

Paleoseismological survey on the seaward extension of the active fault along the western margin of the Hakodate Plain

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Active reverse fault zone including the Oshima-Ono Fault and the Tomikawa Fault locate between the Kamiiso Hills and Hakodate Plain. Late Quaternary marine terraces in several levels are distributed along the southwest coast of the Hakodate Plain. Their heights of marine terraces show the amount of uplift since the late Quaternary. We have conducted an integrated survey of the coastal area of Hakodate Bay, as a part of the 2011 offshore active fault survey project funded by MEXT, in order to understand distribution and paleo-seismicity of offshore active fault and fold in Hakodate Bay. The survey comprises high-resolution multichannel sonic survey, ultra-high-resolution single-channel sonic survey and paleoseismological vibro coring. The stacked time sections show that the submarine active faults with west-side-up extend NW-SE to NS trend in the Hakodate Bay. These characteristics of the submarine active faults suggest that the faults are southern extension of the Tomikawa Fault. Precise interpretation of the sonic profiles tied with core leads to an inference that the paleoseismic event occurred during the Holocene.

Keywords: offshore active fault, Hakodate Bay, high-resolution sonic survey, coring, Paleoseismicity