

Evaluation of transportation history of turbidite sand grains using OSL dating method

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Turbidite is often observed as a sandy layer intercalated in muddy pelagite-hemipelagite. Earthquake and flood are considered as main causes of turbidite deposition. Occurrence and transportation processes of seismo-turbidite differ with those of flood-induced turbidite. We attempt to apply optical stimulated luminescence (OSL) dating method into evaluation of transportation processes of turbidites.

The OSL method evaluates the amount of natural radiation energy accumulated in mineral grains, which is released by sunlight stimulation. As a preliminary experiment, we measured OSL ages of potassium feldspars from two turbidite layers obtained from the Tenryu Deepsea Channel (KT98-1-P2, R/V Tansei-maru) and obtained the equivalent doses using many aliquots from each layer. Measurement was carried out with Risoe TL/DA-15-C/D at the Department of Geography, Tokyo Metropolitan University.

We introduce measurement method and the result of the OSL dating, and then, discuss prospect of the study.