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##### Duesing, W., Trauth, M., Thom J., Schaebitz, F., Deino, A.L., Asrat, A., Foerster, V.E., Marwan, N., Lamb, H.F., and Kraemer, H., 2018 PP3 [PP22B-02 Human evolution and climate change: What can we learn from the 0-630 kyrs BP paleoclimate record from the Chew Bahir basin in eastern Africa?](https://agu.confex.com/agu/fm18/meetingapp.cgi/Paper/406207)  AGU Fall Meeting, Washington, D.C.

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Numerous authors have developed hypotheses linking climate, the environment and human evolution, expansion and technological innovation in eastern Africa (e.g., Potts, 2013, Potts et al. 2018; Maslin et al., 2015). The Chew Bahir Drilling Project (CBDP) as part of the Hominin Sites Paleolakes Drilling Project (HSPDP) aims to test some of these hypotheses by providing a long, continuous and high-resolution paleoclimate records of climatic and environmental change through critical intervals of human evolution.

Testing such hypothesis requires a very accurate age model both for the paleoclimate record, but also for the archeological/anthropological evidence. We therefore developed a MATLAB-based Multiband Wavelet Based Age Modeling Technique (*mubawa*), which generates an orbital tuned age model that comprises uncertainties. Next, we use a piecewise correlation using a set of different sliding windows to compare the Chew Bahir paleo records on different time scales with Indian Ocean SSTs, Terrestrial Dust and Nile-Outflow records. To classify variability and transitions we use recurrence plots/recurrence quantification analysis. Application of this method detects nonlinear features such as tipping points, which are often coherent with changes in variability and strong precursor events. The recurrences of such precursor events often lie within the life span of hominins. For individuals living during that time these drastic climate shift were perceptive and probably provoked new survival strategies that may have preserved in the archeological record.