167

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Hypotheses invoking climatic drivers of human evolution have primarily focused on the relative importance of directional changes (e.g. increased aridity) vs. changes in environmental variability. In tropical Africa, on evolutionary timescales, the latter has commonly been assumed to be a reflection of changes in orbitally-forced insolation. However, environmental variability, as experienced by populations of organisms, is a composite of numerous potential drivers operating at a wide variety of spatial and temporal scales. Paleorecords themselves, whether from outcrops or marine/lacustrine drill cores, can provide an integrated archive of these numerous sources of variability. These records can be compared directly with the timing or directionality of evolutionary events in the fossil/archaeological record. HSPDP was developed to assemble high resolution paleo-environmental drill core records through critical intervals of human evolutionary history, and evaluate hypotheses linking them. We are now developing metrics to measure and compare the extent and history of both directional change and environmental variability from our new records while comparing these with previously established environmental and climate records. In this presentation, we provide a progress report summarizing these records of variability over the past ~5Ma and compare them with records from elsewhere in Africa.