



## **Th-230 Dates of MIS 5e Coral Terraces in Kisar Island, Eastern Indonesia**

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2004 Sumatra earthquakes caused a devastating tsunami and cost the lives of nearly 260,000 people in the South Asian region. These earthquakes and associated tsunami are sourced from convergence of the Indo-Australian and Asian Plates. In the eastern part of this plate boundary the Australian continent is colliding with Asia. The first turbiditic sand in Timor island was around 5 Ma and the collision propagated to the southwestern until  $\sim 2$  Ma. But the activities of the neighborhood of the Timor island in the Quaternary or the Holocene is unknown. This study provides the new  $^{230}\text{Th}$  dates from the raised coral terraces at Kisar Island, eastern Indonesia. Eight fossil corals were measured by MC-ICP-MS at the National Taiwan University with permil-level precision. Two out of the eight samples having  $\sim 1.5\%$  calcite and acceptable  $\delta^{234}\text{U}_{\text{initial}}$  showed robust ages of 123-121 ka. Another three open-system model ages were from 125-119 ka by Thompson et al.'s method (2003). These different elevated fossil corals with ages of 125-119 ka favored the two-peak sea-level curve in MIS 5e explained by Chappell and Veeh (1978). New age results relocated the second peak should be about three thousand years earlier than their proposed 119 ka. A minimum uplift rate of 0.1 m/kyrs is derived from the highest-position fossil corals. The  $^{230}\text{Th}$ -dated fossils in the north coast of Timor-Leste suggest the MIS 5e terraces could reach 55 m high, hence a referable uplift rate of  $\sim 0.4$  m/kyrs could be a maximum estimate. The uplift rate of 0.1-0.4 m/ka since late Pleistocene is well consistent with published values from Atauro Island and Timor-Leste in eastern Indonesia. Based on the uplift rate, the terraces in eastern Kisar, with elevation lower than 100 m, expectedly located at MIS 7, 9, or 11; while the higher western terraces ranged from MIS 9-15. Besides, no remanet of Holocene fringe reefs around Kisar Island also suggests a relatively low activity of tectonics, in agreement with the modern GPS observation.