

Do interplate earthquakes occur along plate boundary? : OBS seismicity and MCS image off Sanriku

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In the northern Japan trench subduction zone, a clear seismic section of the interplate seismogenic zone has obtained by our recent MCS survey. In adjacent area, there was an interplate swarm activity in 1992. We relocate these events, observed by a temporal OBS network, assuming an inhomogeneous seismic velocity structure revealed by the seismic survey. By taking the inhomogeneity of the structure into account, systematic mislocations were reduced and the obtained hypocenters concentrate along the plate boundary imaged by the MSC survey. Meanwhile, our data also strongly suggests that several earthquakes occurred within the subducting oceanic crust. These intra-plate earthquakes during the interplate seismic activity may reflect stress change due to interplate coseismic slip.