

## **Overview of caldera-forming eruptions on Kamchatka and South East Asia: genesis, structural position, geochemical variations, effects of eruptions**

Olga Bergal-Kuvikas (Nanyang Technological University / Institute of Volcanology and Seismology, Russia)

In island arc system ignimbrites originated by huge caldera-forming eruptions. These eruptions had influence on all living things and on the climate. South East Asia is home to 745 volcanic edifices, 45 of which have erupted in the past fifty years. Strongest caldera-forming eruptions in South East Asia erupted in historic time. As a result of Toba, Tambora, Krakatau, Rinjani eruptions thousand of man died, climate system changed.

In last decade the scientists from Institute of volcanology and seismology (Petropavlovsk-Kamchatsky, Russia) investigated ignimbrites, calderas and super volcanoes on Kamchatka. At least two super caldera eruptions were detected on Kamchatka: Karymshina and Verhnevachinskaya. Additional, according to tephronological data five large (VEI = 5–7) explosive caldera-forming eruptions took place on the Kamchatka Peninsula during the Holocene. Based on structural position, geochemical variations of ignimbrites, spatial variations of tephra composition we will discuss for process of magma genesis of huge caldera-forming eruptions, effects of eruptions and application for using tephra in paleo environment and climate reconstructions.