

## Detailed fault structure and Holocene activity of Hinagu Fault Zone at Yatsushiro Sea, Kyusyu, Japan

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Offshore active fault survey was executed on the offshore extension of Hinagu Fault Zone at Yatsushiro Sea, Kyusyu, Japan. The Hinagu Fault Zone is a dextral strike-slip fault lying NE-SW, which relatively downthrows the NW block. To evaluate the activity of the offshore fault, we obtained 2 sedimentary cores at both side of the fault. These cores penetrate the latest Pleistocene to Holocene marine succession. By means of high-resolution multi-channel seismic reflection surveys, we obtained 3D seismic data at a rectangle area of 1 km by 2 km.

Based on analysis of offshore sedimentary cores, we clarified that the marine succession consists of bay-floor or prodelta mud and has developed during transgressive (10 ka - 8 ka) and highstand (8 ka - present) stage. The age-depth curves of the cores indicate that sedimentation at the bay floor have continued regularly since 10 ka. 2D seismic-profile shows that vertical displacements of the fault are accumulated in the marine succession and indicates that at least 4 faulting events have occurred during the Holocene.

Seismic time-slices generated from the 3D seismic data enable us to map plan distribution of offshore fault system in detail. The target fault lies NE-SW and steps to the right by ca. 300 m. At the stepping area, we recognize at least 2 faults (lying W-E) accompanying a "Sag" zone. The plan distribution of faults above should represent the extensional duplex structure associated with right stepover of dextral strike-slip fault system.

Keywords: Hinagu Fault Zone, dextral strike-slip fault, fault stepover, offshore boring survey, 3D seismic survey