[JJ] Evening Poster | M (Multidisciplinary and Interdisciplinary) | M-IS Intersection

[M-IS11]tsunami deposit

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The 2011 off the Pacific coast of Tohoku Earthquake and tsunami have an influence on the development of tsunami deposit research. After the tsunami, a lot of findings have been reported on various research fields. However, identification criteria of the tsunami deposit are not yet established. Moreover, it is still uncertain how to use the tsunami deposit in the risk assessment. In this session, we welcome researches from all aspect of sedimentary records of modern and paleo tsunamis both onshore and offshore, and numerical and experimental modeling studies for risk assessment. In addition, we also welcome other event deposits, such as flooding and storm surge, that they are considered to be important for discrimination of tsunami deposit.

[MIS11-P10]Use of microfossils analyses in tsunami deposit survey

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We show two case studies using a combination of several microfossil analyses in tsunami deposit survey in Iwate and Fukushima Prefectures. Microfossils living in particular salinity zones or water temperatures (e.g. diatom, foraminifera, radiolaria, ostracoda, and calcareous nannoplankton) are usually used as the indicators of the paleo-environment (e.g. Sawai et al., 2015; Hussain et al., 2010; Kortekaas and Dawson., 2007; Hayashi et al., 2014; Goto et al., 2015; Kase et al., 2016). Tsunami deposit surveys have been usually conducted on land behind the coastal area such as alluvial plain or back marsh, and we need to distinguish autochthonous deposit from event deposit. Microfossils can be utilized as an indicator of autochthonous/allochthonous deposit from geological sample.

In Numanohama marsh in Taro Otobeno, Miyako City, Iwate Prefecture, we identified 17 event layers with sedimentary characteristics for tsunami deposits during the past 2,000 years (Goto et al., 2015, 2017, *submitted*). In order to estimate changes in the sedimentary environment, we counted diatom and coccolith. Diatom assemblages indicate that the sedimentary environment (diatom zones) changed after the deposition of event layers which can be correlated with historical large tsunamis. High appearance of coccoliths in the event layer showed that the seawater inflowed landward such as tsunami/storm event.

In Idagawa lowland in Minami Soma City, Fukushima Prefecture, we identified 7 event deposits during the past 3,800 years (Kusumoto et al., *submitted*). Autochthonous deposit can be clearly distinguished from event deposit by using three types of microfossils/organic remains; diatoms, coccoliths, and sponge spicules from the geological column samples with several meters. Among them, abundant coccoliths well corresponds to event layers. Then the appearance of silicoflagellates from autochthonous deposit indicates that the survey area was connected to the open sea at that time.