# Relation between translation and rotation amplitudes of earthquake

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We have observed earthquake movements by translation and rotation seismometers at Obihiro, central Hokkaido, Japan. Obihiro is situated in the central part of Tokachi plane. The relation between translation and rotation maximum amplitudes of earthquakes can be shown as;
$\log_{10}(A_{Rot}) = M \log_{10}(A_{Trans})$    where ARot and Atrans are amplitudes of rotation and translation amplitudes. At Obihiro,   The amplitudes of rotation amplitudes distribute between 1 - 30 mrad/s, and of translation amplitude, 10-250*10-3cm/s.  M is obtained as to be 1.2 .

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We have observed earthquake movements by translation and rotation seismometers at Obihiro, central Hokkaido, Japan. Obihiro is situated in the central part of Tokachi plane where crustal structure rather homogeneous compared from MUJ where rotation movements had observed and showed nonlinear relation between translation and rotation amplitudes. MUJ situated in the Hidaka mountains where complicated crustal structure had analyzed (Ozel et al., 1998; Iwasaki et al., 1999). The relation between translation and rotation maximum amplitudes of earthquaes can be shown as;
$\log_{10}(A_{Rot}) = M \log_{10}(A_{Trans})$    where A Rot and A trans are amplitudes of rotation and translation amplitudes.  We had already shown M=0.84 and 1.4 for earthquakes of Usu Volcano and observed at MUJ.  At Obihiro,   The amplitudes of rotation amplitudes distribute between 1 - 30 mrad/s, and of translation amplitude, 10-250*10-3cm/s.  M is obtained as to be 1.2 .  There is a tendency that rotation amplitudes for coda waves are about two times larger than those of body waves.  We think that rotation movements of earthquakes amplified by heterogeneous structure.