

Chronology of Kanto Loam formations and Late Pleistocene fluvial terraces using OSL and pIRIR dating in the Kanto plain

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In the Kanto plain, chronology of fluvial and marine terraces has been reconstructed mainly by Kanto Loam formations and key tephra. However, since key tephra are not so common in Musashino Upland, application of new chronological measurement method is necessary. At first OSL dating was applied to Tachikawa Loam. However, OSL ages were estimated to be too young. Since abundant quartz grains are contained in sediments of younger volcanic origin. Consequently, new chronological measurement method, the pIRIR dating method was applied to some tephra horizons in Tachikawa and Musashino Loam, and terrace deposits.

From AT tephra horizon along Hanamuro-river, Tsukuba, the OSL age value about 14 ka was obtained and the pIRIR age value about 30 ka was obtained. Tsurugasima, Saitama, the pIRIR age value was about 30 ka for AT tephra horizon. In Tachikawa, Tokyo the OSL age value was about 27 ka and the pIRIR age value was about 30 ka for AT tephra horizon. These results indicate clearly that the pIRIR dating is a useful method to determine ages of late Pleistocene Kanto Loam, tephra and terrace deposits at least in Kanto, even if those include young volcanic Quartz.

Keywords: OSL dating, pIRIR dating, Kanto-Loam, Tachikawa terraces, Musashino terraces, Tephra