

Tsunami analysis of the 2006 and 2007 Kuril earthquakes

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The Kuril earthquakes occurred in the northeast of the Kuril arc on 15 November 2006 and 13 January 2007. The tsunami propagated throughout the Pacific Ocean and was observed with the maximum height of about 80 cm at the Miyake Island in the 2006 event. We analyze the tsunami waveforms recorded at the JAMSTEC ocean floor cable systems and compared them with those of the 2003 Tokachi earthquake. For the tsunami on the Kuril earthquakes, the following characteristics can be seen,

- (1) long duration time of tsunami wave for more than half a day,
- (2) arrivals of later phase with large amplitudes,
- (3) clear jump in dominant frequency between the first and later phases.

The observed tsunami waveforms differ significantly in amplitudes and waveforms of later phase between the Kuril earthquakes and the Tokachi earthquake, and the synthetic tsunami waveforms also reproduce these differences even for applying the same source model. We suppose that the seafloor topography in the Pacific Ocean and near source region, i.e. the Kuril Islands, mainly cause their wave disturbances and make clear differences in waveform between these events.