Geophysical Research Abstracts
Vol. 13, EGU2011-5716, 2011
EGU General Assembly 2011
© Author(s) 2011

Numerical simulation of possible earthquake-generated tsunami in Komandorskiy seismic gap, western Aleutian arc

Raissa Mazova (1), Boris Baranov (2), and Karina Dozorova (2)

(1) Nizhny Novgorod State Technical University, Nizhny Novgorod, Russia (raissamazova@yandex.ru) , (2) P. P. Shirshov Institute of Oceanology, Russian Academy of Sciences, Moscow, Russia

The Komandorskiy seismic gap is located at the most western Aleutian Island Arc between rupture zones of seismic events in 1917 and 1965. Historical data on the recurrence time of great earthquakes within this seismic gap are absent. The observation data show that great earthquakes did not occur in this region more than 100 years and this time period exceeds the recurrence time in 30-40 years for great earthquakes in central part of the arc. Therefore we suggest that stress magnitude could be close to critical one in said region. In this connection, the tsunami modeling from possible earthquake source in the Komandorskiy seismic gap has certain interest.
The geodynamics of the western Aleutian Arc is similar to that of north-western section of Sunda Island Arc. In this connection, the character of movements in the source of possible earthquake was modeling according to scheme, which was used for numerical simulation of propagation of tsunami waves induced by catastrophic earthquake on 2004 in Indian Ocean. It was considered a model source with dimension equal to 600 km, comprising 9 blocks, the magnitude of possible earthquake was taken to be M=8.5. The block movement character was correspondent to possible one, determined by earthquake magnitude, taken at numerical simulation. There were considered several scenarios of movement of blocks in seismic source as well as generation and propagation of tsunami wave in Pacific Ocean, and wave characteristics along islands and continental slopes. The comparative estimations of tsunami wave run-up character at various coasts and possible characteristics of these waves on the beach were performed.