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VS10p-VS10p VS10/VS11/VS31 Probabilistic Volcano Hazard Analysis / Short-Term Forecasting of Volcanic Hazard: So Far, So Good? / Quantifying and Communicating Uncertainty During Volcanic Crisis

Abstract: VS10p-451

Precursors of Kamchatkan volcanoes eruptions

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Kamchatka is one of the most active volcanic regions on the planet. Large explosive volcanic eruptions, in which the ash elevates up to 8–15 km above sea level, occur here yearly. Scientists have revealed many precursors of explosive eruptions detected by different methods. These are rapid increasing of fumarolic activity or increasing number of observable hot avalanches on volcano extrusions which erupt andesite and dacite lavas; deformations on volcano flanks registered by tiltmeters, GPS and satellite data; increasing temperature of volcanic gases and higher concentration of HCl measured on a volcano; etc. Pavel Tokarev (1966, 1976, 1985, 1988) revealed seismic precursors for eruptions of Klyuchevskoy, Plosky Tolbachik, Sheveluch and Bezymianny volcanoes. Progress in space research allowed detecting eruption precursors using data from satellites. Satellite observation is very important because some volcanoes can be unavailable for other types of monitoring. For example, 19 active volcanoes in Kamchatka have no seismic stations. The articles on satellite monitoring of evolution of the 1997 and 1998 eruptions of Bezymianny volcano (Dehn, et al., 2000; Schneider, et al., 2000) are one of the first works in which variations of temperature and size of a thermal anomaly in the area of a volcano are considered to be operative precursor of strong explosive eruption. The long duration satellite monitoring of active Kamchatka volcanoes proved this precursor to be effective not only for Bezymianny volcano but also for volcanoes with different composition of erupted volcanic products.