

T146-004

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Migration of forearc basin due to the subduction erosion along the Japan Trench

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Many subduction zone earthquakes have been occurring under the 100-150 km wide forearc slope along the Japan Trench, however, there is no clear relationship between the source areas of the earthquakes and geologic structure of the slope. The main tectonic process along the plate boundary underneath the forearc wedge is subduction erosion, which have caused continuous and wide subsidence of the forearc slope, but it is not clear how the tectonic process relates to the seismicity and major earthquakes along the Japan Trench.

To investigate the detailed structural movement, we conducted high-resolution seismic profiling survey using R/V Kairei of JAMSTEC. The profiles we obtained showed that the forearc basin has been migrating landward, which can be attributed the migration of the zone of active subduction erosion. We would discuss the relationship between the seismicity and the tectonic process inferred from geologic structure.