

# Ground Motion and Rupture Process of the 2003 Tokachi-Oki Earthquake Obtained from Strong Motion Data of K-NET and KiK-net

# Ryou Honda[1]; Shin Aoi[1]; Nobuyuki Morikawa[1]; Haruko Sekiguchi[2]; Takashi Kunugi[1]; Hiroyuki Fujiwara[1]

[1] NIED; [2] Active Fault Research Center, GSJ/AIST

A great earthquake, named the 2003 Tokachi-Oki earthquake, occurred at southern Kuril subduction zone on 26 September 2003, 4:50 JST (41.7797N 144.0795E; JMA). Its ground motion was recorded at 655 stations of nationwide strong motion networks, K-NET and KiK-net. The maximum peak ground acceleration, 9.88 m/s/s (= 988 gal), was observed at station HKD100 and large amplitudes (larger than 2.0 m/s/s) were observed in a wide area of Eastern-Hokkaido. We estimated the rupture process from strong motion data of 15 stations with multi-time linear waveform inversion method.

We assumed a fault plane model of 140 km x 160 km and the strike and dip angles of our fault model are N246E and 18 degrees, respectively, on the subducting Pacific Plate.

The estimated total slip distribution consists of two major slip areas; (a) around epicenter and (b) the north-west part of the fault with the maximum slip of 5.9 m. Relatively small slip velocity and long duration of slip time functions are obtained at region (a). Our estimation of the total seismic moment is  $2.9 \times 10^{21}$  Nm which corresponds to  $M_w = 8.2$ .