

Origins of marine sediments in Otsuchi area

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Sediments and rocks of the around Otsuchi bay were analyzed in order to consider the origin of marine sediment that the at Otsuchi bay area. Rivers such as Otsuchi, Kozuchi and Unosumai flow into Otsuchi bay. Geological around Otsuchi bay are mainly massive granodiolite and accretionary complexes. The marine sediments collected by grab sampler and Multiple corer. (these samples are collected by Tohoku Ecosystem-Associated Marine Sciences:KS15-12) Samples are analyzed by the method at grain size analysis, X-ray Fluorescence analysis(XRF) and observation by SEM and stereomicroscope. There was a difference in grain composition ratio and XRF value in three rivers from the result of observation. Especially the Nb / TiO₂ ratio clearly differed in each of the three rivers. From Nb/TiO₂ ratio results, the following can be considered (1) Sediment's composition of 10km off and mouth of Otsuchi bay are the same in range from the North to the South 8km. It means the origins of these sediments are transported from the north area. (2) The core a part of Otsuchi bay are affected by granite origin sediment. (3) Unosumai river sediments and other sediments are mixed from Otsuchi bay mouth to 10km off. For the analysis in vertical direction of the cores, XRF, grain size analysis and observation by SEM was used. From these results, Tsunami deposit was recognized at upper part of these cores.

Keywords: Otsuchi bay, marine sediment, Unosumai river, Tohoku Ecosystem-Associated Marine Sciences