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Temporary seismic networks on active volcanoes of Kamchatka (Russia)

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We present details of four field campaigns carried out on different volcanoes of Kamchatka in 2012-2015. Each campaign was performed in three main steps: (i) installation of the temporary network of seismic stations; (ii) autonomous continuous registration of three component seismic signal; (III) taking off the network and downloading the registered data.
During the first campaign started in September 2012, 11 temporary stations were installed over the Avacha group of volcanoes located 30 km north to Petropavlovsk-Kamchatsky in addition to the seven permanent stations operated by the Kamchatkan Branch of the Geophysical Survey (KBGS). Unfortunately, with this temporary network we faced with two obstacles. The first problem was the small amount of local earthquakes, which were detected during operation time. The second problem was an unexpected stop of several stations only 40 days after deployment. Nevertheless, after taking off the network in August 2013, the collected data appeared to be suitable for analysis using ambient noise.
The second campaign was conducted in period from August 2013 to August 2014. In framework of the campaign, 21 temporary stations were installed over Gorely volcano, located 70 km south to Petropavlovsk-Kamchatsky. Just in time of the network deployment, Gorely Volcano became very seismically active – every day occurred more than 100 events. Therefore, we obtain very good dataset with information about thousands of local events, which could be used for any type of seismological analysis.
The third campaign started in August 2014. Within this campaign, we have installed 19 temporary seismic stations over Tolbachik volcano, located on the south side of the Klyuchevskoy volcano group. In the same time on Tolbachik volcano were installed four temporary stations and several permanent stations operated by the KBGS. All stations were taking off in July 2015. As result, we have collected a large dataset, which is now under preliminary analysis.
Finally, in August 2015, in framework of big international project KISS, a temporary seismic network consisting of 83 temporary stations were installed around the Klyuchevskoy volcano group in addition to 17 permanent stations of KBGS, covering area 150 km by 90 km. This network will continuously operate until July 2016. We expect that data collected during this experiment will provide information about structure of the crust and upper mantle beneath Klyuchevskoy volcano group and allow us understand the nature of significant variety in composition and behavior of different volcanoes of the Klyuchevskoy volcano group. This experiment was supported by the grant of Russian Foundation of Science RNF 14-47-00002.