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Temporal variability of the sedimentary magnetic properties off southeastern Mindanao.

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The southern Mindanao area is a key area for understanding past changes in the complex system of the oceanic circulation dominating in this area. This includes the surface Indonesian Throughflow transporting warm and low-salinity water from the Western Pacific Warm Pool to the eastern Indian Ocean and the Mindanao undercurrent transporting intermediate waters northward *via* recirculation of the Mindanao Eddy below 200m. This area is also affected by the Eastern Asian Monsoon and the seasonal changes in the position of the Inter-Tropical Convergence Zone (ITCZ).

We present here a detailed study of the magnetic properties of core MD06-3067 taken during the IMAGES XIII-Marco Polo 2 cruise on board the R. V. *Marion Dufresne* (IPEV). This core is located along the main path of the Mindanao current and Mindano undercurrent, at the southeastern tip of Mindanao island (06˚30.86'N; 126˚29.86'E) at 1574 m water depth. Based on the oxygen isotope stratigraphy, the bottom of this 15.53 m long core reaches Marine Isotopic Stage 6 (MIS6).

Different experiments show that the dominant magnetic mineral is magnetite. Changes in the grain size of the magnetite grains is evaluated from the ARM/chi, ARM/IRM ratios and from the magnetic hysteresis parameters, Hc, Hcr, Ms, Mrs. The low field susceptibility magnetic fabric was also retrieved from magnetic anisotropy measurements and used as a tracer for bottom current direction.

The results show that the concentration in magnetic minerals is dominated by the precession orbital periodicity (23 kyr), illustrating monsoon related-run-off variations on the island of Mindanao. The magnetic grain size, remarkably consistent with the changes in the sortable silt is sensitive to the eccentricity (100 kyr) and precession (23 kyr). Together with the magnetic fabric, they illustrate changes in bottom current activity, probably related to the Mindanao undercurrent. Stronger currents are active during glacial periods than during interglacial periods.

At sub-orbital scale, the continuous geomagnetic intensity profile is extremely similar to the master curve GLOPIS-75 between 28 and 50 kyr including a marked low associated with the Laschamp excursion. The Greenland age scale could therefore be transferred onto core MD07-3067, allowing us to refine at sub-millenial scale the isotopic age model for this time interval. At this scale, it appears that the short-term fine grain events illustrating weak bottom current activity are perfectly coeval with the warmest Greenland events (interstadials 8, 12 and 14).

These magnetic results illustrate the sensitivity of oceanic bottom currents to the global climate changes and that will be discussed at the different time scale.