

## Tephrostratigraphy of marine cores from the off Shikoku in the Northwest Pacific during the last 320 kyrs

# Minoru Ikehara[1]; Masafumi MURAYAMA[2]; Osamu Tadai[3]; Satoko Ishikawa[4]

[1] Center Adv. Marine Core Res., Kochi Univ.; [2] Marine Core, Kochi Univ.; [3] MWJ; [4] Institute of Geology and Paleontology  
Graduate School of Science

### 1. Introduction

Tephrostratigraphy is very useful tool to reconstruct the past time framework for marine sediment cores. Northwestern Pacific has many widespread tephras that can serve as time markers, because many volcanoes in the region had repeated large eruptions from the middle Pleistocene to the Holocene. Two IMAGES cores MD012422 and MD012423 were collected from the lower part of continental slope basin off Shikoku and from the central Tosa Basin, respectively. Here we report that the lithostratigraphy, age model, tephrostratigraphy of these cores and estimated eruption ages of identified tephras.

### 2. Method

Age models of two IMAGES cores were established by oxygen isotope stratigraphy and radiocarbon dating. Refractive indices of glass shards were analyzed to identify the widespread volcanic ash using the RIMS2000 system. For three tephra layers, mineral assemblage and refractive indices of orthopyroxene were obtained in this study.

### 3. Results and discussion

Six tephra layers are described in core MD012422 and MD012423. Holocene tephras of two cores are correlated to the Kikai-Akahoya (K-Ah) tephra from the Kikai Caldera on the southern Kyushu, and the Aira-Tn (AT) tephra from Aira Caldera was also obtained in core MD012422. The eruption age of AT tephra was estimated to be 28.1-28.3 cal kyr based on AMS 14C dating of planktonic foraminifera. A tephra layer, which is located at near MIS 4/5 boundary in MD012422, is correlated to the Aira-Iwato (A-Iw) tephra, based on the refractive indices of volcanic glass shards, orthopyroxene, and hornblende. A tephra layer, which is corresponded to the late MIS 5.5, is correlated to the Aira-Fukuyama (A-Fk) tephra. The Aso-4 tephra, which is thought to be a most major widespread tephra at MIS 5, was not observed clearly at off Shikoku. Ata-Toihama (Ata-Th) tephra was also identified in the MIS 8.1 section of core MD012422. Kakuto (Kkt) tephra was also identified in the MIS 9.2 of core MD012422. The relationship between these tephra layers and oxygen isotopic stratigraphy is important for discussing the revised tephrochronology and distribution of widespread tephras during the middle to late Pleistocene.