945, 1991 and 2001.



*A View of Avachinsky from Petropavlovsk-Kamchatsky.
Aleksandr Sokorenko (IVS)*

One of the largest eruptions June 15-16, 1779, produced an ashfall that dusted the ships of the Cook's expedition anchored in Avacha Bay. The 1894-1895 eruption was preceded by an earthquake. Lava flows happened in 1827, 1901, 1909, and 1938. The latest eruption of 13 January 1991 produced lava that completely filled the crater and poured a flow of 600 m length down the south-eastern slope of the cone. A short gas explosion occurred on 5 October 2001 and the lava "cork" in the crater was broken. Nowadays, vigorous superheated steam plumes issue from both ends of the crack. Information on the on-going activity can be seen at: <http://www.kscnet.ru/ivs/kvert/volc?name=Avachinsky&lang=en>.

Departure to Avachinsky starts at 8 am from IVS. The ride takes about 3 or more hours depending on the state of the road. The strenuous 4-5 hour hiking to the top (about 1500 m ascent) is suitable for physically fit outdoor participants. Descent takes about one and a half hour. Lunch and slight snack are provided. Estimated time of return to Petropavlovsk-Kamchatsky is 8 pm.

KSUDACH VOLCANO

Helicopter tour is about \$250-300 including food and transportation. Final cost will be specified within the first days of the workshop due to requests from participants.

Ksudach is a caldera-type volcano. It is an eroded flattened cone with the base of 18x22 km. The edifice consists of calderas of different ages and remnants of intra-caldera volcanoes. The young Shtyubel cone in northern part is a center of the most recent volcanic activity of Ksudach. The absolute height of the edifice is 1079 m. Relative height is 500 m east and 700 m west. Several calderas are located at the summit of the volcano: two large calderas (I and II) formed in late Pleistocene; three calderas of smaller size (III, IV and V) formed in Holocene. The last caldera-forming eruption at volcano 250 AD, was one of the largest Holocene eruptions in the Kurile-Kamchatka region. The character and parameters of the eruption were similar to the 1883 eruption of Krakatau.



*Shtyubel Crater at the summit of Ksudach.
Photograph by Nikolai Smelov (IVS)*

The last eruption at Ksudach occurred in 1907, forming Shtyubel cone, with a crater of 1x1.7 km at its summit. A 4-5 m thick dacite pumice layer was deposited northward of the volcano. Pyroclastic deposits related to this eruption extended northeast for 40 km and 15 km southeast.

Atypical events associated with this eruption were noted. The episodes of eruptive activity produced black cinders of andesite – andesite-basalt composition that with no sign of a pause gave way sharply to jets of dacite pumice, with volcanic and basement lithics mixed pyroclastics including facies of ignimbrites. The eruption ended by producing phreatic jets that sent a great number of blocks of crystalline, allivalite-eucrite rocks.

Crater lakes Styubel and Klyuchevskoe are nested at the summit of the volcano. The shore of Klyuchevskoe Lake, called Goryachii Plage (Hot Beach), has a the temperature of 60°C extending for 250 m. Continuing gas and hydrothermal activity at volcano is observed at Paryashii Utes and Paryashii Greben extrusions. These are typical mofettes with a temperature of 80-90°C and emissions of CO₂ with traces of HCL and H₂S.

<http://www.kscnet.ru/ivs/kvert/volc?name=Ksudach&lang=en>.