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Investigating the inflow path of the Indonesian troughflow: a palaeontological and geochemical multiproxy reconstruction for the last 140 kyrs.

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The Indonesian Throughflow (ITF) represents a key component in the global thermohaline circulation through the transport of Pacific thermocline waters to the Indian Ocean. Thus, understanding its temporal variability is critical to reconstruct past changes in the global circulation system as well as climatic variations in the Australasian region. ITF variability is strongly linked to monsoon and ENSO dynamics, which modify thermocline depth in the West Pacific Warm Pool and alter the ITF vertical profile and current flow intensity through the Indonesian seas. In this study, we use multi-proxy records (multispecies foraminiferal δ^{13}C, δ^{18}O, Mg/Ca, coccoliths and benthic foraminiferal assemblages, X-ray fluorescence scanning and magnetostratigraphy) from a new core recovered in 1575 m water depth off the eastern coast of Mindanao island (Philippines) in July 2006 during the Marco Polo II cruise. IMAGES Core MD06-3067, located within the main inflow path of the ITF at the northeastern edge of the West Pacific Warm Pool, provides a unique archive to closely track changes in sea surface temperature, depth of thermocline, paleoproductivity and land-derived flux over the last 140 kyr. Preliminary results indicate complete recovery of a carbonate rich sedimentary succession with average sedimentation rates of 10-12 cm/kyr. A strong influence of the East Asian Summer monsoon within the ITF inflow area is detected by a distinct precessional signal in terrigenous flux proxies (XRF Fe, Ti and Al) with a maximum in the early Holocene. We will integrate these data

with primary productivity and thermocline reconstruction proxies to investigate the variability of the upper ocean within the ITF inflow.