

## Effects of tsunamis along the Okhotsk sea coast due to great Kurile earthquake

# Kei Ioki[1]; Yuichiro Tanioka[2]

[1] ISV, Hokkaido U; [2] Hokkaido U

On 15 November 2006, a great underthrust earthquake occurred off the Kurile Islands ( $M_w=8.2$ ). Tsunami generated by this earthquake propagated through the Pacific and caused some damages in the port of Crescent City located in the west coast of USA. In Japan, the tsunami warning was issued along the coast of the Okhotsk Sea in Hokkaido by Japan Meteorological Agency (JMA). However, the observed tsunami heights along the coast were less than 20cm.

In this study, we assumed four different fault models near the source region of the 2006 Kurile earthquake, and carried out the numerical simulation of tsunami to estimate the tsunami heights at six tide gauge stations along the coast of the Okhotsk Sea, Wakkanai, Esashi, Monbetsu, Abashiri, Shari, and Utoro.

As a result, we found that the tsunami heights along the coast of the Okhotsk Sea became about 1 m if the rupture extends to the transitional thrust zone located at the down-dip side of the coupled zone near the source region. The tsunami heights along the coast were even larger if the rupture area moves toward southwest direction because the large tsunami passes through the deep ocean located between Urup and Shimushir Islands efficiently. In addition, we found that the huge earthquake with  $M_w 9$  occurred near the source region of the 2006 Kurile earthquake can generate the tsunami height of about 2m along the coast of the Okhotsk Sea.

This study concludes that the 2006 Kurile earthquake could generate large tsunami (more than 1m) along the coast of the Okhotsk in Hokkaido, as JMA predicted, if the rupture extends to the down-dip limit of the plate interface in the Kurile subduction zone.