

## Detection of the Amagi-Kawagori tephra (Kg) in the Shijima lowland, the Shima Peninsula, and its significance to reconstruct tsunami history

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The coast from the eastern to the southern part of the Kii Peninsula facing the Nankai Trough is located near the boundary between the Tonankai and the Nankai Segment of the past large earthquakes. Therefore, reconstruct of the tsunami history in this area is very important for evaluating the rupture area of the past Nankai Trough Earthquake. Tsunami deposit surveys have been carried out in marshes and lagoons along the coast, but it is difficult to correlate between each survey site. Here we report that the Kg tephra (around 3100 cal yBP), which is effective wide-spread tephra as a key to the correlation of the tsunami events, was found in marsh deposit obtained from the excavation survey at the Shijima Lowland, the Shima Peninsula.

In the Shijima Lowland, Fujino et al. (2018) identified ten sand layers (Sand A - J) recording tsunami history in marsh deposit. In this study, we carried out excavation survey using hand corer to a depth of 483 cm at the lowland, and detailed microscopic observation to each 5 cm thick samples from the obtained core. As a result, pumice type volcanic glass was detected from the depths of 265-270 cm and 275-280 cm. Particularly in the vicinity of 276 cm in depth, about 5 mm thick of pale white layer can be observed visibly. Also, from the A2 core in Fujino et al. (2018), about 5-8 mm thick of pale white layer in the organic silt between Sand G and Sand H was identified, and the same type of volcanic glass was detected.

Measuring the refractive index of these volcanic glasses using MAIOT, the counted value was concentrated in the range of 1.499 to 1.501, which is well-matched to the value of the Kg tephra (1.495-1.502) proposed by Machida and Arai (2003). Component analysis data by EDX performed by Furusawa Geology Ltd. is also consistent with previous research results on the Kg tephra.

The detected horizon of the Kg tephra in the A2 core constrains the age of Sand G and Sand H. As a result of this study, it can be estimated that those are 3100-2740 cal yBP and 3600 - 3100 cal yBP respectively.

In the southernmost part of the Kii Peninsula, Kitagawa et al. (2017) reported the Kg tephra detected from coastal marsh deposit intercalated between event sand layers whose ages were estimated to be 2950-2470 cal yBP and 3390-3100 cal y BP respectively (Shishikura et al., 2014). These sand layers can probably be correlated between two sites. The Kg tephra is an important key to reconstruct the tsunami history along the coast of the Kii Peninsula, and it is expected to clarify the occurrence pattern of the Nankai Trough Earthquake.

Keywords: Shima Peninsula, Shijima Lowland, Nankai Trough, Amagi-Kawagodaira tephra, tsunami history, tsunami deposit