

KAMCHATKAN VOLCANIC ERUPTION RESPONSE TEAM (KVERT) PROJECT IN 2002-2004

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KVERT is a collaborative project of scientists from IVS, KEMSD and AVO.

The purpose of KVERT is to reduce the risk of costly, damaging, and possibly deadly encounters of aircraft with volcanic ash clouds. To reduce this risk KVERT collects all possible volcanic information, issues eruption alerts to aviation and other emergency officials, and determinates the color danger code for aviation.

KVERT was founded by Institute of Volcanic Geology and Geochemistry FED RAS in 1993 (since 2004 IVS). Since 2002 Olga A. Girina has been the leader of KVERT. KVERT uses volcano monitoring data and analysis from many scientific groups to track and report on eruptive activity and unrest at Kamchatkan and Northern Kurile (since 2003) Volcanoes. KVERT staff includes some scientists from KEMSD. KVERT work was noted of the Gold medal in 2003 at III International Salon of Innovations and Investments, Moscow.

KVERT assigns the Concern Color Code for aviation using monitoring data: seismic, satellite, visual and video, and pilot reports.

KVERT receives seismic monitoring data from KEMSD. KEMSD maintains 28 telemetric seismic stations to investigate 11 of the most active volcanoes in Kamchatka and North Kurile Islands – the Telemetric Station Laboratory, chief Jaschuk V.V. Seismic data processing and interpretation – the Laboratory for Seismic&Volcanic Activity, chief Senyukov S.L.

Satellite data are provided from several sources and interpreted by scientists from AVO, KEMSD, and IVS. AVO conducts satellite analysis of the Kuriles, Kamchatka, and Alaska as part of it daily monitoring. AVO shares data and interpretation of these images with KVERT staff. IVS interprets MODIS images from State Enterprise DalInformGeoCenter of Ministry of Nature Resources, Russia, since September 2002. IVS obtains visual volcanic information from volcanologist's field trips and pilots. KEMSD (the Laboratory for Seismic&Volcanic Activity) began AVHRR data processing in September, 2002. KEMSD staff collects visual information regularly two times per day from the seismic stations.

Three volcanoes, Klyuchevskoy, Sheveluch and Bezymianny, are under constant surveillance with a video-camera system which makes real-time images of volcanoes available on the Internet (<http://data.emsd.iks.ru/videosvl/videosvl.htm>) . Video cameras were sponsored by IVGG and KEMSD with financial assistance from USAID/OFDA. KEMSD staff develops and maintains these systems.

KVERT works closely with AVO, AMC (Airport Meteorological Center) at Yelizovo Airport and the Tokyo Volcanic Ash Advisory Center (since May 2004) to release timely eruption warnings. Urgent volcanic danger information (seismic data from KEMSD; satellite information from AVO, KEMSD, IVS; and visual data from IVS and KEMSD) is shared among IVS, AVO and KEMSD to confirm volcanic danger by various methods. After confirmation, the urgent information is sending to aviation services at Yelizovo Airport, Branch «Kamchataeronavigatsia» of «State ATM Corporation of Russia», the Tokyo VAAC, and through AVO to aviation authorities in the United States.

During the period of 2002-2004, many eruptions of Kamchatkan volcanoes were potentially dangerous for aviation: four at Bezymianny (2002, 2003 and two in 2004), Klyuchevskoy (2003), Chikurachki (2003), Karymsky (2002-2004) and Sheveluch (2002-2004).