

## Magnitudes of the Aleutian Tsunamis in Nov. 2003 and Jun. 2011 – Deviation of Tsunami Heights on the Pacific Region

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The Aleutian earthquakes occurred on November 17, 2003 (51.40N, 178.60E, Mw7.7) and June 24, 2011 (52.008N, 171.860W, Mw7.2), US accompanying with tsunamis. The 2003 tsunami was observed in the whole Pacific tidal stations (double-amplitude 52cm at Shemya). Semi-amplitude of the 2011 tsunami was 6cm at Adak. Source area of the 2003 tsunami estimated by the inverse refraction diagram with the aftershock area, lies along the depth counter of 3000m, extending 130km located in the source area of the 1965 tsunami. The source of 2011 lies 60km in the S-N direction in the 1957 tsunami source. Judging from the author's method based on the attenuation of tsunami height with distance, magnitudes of tsunamis in 2003 and 2011 are determined to be  $m=1$  and  $m=0$ , respectively. It is well known that the Hawaiian Islands have suffered severe damage by the 1946 Aleutian tsunami, and Crescent City, California also inundated by the 1964 Alaska tsunami.

The locality of tsunami height deviation from the average tsunami magnitude is discussed for the five Aleutian-Alaska tsunamis. The deviated magnitude values in California, Chile and Hawaiian Islands are the 1-3 grades (tsunami height- 2-to times) larger than the mean magnitude. Tsunami heights in Japan are the mean values or less. The deviated heights at each region are different from the epicenter location, because of the directivity effect.

Keywords: Aleutian-Alaska tsunamis, Tsunami magnitude, Directivity of tsunamis