

## Paleomagnetic and paleoenvironmental studies for the U-M Pleistocene boundary Tukabara Formation

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The Tukabara formation distributed along the Tukabara coast, Minamisoma City, Fukushima Prefecture, which is considered to have been deposited at early part of the last interglacial period, since the sediments suggested a transgression that leads to the marine isotope stage 5e. The base of the Tukabara formation consists of a basal gravel layer and the Tagashira tephra bed which is detected at the MIS 5/6 boundary in the Images MD01-2421 core taken from off Kashima, Pacific side of the central Japan. The main part of the formation consists of a 7 meter thick varved siltstone including enough diatom and pollen fossils to reconstruct paleoenvironment. Previous paleomagnetic studies reported a reversed polarity from this siltstone layer which was correlated as the Blake excursion. Here we report results of reexamined paleomagnetic and rock-magnetic analyses.

The silt layer, consisting of the main part of the Tukabara formation, is divided into following three parts based on paleomagnetic characteristics; Upper Zone: unstable magnetization direction after both of alternating-field thermal demagnetizations, Middle Zone: stable magnetization direction after both of alternating-field and thermal demagnetizations, Lower Zone: stable magnetization direction after alternating-field demagnetization but after thermal demagnetization. Rock magnetic and paleomagnetic experiments exhibit that the Upper Zone of the siltstone has significantly low magnetization intensities which is supposed to be due to a weak geomagnetic field caused by the Blake excursion during the deposition.

We will also report preliminary results of paleoenvironmental reconstruction using microfossil analyses. Diatom fossils were produced from all of the silt stone layers. Based on diatom assemblages, the silt layer is divided into three parts as follows; Diatom Zone 1: a marine genera dominance zone at the bottom part, Diatom Zone 2: freshwater genera dominance zone at the middle part, Diatom Zone 3: marine genera dominance zone at the top part. In the Diatom Zone 2, a shallow water genus *Rhaphoneis* is not seen and a freshwater cosmopolitan species *Diploneis elliptica* is abundant. Furthermore, a lot of varves can be well observed this Zone. This indicates that the zone is supposed to be deposited under a stagnant condition caused by a closed estuarine like environment with a fresh water discharge.

Keywords: Upper-Middle Pleistocene boundary, Paleomagnetism, Paleoenvironmental reconstruction, Blake event