

Constructing the data base of liquefaction at archeological sites in the Tokyo metropolitan area

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In the Tokyo metropolitan area, seismic damages were occurred by various earthquakes due to its particular condition of the Philippine Sea slab verges the Pacific slab. To obtain a better understanding of time horizons seismic damages, it is important to trim the records of previous earthquakes for not only the historical records, but also archeological sites. Horiguchi et al. (1985) and Sangawa (1990) reported the liquefaction evidence at archeological sites, and Disaster concerned archeologists' network (1996) gathers information from over all Japanese islands. However, after the Disaster concerned archaeologists' network (1996), even so many excavation were conducted at many archeological sites, the information of liquefaction evidence which covers metropolitan area is disorganized. Against this background, in special project for earthquake disaster mitigation in Tokyo metropolitan area which starts in 2007, creation of the database of liquefaction evidence at archeological sites has been started from 2009. We will organize archeological information of Tokyo metropolitan area (Tokyo, Kanagawa, Chiba, Saitama, Gunma, Tochigi, Ibaraki and Yamanashi prefectures), and create database of liquefaction evidence by 2011.

The targeted areas in 2009 were three prefectures; Saitama, Gunma and Tochigi, and we focused on alluvial lowland, especially Tone River areas where prone to liquefaction. We gathered the information from about 1300 reports, and of 100, liquefaction evidences were found. From these data, we organize remains name, location and liquefaction age, and create the database using GIS (Geographic Information System).

The sand dykes are found in multiple layers, from remains, artifacts and tephra age, the evidence of earthquake occurs in 9th century, were reported in many cases. These are in contrast with historical records, in many reports, it is concerned as the evidences were made by the earthquake in 818 or 878.

In this presentation, we gathered the earthquake evidence from archeological sites in Saitama and Gunma prefectures where many evidences were reported, and would like to argue and consider the past earthquake and its liabilities.

Keywords: liquefaction evidence, sand dyke, earthquake, archeological site