

Grain size feature of 3.11 Tsunami origin sediment in Sanriku coast around Miyagi to Iwate pref.

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The recent 2011 Tohoku earthquake affected Tohoku area and coastal area of Pacific coast were strongly damaged by Tsunami. The seabed at local area of Sanriku coast have environment change (ex. erosion of seabed and become deposited new sediment etc.) by Tsunami. A lot of bay of Sanriku coast became deposited new sediment composed by coarse-grained material (called Type1, ex. Otsuchi, Toni, Okirai and Hirota bay etc.) and a few bay became deposited fine-grained material (called Type2, ex. Onagawa bay etc.). In this presentation we will show about characteristics of grain feature by each type bay. We took the columnar core at Otsuchi bay, Hirota bay and Onagawa bay. Otsuchi bay and Hirota bay belong to Type1, and Onagawa bay belong to Type2.

[Columnar core lithofacies]

Type1 (composed by coarse-grained sediment): Both bay core were able to sectionalize into mainly two units, Unit1 (sand layer) and Unit2 (mud layer) from the top. We estimate Unit1 were 3.11Tsunami deposit and Unit2 were normal sediment in this bay use Yokoyama et al. (2014) as the base. And several samples have Unit3 (sand layer) below the Unit2. Unit3 have possibility of event sediment by feature of lithofacies. Type2 (composed by fine-grained sediment): Onagawa bay core were able to sectionalize into two units. Unit1 composed silt~fine sand with coarse sand on the bottom and Unit2 composed silt characterized by bioturbation. We estimate Unit1 were 3.11Tsunami deposit and Unit2 were normal sediment in this bay.

[Grain size analysis]

We making correlation chart using median diameter and sorting value of core samples and using for infer the origin of Tsunami deposit.

Type1 : 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. U3 distribute same area of Unit1. So, Unit3 make by similar event of Unit1.

Type2 : Bottom of Unit1 samples and U2 distribute clearly different area. However, Type2 samples not clearly classification than Type1 samples.

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