

## **Catastrophe on Kolka Glacier in Northern Caucasus in 2002**

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On 20 September 2002 evening in 50 km from Vladikavkaz – the capital of Northern Osetiya – Alanya Republic a rapid surge of Kolka glacier happened. More than 150 mln. m<sup>3</sup> of mudflow rushed up to Skalistiy Raige, which was on mudflow way wiping everything off his way. In rock burst there was about 120 mln. m<sup>3</sup> of ice and stone and on the place of Kolka glacier its bottom with depth more than 150 m were bared. As a result of catastrophe almost more than 130 people were killed, Nizhniy Carmadon settlement, two recreation camps, sanatorium were destroyed, spa wells were blocked and some km of motor roads and two channels were buried under the ice. Catastrophe in Genaldon valley on 20 September 2002 was caused by the surge of pulsating Kolka glacier, come to unstable dynamic regime earlier expected period as a result of loading several factors: high seismic activity, implementation of Kazbek volcano influence with the increase of heating several parts of the right slope and gas escape of fumarole, accumulation of considerable amount of water due to atmosphere precipitation and as a result of ice melting. Version on signal break of hanging glaciers or rock blocks is not proved by fact data. Break of materials of the hanging glaciers happened during the interval from 14 July till 5 September, and rock breaks happened from the middle of July 2002 till September 2003. Accumulation of critical mass minimum in the upper reached part of Kolka glacier, caused its activization occurred by the beginning of the second decade of August. During the following 5 weeks discharge area were loading by ice and rock, which lead to appearance of highly tense tension within the glacier. Glacier surge started on 28 August 2002, and culmination happened within the period from 13 till 20 September 2002 in tree stages. Gas-hydraulic shock from the bottom to the upper reach zone of the glacier survey as a special discharge mechanism. The glacier start rapid movement from the turn of the valley, as it was in 1902 and 19669. On the strike part of the trough valley the mudflow speed achieve 140-150 km/h.