

GPS and precise gravity measurements at Erimo peninsula closest to the 2003 Tokachi-oki Earthquake

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Mw 8.1 earthquake occurred on September 25, 2003 in the off southeast coast of Hokkaido, Japan. Since 2000 we have conducted high-speed sampling/campaign GPS measurement and precise gravity survey at Erimo Peninsula where is the closest to the epicenter. Strong ground motion recorded by GPS at the point of Erimo Peninsula where locates just above the second asperity of the earthquake recorded two major pulses as much as about 60cm on the EW component. Synthetic seismogram from a similar fault model by Yamanaka and Kikuchi (2003) would predict the amplitude of the second pulse about one half of the observed. Synthetic NS component from the GSI fault model (2003) would not consistent with our observation. This suggests that our observation closest to the earthquake would give the insight into the detail source process of the earthquake. Static deformation at the point of Erimo Peninsula is consistent with the GSI fault model but not with Yamanaka and Kikuchi model. Static analysis of our GPS measurement evidently describes the continuous afterslip on the source region until December as well as the co-seismic displacement as much as about 60cm on the EW component.