

pIRIR dating for marine terraces along the Kesennnuma Bay in Sanriku coastal area, Japan

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Kesennnuma Bay is located in Sanriku coastal area characterized by a rias coastline. This area was regarded as having five marine terraces (Miura, 1966). Miura (1966) mentioned Iwatsuki terrace was formed in the high sea level time of the last interglacial period because of the weathering condition of deposits and bed rocks. In Koike and Machida (2001), Iwatsuki terrace was formed in Marine Isotope Stage (MIS) 5e, after Miura (1966). Kaizuka et al. (1985), however, suggested a possibility that marine terraces in the southern part of Sanriku coastal area are submerged below the sea level.

In this study, we tried to determine the age of the terraces using pIRIR dating (Buylaert et al., 2009) which is the latest luminescence dating method.

Studied sites are located in Iwaizaki area, southern area of the Kesennnuma Bay coast where the terrace topographies are well preserved, and marine and eolian deposits are overlying the bed rocks. The marine terraces in this area have been regarded as Katahama terrace (MIS 5c) and Iwatsuki terrace (MIS 5e). Eolian loess (loam) and marine silt were sampled from the outcrops for pIRIR dating. As a result of pIRIR dating, three marine terraces, one is strath and the others are fill strath type, are suggested to have been formed during the MIS 7. One of these marine terraces is emerged nearby the coastline. This suggests the marine terrace of MIS 5e might be below the sea level like an idea of Kaizuka et al. (1985).

Keywords: Sanriku coast, marine terraces, pIRIR dating, loess, Iwatsuki terrace, Katahama terrace