

Sedimentary facies of Tsunami runup in Shinano river deposits

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We could find a Tsunami event deposit in the Shinano River lower reaches area.

This study area is near the Chitose Oohashi of Niigata City. This area is liquefaction damage was big at the time of Niigata earthquake. We collected strata by using a fixed direction sampler Geoslicer of the length 8m. As a result of the investigation, we found that it consisted of river deposits (mainly, flood deposits) under the artificial ground. The paleo-currents directions of Ripple laminations in the flood deposits are from the upper reaches to the lower reaches. However, in these river deposits, characteristic sedimentary facies were found (the following, event deposit). The event deposit consists of fine sand mainly, and is characterized by climbing ripples with the mud clast of the size 5mm. And the mud clast is observed at random on the foreset lamination of ripples. Paleo-currents direction of these climbing ripples are from the lower reaches to the upper reaches.

In this area, it is impossible to form a climbing ripple with a flood tidal current, because the tidal range is small. The current with a climbing ripple to the upper reaches is possibility of the Tsunami runup deposits. These stratum have deformation structures caused by the liquefaction and flowing, which could be done at the time of Niigata earthquake in 1964, and it shows this stratum accumulated before that. And probably, a flood deposit can be thought to accumulate before the completion of an Ohkouzu Diversion Channel in 1922.

As a result, the event deposits can be thought to be the Tsunami runup deposits accumulated in the Shinano River before 1922.