

## Quaternary uplift history along a passive margin in Tiwi, Oman

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This work explores the uplift history of the best exposed marine terraces in the eastern Arabian Peninsula. A multi-disciplinary approach was employed including a topographic survey, 14C dating, thin section studies and scanning electron microscopy analyses. Six distinctive marine terraces with approximate widths ranging from kilometers to tenth of meters and elevation from five meters to approximately 400 meters were investigated. These terraces record an along-strike heterogeneous uplift history, while they show temporally variable uplift rates ranging between 2.1 to 3.5 mm/a. We attribute the variable uplift along strike of the terraces result from a combination of mechanisms such as vertical movements along deep-rooted reverse faults that bound large crustal-scale blocks (extent >100 km) and/or subsidence on the outer trench wall of the forebulge of the lower (Arabian) plate as it bends to enter the Zagros subduction zone. Other mechanisms are also suggested based on the new findings in the area.