

Grain characteristic of Tsunami deposit in Hirota bay

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The study of onshore features for tsunami impact is well researched, but offshore is only a few researches. In this presentation we will show about characteristics of lithofacies and grain features about 2011 Tsunami deposit using Sub Bottom Profiler (SBP), Vibration Core Sampler (VCS) and Grainsize analyzer.

We took the columnar core at water depth from 8 to 30 m. The columnar cores were able to sectionalize into mainly two units by lithofacies, Unit1 (sand layer) and Unit2 (muddy layer) from the top. Yokoyama et al. (2014) estimated Unit1 were 2011 Tsunami deposit and Unit2 were normal sediment in this bay.

We estimate U1 distribution with thickness approximately 7-80 cm. Change of U1 thickness about east and west side were grow thick from coastal area to water depth 16-25 m, and grow thin from water depth 16-25 m to deeper side. East side drastic grow thin than the west side.

We making correlation chart using median diameter and sorting value of core sample and beach sand, and using for infer the origin of Tsunami deposit. U1 and U2 distribute clearly different area. U1 distribute during the U2 and beach sand, it means the possibility of U1 have originated as both. Most coastal side core sample shown the same value with Takatamatsubara beach sand. Sub unit of U1 shown sorting were almost same area, but grain size become smaller from bottom sub unit (U1a) to upper (U1b). U1c were located in U2 area, it shown the possibility of U1c have originated as U2. Combination of Lithofacies, Grain size analysis and correlation median size and sorting value have possibility about estimate flow mechanism and origin of Tsunami deposit.

Keywords: Tsunami deposit, Sanriku coast