ACTIVE FAULTS ON SAKHALIN ISLAND, RUSSIA

1SUZUKI, Y., 2TSUTSUMI, H., and 3STREL'TSOV, M. I. 1Aichi Prefectural University, Japan; 2Kyoto University, Japan; 3I.M.G.G.,Yuzhno-Sakhalinsk, Russia

Plate tectonic setting has been not yet clarified in the far-east Asian region, therefore, the knowledge on the distribution of active faults and on the slip rates have much importance, not only for the active tectonic research but also for the estimation of the seismic hazard.

We have prepared an active fault map of Sakhalin, Russia, based on interpretation of aerial photographs and satellite images. Major active structures include 110-km-long active faults along the western margin of the Yuzhno-Sakhalinsk Lowland in southern Sakhalin and 150-km-long active faults along the western margin of the Poronaysk Lowland in central Sakhalin. These active faults are parallel to but are located as far as 10 km east of the Tym-Poronaysk fault. Tectonic geomorphic features along these active faults suggest that they are west-dipping reverse faults. The vertical component of slip rates for these faults are 0.3 mm/yr in southern Sakhalin and 1.0-1.5 mm/yr in central Sakhalin. The net-slip rates could be much greater because the faults are low-angle reverse faults. If these faults rupture along their entire length during individual earthquakes, the earthquakes could be as great as M8. In the northern part of Sakhalin, we have identified a series of right-lateral strike-slip faults, including the 1995 Neftegorsk earthquake fault. The slip rates for these faults are estimated at 4 mm/yr. The right-lateral shear in northern Sakhalin and east-west compression in central and southern Sakhalin may reflect relative plate motion in far-east Asian region.