Tsunami wave analisys of the 2008 tokachi-oki earthquake

Toshihiro Ueno[1]; Yuichiro Tanioka[2]

[1] ISV; [2] Hokkaido U

On 11 September 2008, Tokachi-oki earthquake(Mw6.7) occurred off the southern coast of Hokkaido. This earthquake generated tsunamis observed at tide gauges located along Pacific coast of Hokkaido, Pacific coast of Aomori and Iwate.

We assumed eight fault models around the epicenter of the earthquake and numerically computed tsunami propagation. We compared observed waveforms to computed waveforms at three tide gauges located at Erimo, Hanasaki, Urakawa to estimate which model is the most consistent.The best fault model was found to be 30-km-long, 20-km-width and located southwestward from the epicenter. The slip amount of the fault model was estimated to be 1m. The seismic moment(Mo) was calculated to be 2.5∗10∗∗19 Nm by assuming that the rigidity of 4.0∗10∗∗10 N/m∗∗2.

We compared the best fault model to co-seismic and after-slip distribution estimated by previous works. As a result, rupture area of 2008 Tokachi-oki earthquake located just between the large co-seismic slip region and the large after-slip region.