Orbital and suborbital scale paleoceanographic features for marine isotope stage 19 from the Chiba section well correlated with those from Osaka Bay and North Atlantic

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Chemical and magnetic data of a 54-m long core drilled near the Chiba section, Tabuchi provide excellent proxies of sea-level variations. The Ca/Ti ratio, magnetic susceptibility, ARM, and ARM/magnetic susceptibility values measured every 1 cm interval show variations well correlated with those from the oxygen isotope data from planktonic foraminifera fossils. The existence of such correlations reflects combined effects of changes in biogenic calcium carbonate production, accumulation rate (a.r.) and grain size of clastics due to sea-level variations. The Ca/Ti curve, a best sea-level proxy, shows precession-related signals correlated with highstands 19.3 and 19.1, and lowstand 19.2. The orbitally tuned Ca/Ti curve represents a number of centennial scale features well correlated with those of sea-level proxies from Osaka Bay and North Atlantic. In consideration of a.r. variability, the age model for the Chiba section was refined with more control points between the orbital scale control points, adjusting to the astronomical time scale for the Osaka Bay core that has a uniform a.r. In the early MIS 19, the highest sea-level peak is preceded by a sea-level fall event, as in Osaka Bay. After MIS 19.2, there are many millennial scale fluctuation features, most of which are observed in the records from Osaka Bay and North Atlantic (IODP site U1313). These features are possibly global, and some of them are affected by eustatic sea-level changes. The MBB is dated at 777 ka in Osaka Bay, and 778 ka in the Chiba section and the North Atlantic.

Keywords: Chiba section, Matuyama-Brunhes boundary, Osaka Bay, North Atlantic, sea-level variation

