

## Long-period ground motion simulations in the Ishikari and Yufutsu plains for the 1968 Tokachi-oki earthquake

# Kunikazu Yoshida[1]; Haruko Sekiguchi[1]; Masayuki Yoshimi[1]; Haruo Horikawa[1]

[1] Active Fault Research Center, AIST, GSJ

We have simulated long-period ground motions in the Ishikari and Yufutsu plains for the 1968 Tokachi-oki earthquake. Long-period ground motions, that was occurred during the 2003 Tokachi-oki earthquake and damaged many oil storage tanks, should be also generated in these plains during the 1968 Tokachi-oki event. Great earthquakes have occurred in the source region of the 1968 Tokachi-oki event (Sanriku-oki hokubu or Amoroiken toho-oki region) with a recurrence period of about 100 years. The probabilities that the next earthquake within the region will occur within the next 50 years are 30-40% (Headquarters for Earthquake Research Promotion of Japan, 2008).

We simulated a simple source model to the 1968 Tokachi-oki earthquake (M7.9) and computed the ground motions using the basin structure of the Ishikari and Yufutsu plains (Yoshida et al. 2007, Annual Report on Active Fault and Paleoequake Researches). Due to simplicity of the source model, the resultant ground motions lack a frequency component of 0.1-0.2 Hz. Although the source model does not valid for a quantitative analysis, the result of the simulation shows that large amplitude and long duration of the long-period ground motion were yielded in these plains, like the 2003 Tokachi-oki event. However, the distribution of the large amplitude area are somehow different from that calculated for the 2003 Tokachi-oki event (Yoshida et al., 2007, IUGG). Modifying source models in order to improve an agreement between the observed and calculated waveforms, we will evaluate site response of the Ishikari and Yufutsu sedimentary basin.