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Tsunami deposit survey at Zaimokuza, Kamakura City, Japan (a progress report)

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The Kanagawa Prefectural Government has been conducting its first Tsunami deposit survey on the shore of its territory since 2011. Here we will give an interim report on our research at Kamakura, where has been attacked by several tsunamis as known from historical literatures.

The survey was held in Zaimokuza area, which is known as a port developed behind the beach ridge in the Middle age. We excavated ten boreholes in four localities in the area. The depths are 5-6 meters. The general stratigraphy obtained from the investigation is summarized as follows in ascending order.

The lowermost stratum obtained in our investigation is silty fine sand (Unit A). This layer is highly water-bearing, bluish gray colored and massive sand containing molluscas that represent sublittoral environment such as Macoma sectior, Veremolpa micra or Rhinoclavis kochi. The facies and the Mollusca assemblage implies this layer is formed in more closed bay than the present bay.

Unit A is overlain by a series of sediments that include river gravels, sand, and silty sand (Unit B). The gravels are rounded but not flat and composed of mudstone and kawarake or ancient earthenware. The mudstone was widely quarried around edge of the ancient Kamakura to spread the habitable area to hillside and fill the low ground. This series of deposit is interpreted as deposit of a wetland, which is documented and mapped in ancient literatures. The uppermost layer is landfill formed in the modern age, approximately 1910s.

The deposit of historical wetland created in the calm environment was expected as the host of event deposits that include tsunami deposit; however, we recognized it is highly affected by current of river. This means that the area is not ideal for tsunami deposit research. However we are still due to evaluate each layer, since deposit processes of some layers are not certain. We will also give some data in the session to deepen discussions on geology of this area.

Keywords: Kamakura, Zaimokuza, topographic development, Tsunami, wetland