

Discussion on the relationship between the shallow geological condition around the northern Okinawa trough area and a magnitude (M) 7.1 earthquake offshore west of Satsuma peninsula on November 14 2015

\*Mitsuhiro Oikawa<sup>1</sup>, Azusa Nishizawa<sup>1</sup>, Daishi Horiuchi<sup>1</sup>, Chiaki Okada<sup>1</sup>, Kentaro Kaneda<sup>1</sup>

1.Hydrographic and Oceanographic Department, Japan Coast Guard

On November 14, there was a magnitude (M) 7.1 earthquake offshore west of Satsuma peninsula. JMA reported the CMT mechanism of the earthquake was a strike-slip fault type with NW-SE direction of its tension axis. But before the earthquake, no earthquake over M7 has been reported in the area. Japan Coast Guard conducted multi-channel seismic reflection and wide-angle refraction seismic surveys around the area before the earthquake. The time migration image shows several normal faults accompany with topographic gaps of the top of the sediment layers. The direction of the faults is NE-SW which corresponds to the tension axis of the earthquake. The general trend of the Okinawa trough, NNE-SSW, is different to the normal faults direction, but it looks similar to the general direction of topographic highs that are scattered in the northern Okinawa trough. We are going to discuss the shallow geological condition and the tectonics around the area using the result of our surveys.

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