Last Interglacial Sea-Level Indicators in the Western Indian Ocean

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With global average temperatures 2°C higher than pre-industrial and eustatic sea-level ranging between 5 and 9 m above present, the Last Interglacial is often regarded as a good process-analogue for a future warmer climate. Large uncertainties are associated with Last Interglacial eustatic sea-level estimations. To quantify these uncertainties through standardization of sea-level metadata, the World Atlas of Last Interglacial Shorelines (WALIS) provides a community-wide standard for documenting the geological context of sea-level indicators and their chronology. By applying this standard, WALIS allows for the quantitative cross-comparison between previous studies, often times separated by decades.

We use WALIS to review published sea-level indicators for the Last Interglacial within the Western Indian Ocean basin. Located in the far field with respect to past glaciations, the Western Indian Ocean has the potential to provide precisely measured and dated sea level proxies, enabling a reliable estimation of maximum eustatic sea level for the Last Interglacial. This, in turn, would allow to better constrain upper boundaries of melting within ice-sheet models. Furthermore, this review highlights localities that should be revisited based on the presence of geological facies indicative of former highstands where not enough detail has been reported or where advanced dating and geodetic techniques can increase the accuracy of metadata.