

Character of tsunami deposit using by grain size features and chemical composition

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The recent 2011 Tohoku earthquake affected Tohoku area and coastal area of Pacific coast were strongly damaged by Tsunami. A lot of bay of Sanriku coast became deposited new sediment composed by sandy deposit and estimate of the sedimentation model about Tsunami deposit are carried out at coastal area. But, we didn't understand about origin of Tsunami deposits at coastal area. In this study, we will estimate the origin of tsunami deposit using by grain size features and chemical composition.

The columnar core samples were able to sectionalize into mainly two units by lithofacies, Unit1 (sand layer) and Unit2 (muddy layer) from the top. We infer the Unit 1 were the 2011 tsunami deposit and unit2 were pre event sediment in this bay. Unit1 were able to sectionalize into some sub-units by lithofacies and grain size analysis.

Correlation diagram of median diameter and sorting value show that Unit1 is different from Unit2 in distribution, and Unit1 distribute between Unit2 and coast sand. So, Unit1 are estimated to origin in Unit2 and coast sand. Correlation diagram of $\text{Al}_2\text{O}_3/\text{SiO}_2$ ratio and TiO_2 show that Unit1 distribute three different areas, and these three area correspond to each subunits. Grain size features and chemical composition have possibility about estimate the source of supply field of tsunami deposits.

Keywords: Tsunami deposit, the 2011 Tohoku-oki earthquake and tsunami, Sanriku coast