

English abstract

The bachelor's thesis on the topic "Supervolcanic eruptions: the caldera eruption of the Toba volcano as an example" summarizes knowledge about eruptions that represented in the past and still represent a threat to life on Earth. Supervolcanoes are volcanoes that have large magma chambers deep below the Earth's surface and have erupted at least once in the past and during this eruption more than 1000 km³ of volcanic material reached the Earth's surface.

The primary problem with explosive super-Plinian eruptions is the pyroclastic rocks that can cover large areas and cause significant ecological damage or loss of human life. Another problem is volcanic gases, which are released during volcanic activity and are made up of a mixture of poisonous gases (sulphur oxides, hydrogen fluoride, carbon monoxide, methane and others). Volcanic earthquakes accompanying volcanic activity can also pose a risk if the volcano is, for example, in a populated area. Extensive lava flows are the primary risk for large igneous provinces.

Secondary manifestations of eruptions, such as tsunamis, floods and disturbance of slope stability, are also dangerous. All these processes associated with eruptions can disrupt the economic and ecological balance of society.

There are about 20 supervolcanoes on our planet, in this work the geology and effects of the caldera eruption of the Toba volcano, the largest known eruption from the Upper Pleistocene period, are described in more detail.