

## Late Holocene $^{14}\text{C}$ variations recorded by a speleothem from Yok Balum cave, Belize

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Speleothems have recently emerged as powerful archives for terrestrial climate reconstructions, mainly because of their ubiquitous presence on all continents and the possibility of high-precision dating with the U/Th method. As multi-proxy archives, speleothems incorporate a wealth of information on climatic and environmental conditions throughout their growth. Stable oxygen isotopes can record precipitation amount and/or temperature, but a series of other proxies are potentially more diagnostic for local/regional conditions, e.g. stable carbon isotopes, radiocarbon ( $^{14}\text{C}$ ) and trace elements. These proxies have often been neglected in the past, but are of great importance for the characterization of karst signal transfer and correct proxy interpretation.

We present a decadal-resolved, 2000-year-long  $^{14}\text{C}$  record from a U/Th dated speleothem from Yok Balum cave, southern Belize. Samples were extracted at 0.5-1mm resolution, graphitized and measured by AMS. Considerable variability in  $^{14}\text{C}$  activity (decay-corrected,  $\Delta^{14}\text{C}$ ) exists across the last 2000 years that tends to track atmospheric  $\Delta^{14}\text{C}$  (IntCal13), with a delayed response of the stalagmite of 30-60 years. This suggests close coupling and rapid surface-speleothem signal transfer in the Yok Balum karst system. Other features of the speleothem record may be related to changes in karst hydrology, as shown by a pronounced increase in  $\Delta^{14}\text{C}$  during the Terminal Classic Maya drought (700-1100 AD).