

## Rock magnetic analyses for understanding of depositional processes of turbidites induced by large earthquakes in Japan Trench

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Ikehara et al., 2016 revealed that the thick turbidite depositions corresponding to 2011 and the other two historical large earthquakes were archived in Japan Trench (JPT) basins. It is then crucially important to determine the distributions of those event deposits in space and time for the JPT paleoseismology. In order to understand the details of their depositions as robust evidences for the large earthquake occurrences, rock magnetic analysis was applied to measure variation of the turbidite intervals. Magnetic granulometry provides the information of sediment depositional processes. Particularly monotone fining upward of magnetic grain size in a few meter scales is found as the most unique feature in the studied sediments. Magnetic grain analysis in detail indicates grain fining occur in various modes. Those variations seem to be linked to respective seismo-events. Additionally anisotropy of magnetic susceptibility (AMS) were measured to detect settling process of particle grains form turbidity flows in the intervals of thick turbidites. Generally dominant lineation of AMS is recognized as not single direction in each event interval while grain size decrease upward monotonously. Some lineations reoriented by paleomagnetic declinations are oblique to the strike of JPT trench. This observation may suggest the complex flow in the confined and elongated basins in JPT. It is considered that the variations of magnetic grain size and fabric data are useful to understand the depositional processes of thick turbidites.

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