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Holocene to last glacial ITF variability

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The Indonesian Throughflow (ITF) represents the only tropical ocean interbasin connection and is primarily driven by sea level gradients between the western Pacific and the Indian Oceans. On average, the ITF transports in excess of 10 Sv of relatively warm and fresh North Pacific water, primarily in the thermocline, to the Indian Ocean. Both direct and proxy measurements have revealed substantial annual and interannual variability in the ITF that is related to monsoonal strength and ENSO phase and expressed as changes in sea level, thermocline depth, and flow vector. We extend these observations into the last glaciation utilizing MD05-2970 (009d 25.00, S, 131d 0.00'E; 437 mbsl), sampled at approximately 500 year resolution and located in the Timor sea along the primary outflow location of the ITF. Stable isotope and Mg/Ca data from the benthic foraminifer *Uvigerina* sp. will allow determination of changing water properties and thermocline depth, which is conventionally denoted by the 20 degree C isotherm in this location. Subsequently generated Nd isotope data will help to constrain changes in water provenance.

キーワード: ITF, Mg/Ca, oxygen isotopes, benthic foraminifer

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