Geophysical Research Abstracts,
Vol. 10, EGU2008-A-05408, 2008
SRef-ID: 1607-7962/gra/EGU2008-A-05408
EGU General Assembly 2008

Possibility of strong earthquake and tsunamis in zone of residual seismic gap in region of Central Kuriles

L.Lobkovsky (1), B.Kisel'man (2) and R.Mazova (2)

(1) P.P. Shirshov Institute of Oceanology RAS, Moscow, Russia, (llobkovsky@ocean.ru), (2)Nizhny Novgorod State Technical University, Nizhny Novgorod, Russia

In the work it is demonstrated the possibility of appearance of tsunami from seismic source located in north-east part of seismic gap of the Central Kuriles, with localization of the epicenter before deep-water Kruzenshtern straight. The given work is based on preliminary study in frames of keyboard model of seismic source performed by us for hypothetical source located along whole seismic gap zone from Bussol straight to Kruzenshtern one and published by us half-year before the realization of events of autumn 2006: 30 September 2006, 15 November 2006 and 13 January 2007 [1,2]. The numerical simulations carried out just after tsunamigenic earthquake 15 November 2006 with using of real data on localization of earthquake epicenter confirm both the adequateness of the concept used and suitability of keyboard model to describe complex phenomena in seismic source generating tsunami, part of which energy was directed through deep-sea Bussol straight to the Sea of Okhotsk [3]. In given work it is considered generation of tsunami wave by hypothetical source located in zone of residual seismic gap of the Central Kuriles. The maximum tsunami height distribution generated by such seismic source is calculated. The mareograms for concrete coastal points are obtained. The amplitude-frequency spectra for this points as well as transient functions for neighbour points are presented. The comparison of possible wave height along the Sakhalin coast for location of seismic source near Kruzenshtern and Bussol straits is performed. It is demonstrated that at the same earthquake magnitude, in first case, the wave runup heights at north-east part of Sakhalin island can be essentially larger as compared with those in second case (corresponding to the event of 15 November 2006). The possible maximum wave heights distribution for Japan islands

Honsyu and Hokkaido is also presented.

[1] Lobkovsky L. I., B. V. Baranov, R. Kh. Mazova, L. Yu. Kataeva Implications of the seismic source dynamics for the characteristics of a possible tsunami in a model problem of the seismic gap in the Central Kurile region, Russ.J.Earth Sci., V.8,ES5002,doi:10.2205/2006ES000209 http://dx. doi. org/ 10.2205/2006ES000209 (2006). [2] Laverov N., Lobkovsky L., Baranov B., Mazova R., Karp B. Catastrophe at Sumatra: Lessons and Prognosis // Science in Russia, No.1, 4-11, 2007. [3] Mazova R., L.Lobkovsky, B.Baranov, L.Kataeva, Morozova A. Realized earthquake and tsunami prognosis for Kurile-Kamchatka seismic gap // Geophys.Res.Abstr. of EGU General Assembly, Vienna, Austria, 15-20 April 2007, V. 9, 10245, 2007.