

## Lateral variation of mud clasts in onshore tsunami deposits

\*Yasuhiro Takashimizu<sup>1</sup>, Daichi Ito

1. Niigata University

The lower part of the 2011 Tohoku-oki tsunami deposits in the region of Odaka in the Minami-Soma city, Japan well contains many mud clasts. This study focused on the features of mud clasts taken from two sites: the Z07 site which is 760 m from the coast and the T07 site which is 1140 m from the coast.

Sedimentary analyses of both mud clast layers were conducted and lateral variations in the mud clasts were examined. The mud clast section of site T07 was composed of one unit, while site Z07 was composed of three units, which were units 1, 2, and 3 in ascending order.

The basal surface of the mud clast section of the site Z07 sample was generally flat and inclined slightly seawards. It displayed small and circular-shaped reliefs. However, the surface of the site T07 sample displayed a strongly irregular surface with clear reliefs of approximately 5 cm in depth.

The median grain size of the mud clasts of site T07 was  $-2.9 \phi$  and the mud clast grain sizes of Z07 were  $-1.7 \phi$ ,  $-2.5 \phi$ , and  $2.6 \phi$  for units 1, 2 and 3, respectively. The median grain size of the mud clasts of T07 was  $-2.9 \phi$  and for the mud clasts of Z07 were  $-1.7 \phi$ ,  $-2.5 \phi$ , and  $-2.6 \phi$  for units 1, 2, and 3, respectively. This indicated that the mud clasts of T07 were coarser than the Z07 sample. Conversely, the roundness parameter ( $R$ ) of site T07 was 0.74 and for site Z07 it was 0.74, 0.78, and 0.74 for units 1, 2, and 3, respectively. There were no clear differences between those units, although unit 2 of site Z07 displayed a slightly higher value. Moreover, the relationship between grain size and roundness did not show a clear correlation. From the results of the sedimentary analyses, it was confirmed that mud clasts were not fined and abraded under the tsunami inflow at sites Z07 and T07. The inflow at site T07 had a more strongly eroded ground surface than site Z07.

Keywords: tsunami deposits, mud clasts, roundness